

# Investing for Sustainability: Real Estate

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## Executive Summary

As environmental, social and governance (ESG) investing has gone mainstream, the world's largest and most sophisticated institutional investors are expanding their usage of ESG criteria across asset classes. Real estate has yet to receive the level of attention of other asset classes. However, given the substantial role of buildings in our lives and those of the companies that own, manage and occupy them, real estate is a major part of the sustainability challenge, and a major economic opportunity as well.

This paper discusses the opportunity for investing in sustainable real estate and puts forward a strategy to do so:

**Section 1. Introduction.** We identify the need for a publicly-traded real estate fund that integrates sustainable criteria.

**Section 2. The Case for Sustainable Buildings.** This section summarizes the opportunities available to make buildings more sustainable and the financial implications of doing so.

**Section 3. The Opportunities for REITs.** We describe the important role real estate investment trusts (REITs) play in the built environment and in investment portfolios.

**Section 4. Defining the Metrics of Sustainability in Real Estate.** There are many ways to define sustainability. We compare how different stakeholders prioritize different factors. We then list metrics that are most material to the performance of real estate assets, and most important to investors.

**Section 5. A Strategy for Investing in Sustainable REITs.** We set out a methodology for a real estate strategy. We define the metrics and the security selection criteria for qualification and disqualification from the portfolio.

## 1. INTRODUCTION

“Investing for Sustainability” could mean different things to different people. It is not synonymous with “ethical” or “socially responsible” investing, though it certainly shares some common ground, especially when it comes to considering people and planet. Vert defines it as going beyond the traditional financial-only metrics of security analysis by incorporating Environmental, Social, and Governance factors or ESG.

Some investors are moving beyond a single-minded focus on company financials. They worry that a profit-only focus is short-sighted because it neglects to consider longer term risks. They want to factor in the environmental and social risks and opportunities that a company faces because these factors may eventually impact the bottom line. Some investors also wonder how their investment capital will be used by companies, and wish that no unnecessary harm is done to people or the planet. Others see the potential for improving profits as companies take advantage of the shift to a more sustainable way of operating. Many of these investors have turned to ESG investing.<sup>1</sup> Today, ESG criteria are considered for \$8.72 trillion in professionally managed assets in the US alone.<sup>2</sup> It is no longer a niche approach, but rather one adopted by many of the world’s largest and most sophisticated institutional investors.

### ESG investing has gone mainstream

More investment strategies that take an ESG approach have become available to the individual investor. Today, investors can take advantage of dozens of

#### DEFINITION: TBL and ESG

Companies concerned with operating sustainably focus on more than just the bottom line. In 1994, John Elkington coined the term **Triple Bottom Line** to distinguish firms focusing on people and planet as well as profits. Sometimes shortened to 3P (people, profit, planet), but more often to **TBL**, it is shorthand for sustainability from a company’s perspective.\*

Investors approach sustainability from an **ESG** perspective; they monitor the **environmental, social, and governance** performance of firms, in addition to the financial performance.

\* The ‘Triple Bottom Line’ phrase originated in 1994 with John Elkington founder of SustainAbility; most notably in the paper: Elkington, J. (1994, January 1) “Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development”, *California Management Review*, vol. 36, 2: 90-100.

ESG mutual funds, ETFs, and index funds in asset classes like large cap equity. Other asset classes, like real estate, have been largely overlooked to date. At first glance this makes sense, as investors usually place only 5-10% of their liquid investable assets in real estate. Yet, we spend 90% of our time indoors, and buildings account for 40% of the Greenhouse Gases (GHG) we contribute to the environment.<sup>3</sup> Thus, real estate is a major part of the sustainability challenge, and a major opportunity as well.

**Real estate is both a sustainability challenge and an opportunity**

Buildings are a challenge to green objectives as they use large quantities of resources, including energy, water, and construction materials. But they also present an opportunity, as noted by the World Resources Institute in 2017:

*“The environmental impact of the built environment can be minimized with energy efficient buildings, as well as with environmentally sound siting decisions, materials selection, water use, and waste management. In addition, energy efficient buildings contribute to better indoor and outdoor air quality through reduced pollution and improved ventilation, leading to health and economic benefits.”<sup>4</sup>*

These benefits are economic as well. Property owners and tenants have ample scope to profit from energy efficiency retrofits and building improvements. Reducing energy use reduces costs. And better buildings command more rent and are worth more.<sup>5</sup> The investment case is straightforward: companies taking advantage of these opportunities can profit handsomely.

## 2. THE CASE FOR SUSTAINABLE BUILDINGS

The built environment is all around us: it accounts for the buildings we inhabit, the roads we use, the sidewalks, our leisure space – everything that makes up our landscape, how it interacts with the natural environment, and how it shapes our daily lives.

The idea that real estate has tremendous potential to help create a better future (a better today) is not particularly new. For example, University of Wisconsin Professor James Graaskamp, a pioneer of modern real estate education, said, in 1998:

*“Man really is the only animal that builds his terrarium around him as he goes and real estate is really the business of building that terrarium. So we have a tremendous ethical content, tremendous social purpose...It is a field in which entrepreneurship...can be integrated into social purpose...The entrepreneur of tomorrow is going to be the individual who can inventively implement social policy.”<sup>6</sup>*

### 2.1 The Environmental Opportunity for Buildings

Buildings are a major component of the built environment, particularly our stock of office, residential, retail, and other buildings; all of which play a major role in sustainability. According to the UN Environment Programme (UNEP),

*“The construction and operations of buildings account for 40% of global energy use, 30% of energy-related GHG emissions, approximately 12% of water use, nearly 40% of waste, and employs 10% of the workforce.”<sup>7</sup>*

Buildings are both large consumers of energy and producers of emissions. There is great potential to improve the performance of buildings around sustainability issues. UN official programs such as the UNEP Finance Initiative and its several working groups pull multiple stakeholders together on a range of topics from human rights initiatives to responsible property investing. This group, a rotating collective of industry experts, property investors, and academics, provide insightful guidance on a range of issues affecting the buildings sector to raise awareness and drive change.

*“The built environment can catalyze opportunities for a wide array of global and local challenges including climate change, land-use, demographic shifts, water and other resource scarcities. Two billion additional urban inhabitants are expected by 2030...With this rapid growth comes an urgent need for sustainable buildings and construction and through the integrated, global*

*approach and support of this programme, buildings can improve the social, environmental and economic performance of cities, regions and nations.”<sup>8</sup>*

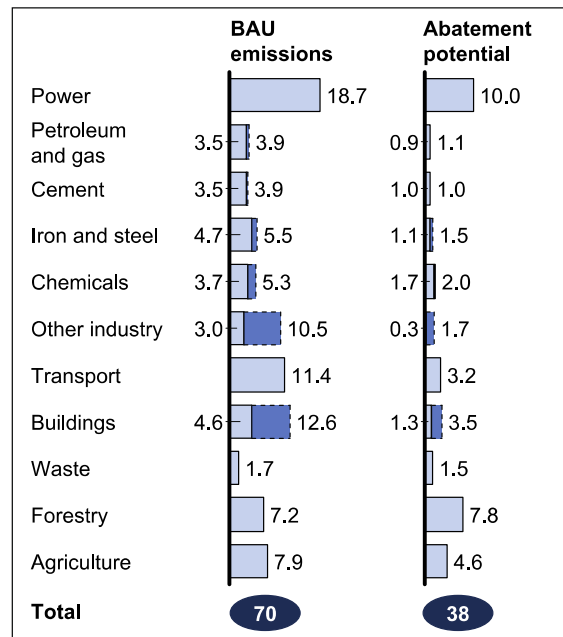
In terms of climate change, the most recent assessment by the Intergovernmental Panel on Climate Change (IPCC), the international body for assessing the science related to climate change, ascertained there was robust evidence and agreement that:

*“Buildings represent a critical piece of a low-carbon future and a global challenge for integration with sustainable development.”<sup>9</sup>*

One reason why buildings are central to a low-carbon future is the tremendous potential to lessen their role in the production of greenhouse gas (GHG) emissions. The buildings sector alone could achieve approximately 10% of all GHG reduction worldwide by 2030. This is the fourth largest opportunity, just behind power, forestry, and agriculture.<sup>10</sup>

Figure 1 compares 11 sectors with their business-as-usual (BAU) emissions and their relative abatement potential.<sup>11</sup> The light blue boxes represent direct emissions which are produced by sources owned and operated by companies in that sector. The blue dotted boxes represent indirect emissions which are emissions from the consumption of purchased energy including electricity or

**Figure 1:** Emissions and abatement potential by sector (GtCO<sub>2</sub> per year; 2030)



Note: To obtain the total BAU emissions, only direct emissions are to be summed up. To obtain total abatement potential, indirect emission savings need to be included in the sum.  
 Source: McKinsey & Company (2009) Pathways to a Low Carbon Economy (McKinsey & Company) 13.

fuel. For buildings, the direct emissions production may be relatively small, but the indirect emissions are huge because buildings purchase tremendous amounts of energy.

After buildings, the next biggest opportunity for GHG abatement lies in the transport sector (indicated in Figure 1 above). Transportation is closely linked to how buildings contribute to GHG quantities. The location of buildings can have a significant impact on mobility or how much driving is required as compared to less carbon intensive or multi-passenger transportation options. When jobs or homes are closer together, built near transit, or in bike-able and walkable places, then residents, workers, and customers drive shorter distances or travel by less carbon-intensive alternatives than driving alone.

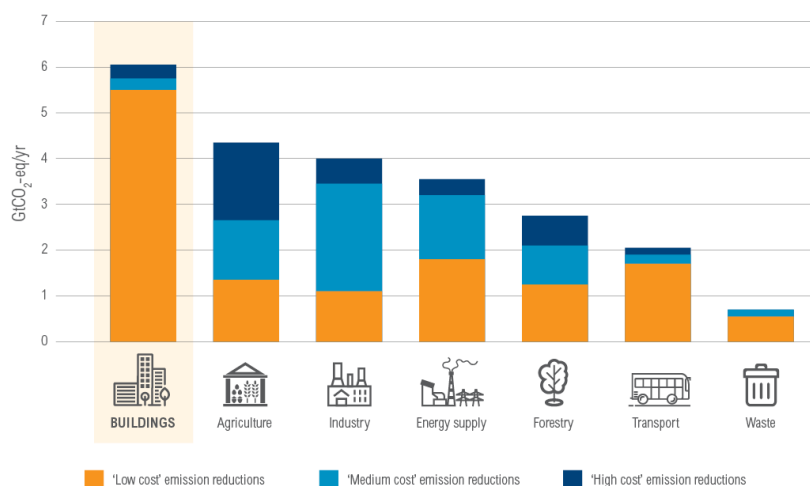
## **2.2 The Economic Opportunity for Buildings**

In real estate, addressing emissions reduction isn't just a win for the environment, it is also an economic opportunity. Making sustainable upgrades to properties old or new can have beneficial results in terms of cash flow. For instance, a property with green building certifications could see higher occupancy rates or increased tenant satisfaction which could translate into longer leases, higher demand or a rent premium. Implementing sustainability remediation or improvements could reduce operational costs through lower operating expenditures and maintenance costs; lower exposure to energy price risk; or lower insurance and debt cost. Additionally, addressing sustainability issues could affect the market values of a property or portfolio providing a price premium, a lower default risk, lower volatility and slower rate of depreciation.<sup>12</sup> (For empirical research that support these findings, please see Appendix A).

The greatest potential to abate GHG emissions in the building sector is to install efficient systems in new and existing residential, commercial and public buildings. In new buildings, this is normally achieved through building design and orientation that takes advantage of passive solar energy. For existing buildings, strategies with the largest potential for abating emissions include retrofitting building envelopes to improve air-tightness, introducing LED light-bulbs, and installing energy-efficient appliances and electronics. Figure 2 (below) shows that some GHG abatement solutions that are low cost –

swapping out incandescent lights for LED lights – have the greatest cost to benefit ratio.<sup>13</sup>

**Figure 2:** Building efficiency is one of the most affordable ways to cut emissions



Note: 'Low cost' emission reductions – carbon price <20 US\$/tCO<sub>2</sub> –eq. 'Medium cost' emission reductions = carbon price <50 US\$/tCO<sub>2</sub> –eq. 'High cost' emission reductions = carbon price <100 US\$/tCO<sub>2</sub> –eq.

Source: Intergovernmental Panel on Climate Change (IPCC) (2007). "4.3 Mitigation Options." In *Fourth Assessment Report: Climate Change 2007: Synthesis Report*. Retrieved from [https://www.ipcc.ch/publications\\_and\\_data/ar4/syr/en/mains4-3.html](https://www.ipcc.ch/publications_and_data/ar4/syr/en/mains4-3.html) also available via World Resources Institute [wri.org/buildingefficiency](http://wri.org/buildingefficiency).

The buildings sector is second only to the transport sector in the amount of capital needed to achieve its full abatement potential. This makes it important to find attractive investment vehicles that will channel funds to property companies that are making GHG abatement investments in real estate portfolios. However, while upfront financing might be challenging, the long-term abatement cost in the buildings sector is negative, and the lowest for any sector, because the investments pay for themselves in high energy savings (Figure 3 below). About 75 percent of the total abatement potential in buildings shows net economic benefits, or a positive return on investment.

