The world is changing. Population growth, urbanization, climate change, technological disruption, digitalization and pervasive connectivity present new challenges and opportunities for the global real asset industry.

Property and infrastructure companies find themselves on the frontlines of these changes. They are drivers of change. They shape the physical fabric of cities and communities, contribute to the use of natural resources and to global greenhouse gas emissions, and influence the determinants of human health and well-being. They are also particularly vulnerable to change. Their long-term, immobile, and often illiquid investments are subject to a myriad of physical and social shocks and stressors. Institutional investors increasingly recognize the materiality of these risks and opportunities. As a result, real asset managers are expected to be more transparent about how they manage and mitigate risks, and more accountable about their efforts to seize opportunities.

This report illustrates the beginning of a global effort to make the built environment stronger, safer, and more resilient. More resilient places are better for people, protective of the environment, and, ultimately, superior long-term investments. GRESB’s new resilience-focused data from property and infrastructure companies and funds around the world describes a dynamic, forward-leaning industry. It shows that leading companies and funds are taking action on the Task Force on Climate-related Financial Disclosures recommendations for governance, risk management, business strategy, and performance measurement. It also indicates significant areas for improvement, particularly with respect to the use of forward-looking scenarios and the collection of relevant, comparable performance metrics.

We are looking forward to progress on these issues in the year ahead, and we believe that this important report will inform our work as we strive to create sustainable real assets and strong, resilient, and prosperous communities around the world.
EXECUTIVE SUMMARY

Global weather-related disasters cost a record US$344 billion in 2017, including US$212 billion in uninsured losses. At the same time, the global economy emitted a record total of 9.8 gigatons of greenhouse gas emissions, and the atmospheric concentration of carbon dioxide reached 405 parts per million, higher than at any time over the last 800,000 years. These new high-water marks put people and properties at risk. Real asset investors are particularly exposed to these issues, as the value of their long-term, often illiquid physical assets is intrinsically linked to energy systems, transportation infrastructure, and social and environmental circumstances.

High-profile environmental and social shocks have helped raise awareness among institutional investors, and new tools have given companies guidance on how to assess and communicate the associated risks. Most notably, in 2017, the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) provided recommendations for reporting on climate risk and resilience. This included an emphasis on disclosure of information about climate governance, risk management, business strategy, and performance metrics.

These events, combined with increased investor awareness about the materiality of climate risk and resilience, motivated GRESB, the leading environmental, social, and governance (ESG) benchmark for real assets, to add a Resilience Module to its long-standing Real Estate and Infrastructure Assessments. The new Resilience Module was broadly aligned with TCFD recommendations, and it included eight new resilience-related indicators.

In its first year, more than 125 real estate and infrastructure organizations elected to report on these indicators, providing a snapshot of practices in North America, Europe, Asia, and Oceania. These participants include 113 real estate companies and funds and 37 infrastructure assets. These entities represent approximately 13% of all 2018 GRESB Real Estate and Infrastructure respondents. The participating entities are self-selected, and they may have more interest and expertise in resilience than other organizations. Their size, location, and composition are roughly comparable to the overall GRESB universe.

Information reported by participating companies provides the first global snapshot of resilience-related governance, risk management, business strategy, and performance measurement by the real asset sector (Figure 2).
The governance of resilience starts with leadership, and 90% of Module participants reported having a specific senior employee with responsibility for the issue. This individual often has responsibility to organize and lead a cross-departmental team or working group. Most participating organizations report conducting climate-related risk assessments, most often focusing on physical risks to asset value and business continuity. More than 80% of respondents report assessing physical risks, while only 50% report systematic evaluation of social risks.

Transition risk is an important aspect of TCFD reporting. However, transition risks are dependent on a range of factors and circumstances. While it is difficult to analyze these risks at the level of companies and funds, it is possible to evaluate the overall market activity. Collectively, GRESB participants continue to expand data coverage, improve efficiency, and reduce emissions on a year-over-year basis (Figure 1a). This is one indication of action to reduce transition risk through the adoption of efficient, low-carbon technologies. In 2018, the GRESB universe reduced its average energy intensity by more than 4%, and it has sustained a comparable level of year-over-year performance for more than five years. These targets and rates of improvement are broadly consistent with UN Sustainable Development Goal 7.3 (Figure 1b).

A large fraction of participants report addressing climate-related risks in their business strategies and operations. Examples of tangible actions include installation of flood barriers, elevation of building systems, and steps to enhance and harden sites against environmental or social disruption. Action on TCFD recommendations for scenario analysis remains limited in the property and infrastructure sectors; however, anecdotal evidence indicates that this type of analysis is underway and is likely to be more prominent in 2019 GRESB reporting.
Responses to individual indicators in the new Resilience Module are important, and they provide a useful snapshot of common market practices. However, effective management requires coordination of all of these elements simultaneously. Analysis of responses across indicators shows significant differences between respondents.

For real estate companies and funds, the top quartile of respondents -- organizations with the most comprehensive responses -- reported on an average of 81% of resilience elements. The bottom quartile of respondents -- organizations with the least comprehensive responses -- reported on an average of 22% of elements with high variance among responses (Figure 2a).