For example, in 2010 the iconic New York Empire State Building underwent a retrofit.<sup>14</sup> Originally built in 1930, it languished in recent decades, no longer appealing to office tenants who had moved downtown or to Brooklyn. However, it maintained its standing as a leading tourist attraction known for its celebratory light display and rooftop lookout. Some of the high impact refurbishments included rebuilding 6,524 single pane windows, replacing the HVAC system, and installing reflective insulation. These improvements achieved an annual energy reduction of 38% which translated to an energy

cost savings of \$4.4 million per year with a payback period of 3.1 years. The GHG reduction was 105,000 tons over 15 years which is the equivalent of removing 20,000 cars from the road. In recognition of these improvements, the building achieved Leadership in Energy and Environmental Design (LEED) Gold Status in 2011.

It is estimated that 60% of existing buildings will be renovated between now and 2030.<sup>15</sup> With this in mind, energy efficient solutions should be considered when redesigning existing buildings that cities will we rely on for the next 60+ years. Figure 3 (below) indicates potential payback periods for retrofitting buildings in areas of temperature controls, mechanical, HVAC specific, and replacing lighting.<sup>16</sup>

**Figure 3:** Energy efficiency opportunities in retrofitting buildings

<b>Controls</b>	<b>Payback (yrs.)</b>
Controls retrofits and control strategies	3-4
Demand controlled ventilation	2-5
<b>Mechanical</b>	
Variable flow primary/secondary systems with controls, VFDs	2-4
<b>HVAC</b>	
Constant speed air handlers to variable air volume	2-4
VAV boxes, control setpoints, box flow minimums	5+
Boiler conversions from steam to hot water	5-8
High efficiency fully condensing boilers	6-8
High efficiency VFD chiller system	8-12
<b>Lighting</b>	
Install controls to schedule and interior systems	2-4
Convert incandescent to CFL	1-3
Replace exit signs with LED kits	<2
Convert T12 to high efficiency T8s with electronic ballasts	2-5

Note: Paybacks are pre-subsidy and reflect a simple return of capital invested without additional return. Payback periods are estimates and there are no assurances that stated payback periods will be achieved. Source: Deutsche Bank Climate Change Advisors (DBCCA) and the Rockefeller Foundation, "United States Building Energy Efficiency Retrofits: Market Sizing and Financing Models" (March 2012), pg. 8. Available at: <http://www.dbcca.com/research>

### 2.3 The Regulatory Case for Sustainable Buildings

Building owners face increasingly stringent green building requirements. City, state, and national governments are driving the adoption of sustainable development and retrofits. Companies that are proactive about their buildings' sustainability are better placed for these regulations, and face less potential fines and compliance costs going forward.

The cities of Toronto and San Francisco, among others, require all new buildings to have green roofs or solar panels. Eighteen US cities now require



buildings to benchmark and report on their total energy use. Some cities require LEED certification for government and private commercial buildings. In Miami, San Francisco and San Jose, any commercial building over 25,000 square feet must be LEED certified. In Seattle, Philadelphia, or Indianapolis private LEED projects receive incentives such as expedited permits or density bonuses.<sup>17</sup>

Countries in the European Union (EU) are implementing strict regulations on building energy efficiency. The 2010 EU Energy Performance of Buildings Directive requires all new buildings to be nearly zero-energy by the end of 2020. All new public buildings must be nearly zero-energy by 2018. The directive encouraged individual countries to legislate even tougher regulations individually.<sup>18</sup>

England and Wales have taken steps to make all buildings more sustainable. The 2015 Energy Efficiency Regulations set out minimum energy efficiency standards (MEES) that make it unlawful for owners to lease properties that have an energy performance certificate (EPC) rating below E, starting April 1, 2018. EPC ratings go from A to G on a 100-point scale: this means any building scoring less than 39 cannot be rented.<sup>19</sup>

New York City Mayor Bill de Blasio recently proposed a mandate that owners of existing buildings larger than 25,000 square feet invest in more efficient heating and cooling systems, insulation and hot-water heaters. If approved by the City Council, the requirements would apply to about 14,500 private and municipal buildings, which the mayor's office says collectively account for nearly a quarter of New York City's emissions. Most buildings would need to comply with new efficiency targets by 2030, or their owners would face penalties ranging from \$60,000 to \$2 million.<sup>20</sup>

### 3. THE OPPORTUNITIES FOR REITS

#### DEFINITION: REIT

A real estate investment trust (REIT) is a company that owns real estate assets such as buildings and land and generates income from leasing the assets. REITs are legally required to distribute a large portion (at least 90% in the US) of their taxable income to investors. The US contains the largest listed real estate market. The REIT investment vehicle originated in the US in the 1960's as a way for individual investors to access investment in real estate in a more liquid and diversified way than buying properties directly.

Our built environment is one of the most pervasive aspects of human design affecting our daily lives and how we interact with others in our community. Sustainability issues within real estate present a user-design and resource use design challenge. Buildings present a real opportunity for GHG reduction in cradle-to-cradle design for business supply chains, property investments and resource use priorities.<sup>21</sup> Regardless of climate change, pollution of our waterways and the air that we breathe are a detriment to human health and the planet's natural resources. To this end, how can investors in the capital markets build a better tomorrow using the real estate asset class? Publicly-traded REITs may offer a viable solution.

In the US, real estate investment trusts or REITs own a significant share of the building stock. They own offices, warehouses, data centers, shopping centers, student housing, apartment buildings, hotels, healthcare, and self-storage. This position in the market gives REITs an important role in fulfilling sustainability objectives. They can both manage their building assets to become more sustainable, demonstrate to other types of owners what can be achieved, and collaborate with a range of stakeholders to promote technologies and policies that enable them to achieve even more.

In 2015, the gross value of all commercial properties (excluding individual homes) in the US was approximately \$6.6 trillion.<sup>22</sup> In the same year, the gross value of all properties owned by REITs was calculated to be \$700 billion.<sup>23</sup> Based on these figures, it is estimated that REITs control about 10% of the US commercial property market.

There are other types of real estate owners, though the public nature of the REIT investment structure creates an interesting 'look through' opportunity for investors, in addition to property owners and managers, to be accountable. The opportunity for REITs to lead by example is perhaps even more important than their capacity to directly affect the future of our built environment. The publicly-traded REIT allows for investors (shareholders) to potentially influence owners towards integrating more sustainability-focused policies and practices. Many REITs focus on sustainability as a profit driver by 1) reducing costs through energy efficiency upgrades and retrofits and 2) increasing rents and values, through healthier buildings and sustainable certifications.

### 3.1 How Do REITs Contribute to Sustainability?

There are three ways in which REITs can incorporate *triple bottom line (TBL)* approaches into their property portfolio. First, they can be smart about the buildings they acquire and develop. This includes buying or building properties that are eco-efficient (e.g., energy and water smart), that contribute to sustainable urban form (e.g., transit-oriented and ecologically landscaped), and that reinforce strong, healthy neighborhoods (e.g., by engaging neighbors, adding needed services and avoiding involuntary displacements). Second, REITs can consider the TBL when they upgrade or refurbish properties by adding conservation measures, improving handicap access, or using responsible contractors. Third, REITs can be better property managers, such as by encouraging tenants to recycle or conserve water when they irrigate landscapes.

Real estate investment decisions are typically made by companies (not investors) and must be understood in the context of a particular portfolio or fund. For example, an asset (e.g. the building) with a given set of environmental and financial performance characteristics may be acquired by a REIT in a bid to increase the greenness of its overall portfolio rather than exclusively on the merits of the property itself. Similarly, energy efficiency retrofits are frequently rolled out across all assets held by a company in a concerted effort as opposed to a piecemeal building-by-building approach. This type of top-down decision-making shows that REIT companies need executive leadership buy-in to pursue sustainability issues. (For empirical research that support these findings, please see Appendix A).

REITs have a fiduciary responsibility to be socially and environmentally responsible.<sup>24</sup> According to the UNEP Finance Initiative Property Working Group, there is growing evidence that sustainability criteria are material for investors and therefore property owners have a fiduciary duty to understand, consider and report on sustainability issues (*reviewed in Section 3*). Some of the best practices that real estate investment firms pursue include: 1) establishment of executive sustainability committees, 2) engagement by the firm with outside stakeholders, suppliers and tenants, 3) the adoption of standards and performance targets on sustainability issues, 4) investing in property types and improvements consistent with the standards and targets, and 5) corporate reporting on sustainability metrics in public documents.

### 3.2 Special Owner and Tenant Responsibilities

A unique feature of the property sector is that the asset (or building) performance has two inputs: the owner and the tenant. It is the tenant who largely controls the space they have leased. As a result, the sustainability performance of a property is influenced by tenant behavior, such as regulating A/C use, recycling, ride-sharing or bicycle-purchasing programs. This tenant/owner dynamic demonstrates the need for REITs who are leaders in sustainability to empower their tenants towards sustainable behaviors so that the whole asset operates more sustainably. The ideal way to think about sustainability in buildings is to discuss *the whole building* - the common areas controlled by the owners and the leased areas controlled by the tenants.

Sustainability issues pertaining to REITs are determined by the physical characteristics of 1) buildings it owns and 2) corporate policies and practices that guide their operations and management.

The categories of relevant physical property characteristics include construction materials, technical equipment, energy sources, siting and design.<sup>25</sup> These are the characteristics that in turn affect the performance and quality characteristics more directly related to sustainability, such as structural safety, resilience against natural or man-made hazards, transport accessibility, energy efficiency, land use, and life-cycle costs. Such building characteristics, however, are determined by management decisions taken by property owners. Examples of such decisions include choices made when upgrading, refurbishing or retrofitting to improve safety or eco-efficiency. Other relevant decisions concern choices about the operational supply chain, such as whether “responsible contracting” is used when selecting service providers. An example is when janitorial companies are expected to provide their workers with meaningful benefits and a living wage.

Real estate stakeholders can pursue a sustainability agenda more easily with generally agreed upon sustainability principles and metrics as summarized in the following section.

## 4. DEFINING THE METRICS OF SUSTAINABILITY IN REAL ESTATE

There are many issues and considerations contained in the phrases “sustainability agenda” or “sustainability practices.” Integrating ESG criteria into the investment approach is not a one-size-fits-all overlay. Specific issues are more material to certain industries and will have material impact on a company’s bottom line. What issues, factors and criteria are relevant and financially material to real estate?

### 4.1 The Most Pressing Issues and Important Risks

To determine the most important issues and risks in real estate, we start at the beginning. The foundations of sustainability are built in the definition of sustainable development outlined in the 1987 Brundtland Report for the UN World Commission on Environment and Development.<sup>26</sup> Those targets focused on the protection of natural, social and financial assets:

- Protection and restoration of ecosystems and natural resources,
- Protection and improvement of human health and well-being,
- Protection and promotion of social values and public goods, and
- Protection of capital and material goods.

These protections are summarized in the triple bottom line concept for business – people, planet and profit. The general principles to protect natural, social and financial assets are often used as a guidepost by various stakeholders (asset owners, investors, scientists, academics, builders, designers) interested in global risks that would affect the economic value of real estate.

Global risks to natural resources (when they occur) affect our infrastructure, economy and livelihoods. These global macroeconomic risks are summarized in standards produced by the International Organization of Standardization (ISO).<sup>27</sup> Specifically, the standard ISO 21931-1:2010 entitled, “Sustainability in Building Construction: Framework for methods of assessment of the environmental performance of construction works, Part 1: Buildings” provides a general framework for improving the quality and comparability of methods for assessing, measuring and benchmarking the environmental performance of buildings. The standard recommends the following indicators organized into three groups pertaining to *location, the plot of land, and the building itself*, and are as follows in Table 1:

**Table 1:** ISO indicators to identify and compare the environmental performance of buildings.

For location:	For the plot of land:	For the building:
<ul style="list-style-type: none"> <li>access to modes of transportation, green and open areas, and user-relevant basic services (e.g., food or childcare services)</li> </ul>	<ul style="list-style-type: none"> <li>change of land use</li> <li>accessibility of the site</li> </ul>	<ul style="list-style-type: none"> <li>global warming potential</li> <li>ozone depletion potential</li> <li>non-renewable resource consumption</li> <li>freshwater consumption</li> <li>waste generation</li> <li>accessibility of the building (e.g. for handicapped)</li> <li>indoor conditions (thermal, visual and acoustic comfort)</li> <li>indoor air quality</li> <li>adaptability (change of use or user needs; climate change)</li> <li>lifecycle cost</li> <li>maintainability</li> <li>safety (structural safety, fire safety, safety in use)</li> <li>serviceability (fit for purpose)</li> <li>aesthetic quality</li> </ul>

Source: International Organization of Standardization. (2010). *ISO Standard 21931-1:2010, Sustainability in building construction – Framework for methods of assessment of the environmental performance of construction works – Part 1: Buildings*. Available at <https://www.iso.org/standard/45559.html>

These indicators are used in the real estate industry to guide projects on environmental considerations. Similarly, as an investment framework, when evaluating criteria for ESG integration, these indicators could be used to measure the sustainability of REITs' property portfolio. The levels of success will translate not only into impacts on broader social and environmental outcomes; it can also affect a REIT's financial outcomes.<sup>28</sup> Energy performance can affect utility expenses, indoor air quality can affect occupancy rates, and site accessibility can affect rents, all of which will accrue to property cash flow, value and return on investment. For these reasons, sustainability is increasingly understood as having financial materiality along with social and environmental significance.

## 4.2 Defining the Most Relevant and Material Metrics

The previous section outlined the most pressing concerns and important risks at a macro level. This section drills deeper into those issues to identify metrics that can be used to make meaningful distinctions between more and less sustainable properties and property portfolios. Unfortunately, this is not a straightforward process. What is most important varies from one stakeholder to the next. What is financially most material can vary greatly between real estate sectors such as residential and commercial. And some issues are not easily measured, or may not be reported widely.

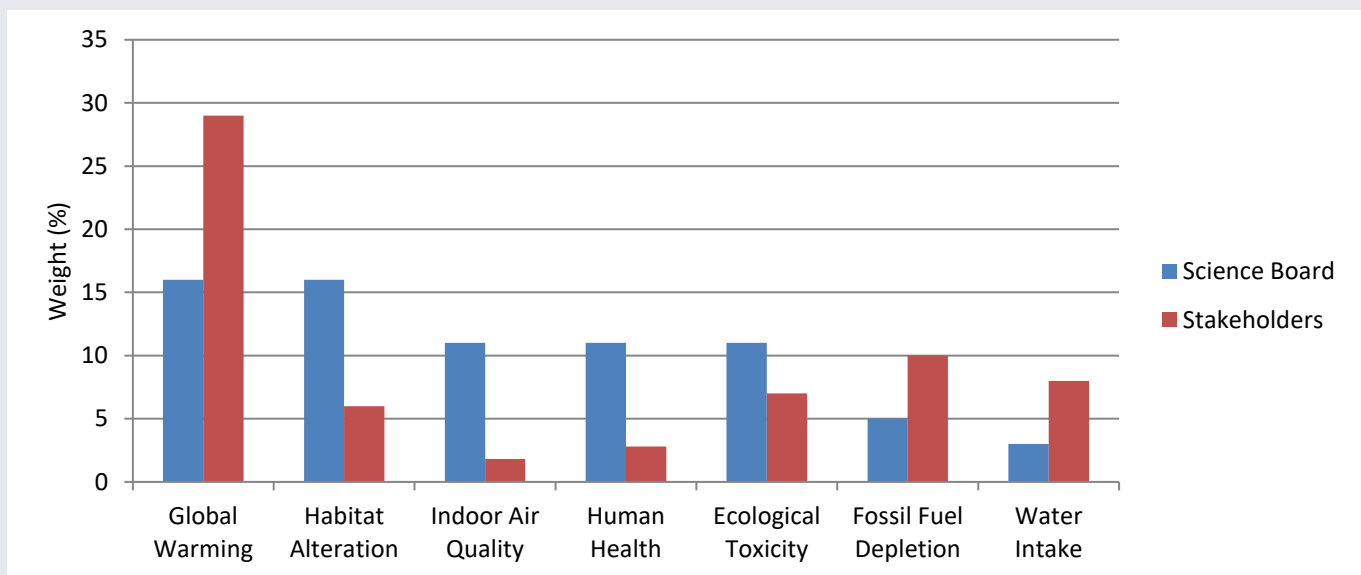
Fortunately, a wide range of groups working within real estate, science, technology and finance have been monitoring and analyzing the buildings sector for environmental and economic impacts. They have published which metrics are most important, and which are best for consideration and comparison. Two perspectives are particularly relevant for real estate investment: expert & stakeholder panels, and sustainable buildings & real estate rating systems.

### **Expert and Stakeholder Panels**

Polling experts and convening stakeholders is a common way to identify relevant sustainability metrics.

In 2006 The National Institute of Standards and Technology sponsored Barbara Lippiatt's research, *Building for Environmental and Economic Sustainability*, also known as the BEES project.<sup>29</sup> Lippiatt used data from the US Environmental Protection Agency Science Advisory Board and a stakeholder panel representing green building designers, building product producers, and life-cycle analysis experts. The BEES project identified and ranked priorities from these stakeholders, shown in Figure 4, below:

**Figure 4:** Relative Importance Weights of Environmental Impacts



Source: Lippiatt, B. (2007). *BEES 4.0: Building for Environmental and Economic Sustainability, Technical Manual and User Guide*. National Institute of Standards and Technology. U.S. Department of Commerce. Retrieved from <https://www.nist.gov/publications>

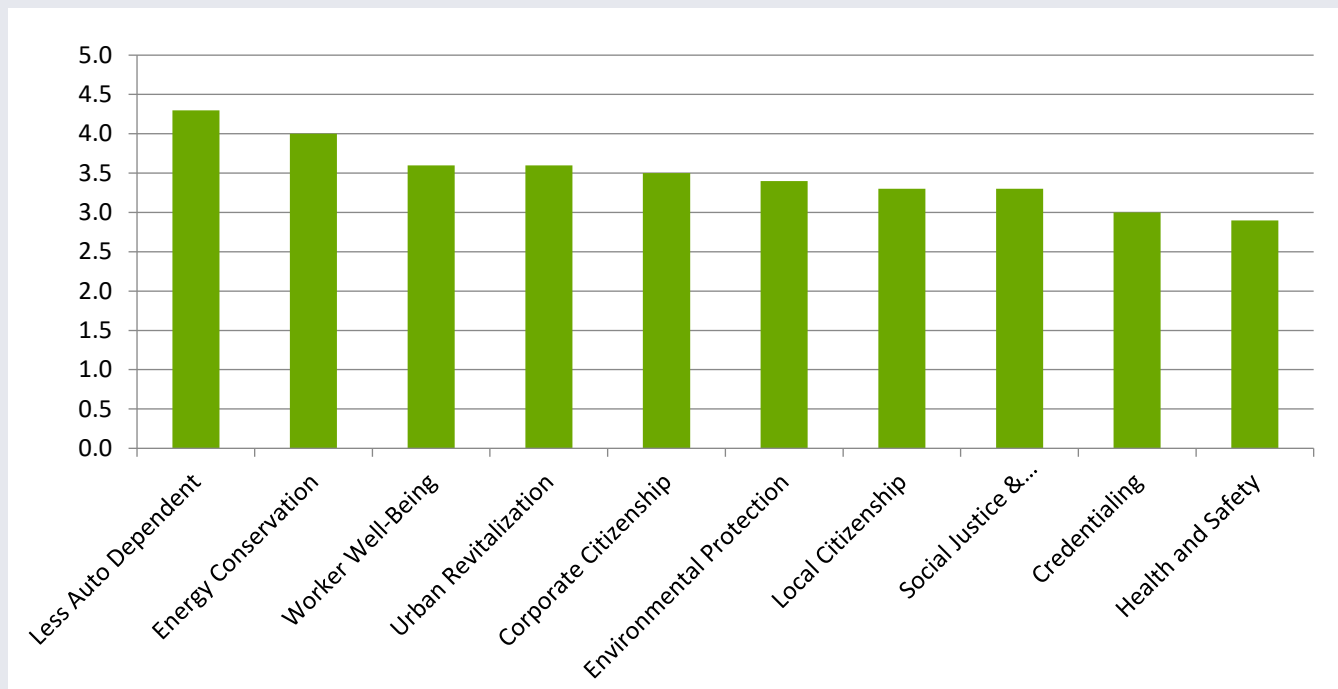
Another panel was convened by the UNEP FI Property Working Group for their report on “responsible property investing” (RPI). This differs from the BEES work by including social, economic and environmental issues and by being

produced by and for real estate investors. While they did not specify relative importance, they did list their “10 elements” of RPI as follows:

- Energy Conservation
- Environmental Protection
- Green Buildings
- Public Transport Oriented Development
- Urban Revitalization
- Health and Safety
- Worker Well-Being
- Corporate Citizenship
- Social Equity and Community Development
- Local Citizenship

Complementary to these studies, Professor Gary Pivo (a member of the Vert Investment Research Group) published the results of an international panel study prioritizing criteria to evaluate property investments in terms of their social, economic and environmental responsibility.<sup>30</sup> Figure 5 shows the relative importance of each issue from most (5) to least (0):

**Figure 5: Relative Importance of Dimensions in Responsible Property Investing**



Source: Pivo, G., and Fisher, J. D. (2010). Income, value, and returns in socially responsible office properties. *Journal of Real Estate Research*, 32(3), 243-270.

The last example comes from the Institutional Investor Group on Climate Change (IIGCC). The IIGCC is a forum for collaboration on climate change for



European investors seeking to catalyze investments in a low carbon economy. Their goal was to identify simple, meaningful metrics that are cheap and practical to gather and which indicate the degree to which a property portfolio is contributing to and exposed to climate risk. Again, without prioritizing, they recommended seven metrics:

- Energy Use and Efficiency
- Water Use and Efficiency
- Waste Production and Recycling
- Accessibility by Public Transport and Bicycle
- Flood or Coastal Erosion Risk
- Land Consumption
- Tenant Engagement

### ***Sustainable Building and Real Estate Rating Systems.***

We finally turn to the practitioners owning and operating the buildings. They work with the most practical metrics, because these are what are measured and reported on a daily basis.

The Global Reporting Initiative (GRI) is the world's most widely used standard for corporate sustainability reporting across industries. The *GRI Construction & Real Estate Sector Supplement* (GRI CRESS) was designed to help REITs and other companies in the sector identify, measure and report on issues pertinent to their business activities. The standards were developed by a multi-stakeholder, geographically diverse Working Group, formed by volunteers from construction and real estate companies, investors, labor, non-governmental organizations and research organizations.<sup>31</sup> The GRI CRESS identifies the following six "core indicators" most applicable to real estate businesses:

- 1) Energy
- 2) Water
- 3) GHG Emissions
- 4) Land Remediation
- 5) Displaced Persons
- 6) Green Buildings.<sup>32</sup>

The Global Real Estate Sustainability Benchmark (GRESB) is quickly becoming the go-to reference for real estate companies and investors worldwide. Companies are scored on several dimensions using dozens of metrics and scales. The percentage that can be earned in each item line indicates its relative materiality in the benchmark (maximum total 100%), shown in Table 2 below:

**Table 2:** Measurements that contribute towards earning a GRESB score

Item to be Scored	Potential Percentage
Performance Indicators (e.g. energy data) <i>- 16% energy related items</i>	25%
Stakeholder Engagement (e.g. tenants)	25%
Risks and Opportunities (e.g. retrofits) <i>- 3% energy related items</i>	12%
Building Certification (e.g. Energy Star) <i>- 4% energy related items</i>	11%
Management (e.g. employee incentives)	9%
Policy and Disclosure (e.g. GRI)	9%
Monitoring and EMS (e.g. data mgt.) <i>- 2% energy related items</i>	9%
<b><i>Sum of all energy related items</i></b> <i>(italicized in line items above)</i>	<b>26%*</b>

For illustrative purposes only.

Source: Global Real Estate Sustainability Benchmark (GRESB). Available at: <https://gresb.com>.

The Leadership in Energy and Environmental Design or LEED program managed by the US Green Building Council is the most widely used green building certification in the world. An examination of its current criteria (LEEDv4) reveals its category weights in Table 3 below:

**Table 3:** Measurements and weights to earn a LEED certification

LEED 4 CATEGORY	WEIGHTS
Energy and Atmosphere	38%
Indoor Environmental Quality	17%
Location and Transport	15%
Water	12%
Sustainable Sites (e.g. habitat conservation)	10%
Materials (e.g. sustainable wood products)	8%

For illustrative purposes only.

Source: Leadership in Energy and Environmental Design (LEED) Available at: <https://new.usgbc.org/leed-v4>

In summary, the real estate sector is being closely evaluated from several angles to define and prioritize sustainability issues. There is a broad consensus among the experts that sustainable companies are those that: find ways to reduce energy and water consumption, site buildings to take advantage of public transport and local services, and foster the health and well-being of tenants, employees and the wider community. (For empirical research that support these findings, please see Appendix A).

**DEFINITION:** E, S, G criteria and the economy

Social, environment, and economic issues are endemic to real estate. The built environment has a huge impact on people and planet. The end objective of sustainable investing, or more specifically evaluating E, S, and G criteria, is to push capitalism towards a more sustainable operating model. 20<sup>th</sup> century capitalism was defined by an extractive model that failed to account for resource depletion and waste. Growth has been coupled to a rise in pollution, most notably greenhouse gases. 21<sup>st</sup> century capitalism aims to ‘decouple’ this link between economic growth and pollution. In the case of real estate, decoupling refers to maximizing the productivity of land and buildings while reducing the consumption of resources and the production of waste and pollution. Considering ESG criteria in real estate investing accelerates the transition to a low carbon economy.

## 5. A STRATEGY FOR INVESTING IN SUSTAINABLE REITS

### 5.1 Security Selection

To invest for sustainability in REITs, an investor must choose the most suitable companies from among a universe of possibilities. This involves at least three important decisions.

The first decision is what universe to consider. This can raise both financial and sustainability considerations. For example, in 2014 the top carbon dioxide (CO<sub>2</sub>) emitters were China, the United States, the European Union, India, the Russian Federation, and Japan.<sup>33</sup> So, an investor might wish to focus on sustainable REITs that own properties in those countries, to promote CO<sub>2</sub> reduction in the highest-emitting nations. On the other hand, investors may have financial reasons for focusing investments on certain geographies or types of REITs (e.g., office or healthcare). However, insofar as sustainability is a multi-issue, long-term, global concern, we choose to begin with a global approach, seeking out the most sustainable REITs of all types, all over the world. In the future, it would be good to create sustainable REIT strategies that also focus on selected regions or types of REITs, but here our strategy is global.

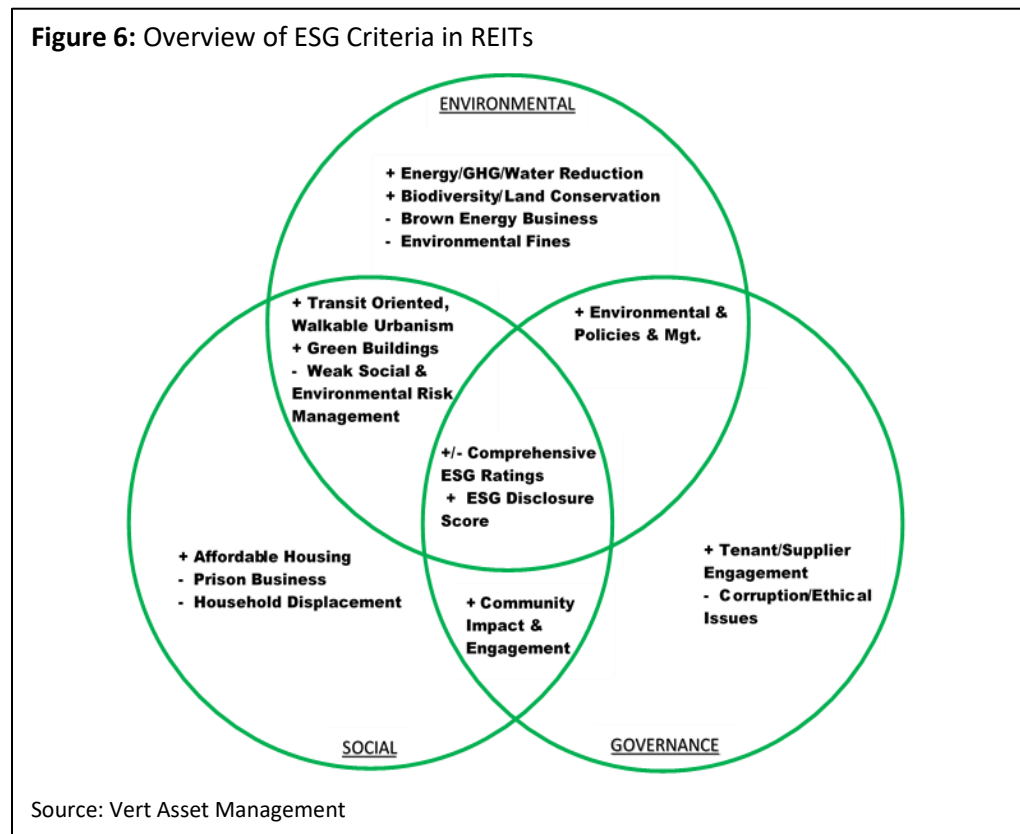
A second decision involves choosing the selection criteria. We have studied and summarized prior efforts to identify the most important sustainability issues in the property sector, but there is no global standard and different investors have different priorities. This suggests to us that it would be useful to begin with a fund that includes REITs that are sustainable in a comprehensive way across the triple bottom line as well as those that excel in more focused, critical areas, such as energy use reduction.

Third, the data selected to rate sustainability must be selected. It must be valid, current and reliable. Information available from REITs and third-party vendors is growing rapidly, but it is often neither comprehensive or transparent. A valid assessment of a REIT’s sustainability performance requires that information is blended together from a variety of sources, keeping in mind the definitions and differences among the various metrics.

After considering these issues, and discussing them with other stakeholders, we have developed a sustainable REIT investment strategy based upon the following logic:

We begin with a global list of more than 400 publicly traded REITs. We then use positive and negative selection screens to identify those that qualify to be included on a list of the world's most sustainable.

Our process is summarized in the following Venn diagram (Figure 6), grouped under the environmental, social, and governance dimensions of sustainability. Each screen is shown as addressing one, two, or all three dimensions, depending on its location relative to the overlapping areas. Our selection screens include both comprehensive and focused indicators based on our research on the most important sustainability issues in the property sector, best practices in sustainable REIT management, and the best available sources of information available for evaluating a company's portfolio, policies, and management practices.



Each indicator is preceded with a plus (+) or minus (-) sign, showing whether it is a positive or negative indicator. Positive indicators were used to include companies, while negative indicators were used to exclude companies from further consideration.

The metric at the very center of the diagram and the intersection of all three ESG dimensions, is Comprehensive ESG Ratings. We used such ratings to qualify companies for a list of sustainable REITs based on what we refer to as

“Comprehensive Excellence.” ESG ratings are available from several third-party vendors who use both company surveys and primary data collection to score REITs on each of the three ESG dimensions and to produce single comprehensive scores. ESG ratings are composite indicators based on data collected on dozens of separate items, which are then weighted and combined according to each agency’s assessment of their relative importance. No rating agency covers all the REITs and each uses a somewhat different methodology. Therefore, to strengthen the validity, wholeness, and reach of our analysis we combined ratings produced by several separate agencies. We then identified those companies in the top quartile for each ESG dimension and the aggregate scores. This yielded a group of about 20 companies that were placed on our initial list of sustainable REITs, qualified based upon their Comprehensive Excellence. These companies are leading the way on sustainability in real estate.

Not all REITs are covered by the ESG raters. Within this under researched group are companies that are world leaders on certain critical sustainability issues or practices. They are contributing to real progress on important issues and deserve inclusion on a list of sustainable REITs. About 80 firms thus qualify on the basis of “Focused Excellence.” To qualify under Focused Excellence, a company had to demonstrate the highest levels of performance by being among the top 10 percent of all companies on certain metrics, receiving national or global recognition in certain competitive award or ratings programs, or reducing their energy or greenhouse gas intensity by an average of 2.6% per year over the past two or more years. According to the International Energy Agency, an annual energy intensity reduction of 2.6% is needed to achieve global climate goals.<sup>34</sup> The ten issues covered under Focused Excellence are as follows (alphabetically):

1. Affordable Housing
2. Biodiversity & Land Conservation
3. Community Impact and Engagement
4. Energy/GHG Reduction  $\geq$  2.6% (Average Multiyear)
5. Environmental/Energy Policies & Management
6. ESG Disclosure Practices
7. Green Buildings
8. Tenant & Supplier Engagement
9. Transit Oriented & Walkable Urbanism
10. Water Reduction

The data for these screens comes from many different sources including our own review of company publications, awards received, selected items from

the rating company datasets, and unique datasets produced for Vert by specialized vendors.

Finally, the list of companies that qualified under Comprehensive or Focused Excellence were put through negative screens, which disqualified firms for violating certain minimum standards. The screens were as follows:

1. Brown Energy or Prison Business
2. Corruption & Ethical Issues; Household Displacement
3. Environmental Fines
4. Low Comprehensive ESG Ratings (e.g., <50 on a 100-point scale)
5. Weak on Social and Environmental Risk Management

The result is a list of companies committed to sustainability as a driver of value in their business. Investors in these companies can rest assured they are putting their money in the leaders and innovators in real estate.

Real Estate is certainly a dynamic field undergoing continuous improvement, but we are pleased that the REIT industry has reached the point with sustainability metrics and reporting where investors can identify the world's most sustainable REITs using a rational, reliable, and empirically grounded selection strategy. We expect to build upon this strategy in years to come as new data are made available and more research is published that help us prioritize the most important issues and best practices.

## 5.2 Portfolio Construction

Once the securities have been selected, we construct portfolios in such a way as to maintain diversification, minimize costs, and manage tracking error to the benchmark.

Sustainable investment strategies must balance a trade-off between sustainability and diversification. The most diversified strategy would hold all stocks in the universe; the most sustainable strategy might hold only a few ESG leaders. Our approach is to hold only those companies that have a demonstrated commitment to sustainability. Fortunately, in our selection process we are able to identify close to 100 stocks that meet this test. These sustainable REITs make up almost 25% of the total number of REITs in our universe by name. These same REITs capture almost 50% of the REIT universe by market weight. By holding close to 100 names, the strategy maintains adequate diversification.

The selected securities are best held in roughly market cap weights. The primary benefit of this weighting strategy is that it reduces trading costs. When a stock is held at a market cap weight, it is not necessary to buy or sell the stock to maintain that relative weight whenever the stock price changes. Another benefit to market cap weighting is that it helps keep the portfolio more aligned to the benchmark in terms of country and sector weights.

The strategy does not specify targets for country or sector weights, rather lets them adjust with the market. We monitor these weights and may take steps to adjust sectors or countries if they become too far out of line with the benchmark. To maintain diversification, in certain circumstances, we stop purchasing an individual company if it's weight in the portfolio gets above 5%.

On an ongoing basis, portfolio holdings will be monitored for any controversies or for possible changes in their status as qualified companies. If any security is disqualified on this basis, it will be sold from the portfolio as soon as practical. On at least an annual basis, normally in the fourth quarter, the Investment Research Group re-evaluates all portfolio holdings, as well as all other REITs in the universe, for qualification and disqualification. New qualifiers will be added to portfolio by the end of the year, and any disqualifiers will be removed on a tax-efficient basis. It is not expected that this re-evaluation and re-balancing of the portfolio will incur significant turnover.

## CONCLUSION

As ESG investing enters the mainstream, sophisticated investors are expanding their usage of ESG criteria across asset classes. Real Estate is a key asset class for sustainability. It plays an outsized role in our lives; as such it is a major part of the sustainability challenge, and a major opportunity.

Buildings are large consumers of energy and water, and yet they don't need to be. By implementing new, more efficient technologies, buildings can reduce not only their footprint, but their utility bills and maintenance costs. Many of these technologies improve the building's performance on the human scale as well. Buildings with better temperature control, lighting, air, etc. have happier tenants so they can charge higher rents. Many research studies confirm that greener buildings do perform better financially.

REITs are well placed to take advantage of these opportunities in buildings. Most REITs own multiple buildings of similar types so they can scale technologies and processes across a wider cost base. By applying a Triple



Bottom Line approach, they can more accurately identify what works and how profitable it will be. REITs that engage with their tenants, communities, and employees improve their rates of success.

Sustainability means different things in different industries. The experts in the real estate sector show a broad consensus on the big concerns like energy, stakeholder engagement, disclosure, bribery and corruption, etc. We determine which REITs are operating with intention sustainability by careful selection of relevant and material metrics that reflect those concerns but that also have robust and available data. Our stringent security selection criteria result in a portfolio of REITs that have all made strong commitments to sustainability. This strategy gives investors seeking a sustainable investment strategy a solution for the real estate asset class in their portfolio.

## APPENDIX A: EMPIRICAL RESEARCH

### Academic studies on the intersection of REITs and sustainability

Author	Paper	Objective	Findings
Eichholtz, P. Kok, N. Yonder, E.	Portfolio Greenness and the Financial Performance of REITs (2012) in the Journal of International Money and Finance	Examines the operating performance of US REITs in relation to the share of green-certified properties in their portfolios (both in terms of buildings and total certified space) and find a positive relationship between portfolio greenness and return on assets, return on equity and funds from operations of the REIT.	Finds REITs with a higher share of green properties exhibit lower market betas (14 basis point reduction for each percentage increase in the LEED share of the portfolio) no abnormal stock returns or alphas were found, which may indicate that the sustainability information and better operational performance is either already priced in or remains ignored by investors.
Sah, V. Miller, N. Ghosh, B.	Are Green REITs Valued More? (2013) in the Journal of Real Estate Portfolio Management	Analyzes the value of strategic initiatives aimed at increasing ownership of greener buildings. REITs and their management initiatives are used as a proxy.	Results show green REITs have a higher return on assets than their less-green peers. The results find a positive impact on the firm value when measured by Tobin's Q (the ratio of the market value of a company's assets (as measured by the market value of its outstanding stock and debt) divided by the replacement cost of the company's assets (book value)
McGrath, K.	Does Increased Investment in Responsible Properties Lead to Better Corporate Performance? (2014) in The Munich Personal RePEc Archive	Examines the impact of eco-certified properties has on the corporate performance of REITs.	Finds ownership of LEED certified properties had a positive impact on firm's funds from operation and return on average assets.
Hin Ho, K. Satyanarain, R. Han Lum, Y.	Green Buildings and Real Estate Investment Trust's (REIT) Performance (2013) in Journal of Property Investment & Finance	Examines whether or not the effects of 'green developments' on REITs performance is consistent across different property types specifically: office, retail and residential.	Overall, green buildings do improve the operational and financial performance of REITs. Different measurements for 'greenness' have different results.
Fuerst, F.	The Financial Rewards of Sustainability: A Global Performance Study of Real Estate Investment Trust (2015)	Analyzes the impact of sustainability initiatives measured by Global Real Estate Sustainable Benchmark (GRESB) on REITs operational performance.	Finds that REIT owners must invest in sustainability measures to remain competitive. It enhances operational performance and lowers risk exposure and volatility.
Eichholtz, P. Holtermans, R. Kok, N. Yonder, E.	Environmental Performance and The Cost of Capital: Evidence From Commercial Mortgages And REIT Bonds (2017)	Investigates the cost of capital relationship for US REITs in relation to the share of eco-certified buildings. More specifically, they analyze the spreads on commercial mortgages collateralized by real assets as well as spreads on corporate debt.	Results show that having a high fraction of eco-certified assets lowers spreads on corporate debt by around 35 basis points, all else equal. Similarly, greener REITs can issue bonds at lower spreads. Concludes that environmental performance of collateral assets is priced into financial products.

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<sup>26</sup> The definition of sustainable development provided in the 1987 Brundtland Commission report "Our Common Future" delivered to the World Commission on Environment and Development is widely credited for creating public awareness and tying pursuit of sustainability to human and economic development. The report stated, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: (1) the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and (2) the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

<sup>27</sup> ISO is a member-based organization that develops standards for industries through consensus and input from multi-stakeholder groups including industry, consumer associations, academia, NGOs and governments. More information is available at: <https://www.iso.org/developing-standards.html>

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