The distribution of responses is more even for the smaller set of infrastructure organizations. The top quartile of respondents reported on an average of 75% of resilience elements. The bottom quartile of respondents reported on an average of 15% of resilience elements.

This suggests that resilience-related practices are widespread across this sample of real asset investments. However, it also illustrates that there is significant variation between organizations, even in this self-selected group of GRESB participants.

Results show that real estate and infrastructure companies and funds around the world are beginning to pay attention to resilience. Most Resilience Module respondents have:

- Established clear internal leadership;
- Conducted social and environmental risk assessments;
- Begun implementing strategies during development, operations, and acquisition; and
- Started collecting data about shocks, stressors, impacts, and near-miss events.

The quality and impact of these actions is difficult to evaluate. Organizations report that these practices exist, and many provided GRESB with clear supporting evidence. However, it is not yet possible to evaluate if these practices work as intended. This situation will change as disclosure about resilience-related management and practice is combined with outcome measures, such as insurance claims, changes in asset value, and variance in operating income.

Efforts to reduce or mitigate climate risk and enhance resilience are not surprising given rising interest from institutional investors around the world. Moving forward, market participants can expect even greater focus on climate risk and resilience from investors, governments, customers and other stakeholders. Some real asset organizations are already turning this interest into competitive advantage by offering risk management and resilience as essential features during competitive bidding processes or as differentiating amenities. For example, companies may promote features such as backup power or flood-resistant designs. Many other companies are conducting comprehensive risk assessments and applying this information to inform plans for capital investment and operations.
The results also show that resilience-related practices vary significantly among real estate and infrastructure companies and funds. Today, this means that investors will need to ask more questions about how their investments are identifying potential risks and integrating these considerations into business strategies. Over time, the focus of this engagement is likely to shift from qualitative statements toward more objective and quantitative measurements, including scenario analysis.

Over the next several years, this is likely to include greater applications of geospatial risk models and the use of third-party certifications and ratings. The GRESB Resilience Module and core assessments will evolve to drive and support these important steps to enhance and protect shareholder value.

**RECOMMENDATIONS**

**Real Asset Investors**

Results from the GRESB Assessments and Resilience Module provide the basis for practical guidance for institutional real asset investors:

1. Resilience-related management practices vary significantly between reporting companies and funds. Publicly available information about the climate risk and resilience-related practices and performance of individual organizations is limited and inconsistent. Consequently, investors should ask specific questions regarding climate risk and resilience during their engagement process.

2. Some companies and funds have already developed comprehensive climate-risk and resilience programs. For these organizations, engaged investors should ask about the quality of management actions and request information about realized outcomes (e.g., losses, business disruptive, near-miss events, etc.).

3. Some companies and funds have not yet developed programs. For these organizations, engaged investors should begin by asking about the presence or state of development of fundamental management systems, including leadership, risk management, business strategy, and performance measurement.

The highest performing companies and funds in regard to climate risk and resilience combine experienced and empowered leadership, high quality risk assessment, integrated business strategy, and relevant, timely performance measurement. Investors can and should expect organizations with these qualities to be able to readily communicate their work in each area and connections across areas of work. Based on results from the Resilience Module, it is plausible that such high-performing organizations represent a small fraction of the industry. The balance of the industry is likely to be characterized by less comprehensive, more fragmented activity.

These circumstances create a situation where fiduciary responsibility is likely to compel engaged, responsible investors to ask more questions about the management of resilience. These questions should begin with fundamental issues of management structure and process. Over time, questions should focus on measurable outcomes with respect to risk and vulnerability, risk reduction and business performance.

*Concerns about real asset resilience are increasingly driving capital allocation decisions made by institutional investors. That’s why there is a fast-growing demand for reliable, standardized resilience data on which to assess and compare investments.*

Sander Paul Van Tongeren  
Co-founder and Managing Director, GRESB
Real Asset Companies and Funds

Results from the GRESB Assessments and Resilience Module also provide insights for real asset companies and funds:

1. Most companies and funds have designated a qualified and empowered internal leader with responsibility for climate-risk and resilience. This individual may or may not be part of the sustainability and ESG team.

2. Most companies and funds have conducted risk assessments to evaluate physical climate- and resilience-related threats to asset value and business continuity. The assessment of non-physical risks, such as social change, is much less common.

3. Most companies and funds have begun to address climate- and resilience-related risks through specific business strategies. The nature of these strategies varies widely between organizations.

4. Most companies and funds are reporting energy consumption and greenhouse gas emissions as one dimension of climate-related transition risk. However, most entities are not yet capable of systematically reporting measures of social or physical climate risk. Only a fraction of companies can report on climate- or resilience-related disruptive events or near misses. This type of information will ultimately be critical in evaluating the efficacy of management strategies.

5. Real asset companies and funds can expect increasing interest in these issues from institutional investors, rising expectations and stricter regulations for transparency aligned with the TCFD recommendations, and greater concern for the quality and effectiveness of management strategies.

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2 Aon Benfield (2017) Weather, Climate & Catastrophe Insight

3 U.S. National Oceanic and Atmospheric Administration [2107].


5 This definition is based on the concept popularized by the Rockefeller Foundation’s 100 Resilient Cities program. 100 Resilient Cities defines resilience as the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience.