



Defending Against Stranding Risk

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This paper sets out to provide some basic principles on how to manage potential risks to the economic stranding of real estate assets.

There have been increasing levels of discussion about the risks to real estate assets suffering a form of stranding. This is partly due to the concept of “carbon stranding” set out by the Carbon Risk in Real Estate Monitor (CRREM). However, alongside this, there are other forms of asset obsolescence which have a significant effect on asset values. Together, these different risks to asset value have combined to present questions about asset stranding.

This paper will explore the different risks and how fund managers can protect against them.

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1. Types of Asset Obsolescence and Stranding

In 2024, there are two dominant forms of asset obsolescence that are increasing risks to value.

Social Obsolescence

The social obsolescence is typically found in offices, particularly in areas where occupants are not fully utilising space post-pandemic. With a post-pandemic contraction in the need for office space, which appears to be structural, there is a notable surplus of office stock beyond demand from occupiers. This has led to the often-discussed bifurcation of the office market and flight to quality, resulting in offices that are not well positioned for occupier experience at risk of losing income.

Environmental Obsolescence

Environmental obsolescence is typically related more directly to capital expenditure (capex) upgrade costs associated with Energy Performance Certificates (EPCs), and potentially removing fossil fuel-based heating. EPCs are the primary driver of capex requirements due to the combined requirements of investors, occupiers and exposure to regulations.

This capex can vary significantly based on the building fabric, plant and systems creating a complex assessment of risk for investors. Furthermore, engineers may deploy different strategies in the upgrades which would result in a potentially wide variation of potential capex. Add to this the continuing evolution of what the market considers an appropriate level of specification to manage environmental risks, investors are seeing a significant amount of risk.

These risks are most evident in assets with sophisticated plant and systems, which again is most keenly felt in office sector. Other asset classes, such as built-to-rent residential or hotels also see these levels of sophistication, but elevated market demand is suppressing these risks in values at the moment. These risks are present but potentially obscured.

CRREM Carbon Stranding

As noted above, a form of asset stranding comes from the Carbon Risk in Real Estate Monitor (CRREM), which presents a potential 'carbon stranding'. The CRREM approach to asset stranding is focused on how greenhouse gas emissions of an asset align with the Paris Agreement on Climate Change and projects a strong influence of greenhouse gas emissions on asset values. However, in practice the real world greenhouse gas emissions are often not aligned with the physical quality and features of the asset. This is because buildings are typically not optimised for their energy usage and reduced greenhouse gas emissions for the following reasons:

- Occupiers have a range of requirements for the building which may extend the energy used on site, outside of the intended design.
- Asset owners have limited influence over occupier fit outs which often do not optimise the energy usage of the asset.
- The building has energy efficiency features that are not managed correctly.
- Practices in building management may not focus on energy optimisation as a result of other competing requirements.

This performance gap between design and actual building performance is a common occurrence in real estate, where buildings are often used in ways that were not anticipated in their original design specifications. This leads to actual energy consumption and carbon emissions that can vary significantly from theoretical calculations. However, asset values typically reflect the building's theoretical potential rather than its current performance, since this performance can be improved through different tenant configurations or enhanced building management practices - factors that are separate from the intrinsic value of the asset itself.

2. Strategies to defend against asset stranding

We propose a number of strategies to defend against asset stranding but highlight that specific risks of economic stranding should be understood within the context of the specific asset and asset type within the local market in which it resides. Asset owners should work with their valuers and other professional teams to assess the specific cases where these risks may be present for a clearer picture.

Strategic Capex

The primary way to defend against asset stranding is to anticipate the interventions that will be required to upgrade the asset to reduce risks of obsolescence, and to plan capital expenditure and as much of the related works while the asset is generating income. Such capex should be directed towards removing the plant and heating, ventilation and air conditioning (HVAC) systems, which require fossil fuels, at the most appropriate time within their economic life. In some cases, income, regulations, leases, and the asset's investment strategy may require the plant and systems to be replaced before the end of its economic life.

Capex should be directed at upgrading plant and building fabric that removes fossil fuels from heating and improves energy efficiency, as can be evidenced on an EPC. Other requirements may be dictated by the expectations for the asset class to market positively to occupiers in that area. In some cases, upgrades to neutralise the worst aspects of asset obsolescence will be sufficient to support the finding of a new tenant and establishing a regular income stream before further upgrades are then completed.

A realistic plan for upgrades may be enough to attract occupiers, finance or a buyer if the asset is almost in line with market expectations. Leasing agents should be in agreement with this approach and supportive in positioning it with potential tenants. Green features such as sustainability certifications may not be required if expected works clearly achieve practical improvements to the building. Or these may be planned for a later date alongside tenant occupation.

Change of use

Where social obsolescence is a notable driver, for example when there is a saturation of offices in the area, change of use may be considered to defend against asset obsolescence.

Social obsolescence exists when an asset is sufficiently surplus to the market that pricing is suppressed as there is too much supply for the present demand. In this case, investors may review change of use options to consider more effective forms of income. Such analysis could be undertaken with a valuer with local market experience who can advise how to maximise income.

From an environmental and climate perspective, the change of use should include aims to retain as much of the existing structure as possible, minimising additional embodied carbon in the refurbishment.

Enhancing social features

This strategy requires further exploration and consideration, but efforts to reduce social obsolescence can work in tandem with environmental improvements to support the path to repositioning an asset. Since the pandemic, offices have added more wellbeing features to support the return to work, which can attract occupiers alongside a longer-term decarbonisation plan. These can include plants and greenery to promote biophilia, good workplace design, access to amenities, end of destination facilities and other features attractive to occupiers.

This is an area that requires further development as social value and social impact increase in importance to investors. What we do know is that social features are highly contextual and should be the product of a detailed needs analysis by key stakeholders so that the social benefits, provided directly by the asset, meet the needs of the key stakeholders.

3. Next Steps

The conditions of social and environmental obsolescence are challenging real estate assets in ways that are historically unique. The speed that some markets are evolving to include these considerations has meant that previous methods of managing the risks of obsolescence have not been effective.

One way that obsolescence has historically been addressed is through redevelopment: knocking down the building and starting again. This process of renewal comes with a notable environmental cost as the embodied carbon wasted can be more than half the whole life carbon associated with the asset. So we need to improve the quality of buildings as best we can without replacing them.

The aim of this paper is to start a discussion to gain a better understanding of the basis for asset stranding so that the ways to mitigate these forms of obsolescence can be addressed earlier. There will be markets where the existing assets, as they currently operate, will be less competitive.

Understand your options

Where there are risks of asset stranding, investors can manage these risks by having sites assessed with detailed capex plans. These will highlight the extent of given risks, but a realistic plan may also support asset disposal.

Occupiers may recognise that a detailed and realistic plan to keep an asset up to date with current requirements, especially when aligned with social elements of the asset such as wellbeing features or community integration. However, extensive asset upgrades may be restricted by a tenant's occupation.

Finally, there may be other options that provide better returns for a building. Working through options with valuations professionals may help to unlock a better use for that building in the given market, providing improved income opportunities and investment options for the asset.

Appendix A: Q&A from AREF June 2024 Conference Presentation

The purpose of this Q&A is to provide responses to questions that have been asked regarding stranded assets to help illuminate the topic. These questions were originally posed at the Stranded Assets session at AREF's June 2024 conference and, for this publication, may have been amended for relevance or to generalise when the question was aimed at specific parties. The answers stated here are not necessarily those provided during the event.

1. Are lenders offering better loan terms on 'green' assets?

The trend is towards preferential treatment for green assets, even if it is not yet universal. Some lenders offer more favourable terms for properties with strong environmental credentials, such as lower interest rates or higher loan-to-value ratios, driven by the recognition that green buildings may present lower risk profiles due to their potential for higher occupancy rates, lower operating costs, and better futureproofing against regulatory changes. Lenders have examples of green loans and sustainability-linked loans that have better terms. However, the practice is not standardised across the industry, and the definition of what constitutes a 'green' asset can vary.

Another way to look at this, is that more banks and lenders will be interested in green assets, or even assets with a reasonable investment plan to improve green credentials. This may result in better terms simply based on a wider range of options.

2. Does the investment management industry have the resource and capability to act against the different types of obsolescence or will this be outsourced?

The investment management industry is increasingly recognising the importance of addressing various types of obsolescence, including strategic, configurative, physical, and economic obsolescence. While many firms are developing in-house capabilities to manage these risks, there is also a trend towards partnering with specialised consultants and technology providers. The complexity of ESG considerations, particularly around climate risk and decarbonisation strategies, often requires a combination of internal expertise and external support. As the field evolves, we are likely to see a hybrid model where core competencies are developed in-house, with specialised or technical aspects being outsourced to ensure comprehensive risk management.

3. What evidence is there for a green premium or brown discount in residential? Are valuers already systematically down valuing residential properties below EPC C?

The different pricing choices that investors make will change across geographic locations and asset types. Valuers try to reflect the evidence of these decisions as best they can, and EPCs are a useful tool, especially when existing or potential regulations are being considered by investors in their decision making. There are many forms of residential, each with different investment decisions and factors that affect investor analysis. For example, in 2024, most commercial build-to-rent is generally newer than other asset classes and there are fewer examples of poor EPCs, and it has strong investment demand which likely suppresses ESG risk pricing. Student accommodation is also in high demand, but as energy bills are included in rents, these costs will be considered in cashflows and therefore in investment decisions. It is likely that valuers are systematically reviewing EPCs as a potential risk consideration, as expected by the RICS Red Book and Guidance, but this may

not always affect valuations if the market is not reflecting this risk. Put another way, EPCs may be considered in valuations comparables, but they may not result in price variations.

4. From 2023, it became unlawful to let commercial properties with EPCs of F or below. Has there been any evidence of stranding caused by enforcement action?

While the regulation prohibiting the letting of commercial properties with EPCs of F or below is now in place, to date there has been no notable enforcement action that we are aware of.

However, that does not mean that legal enforcement should be expected to be the primary driver of these regulations. Leasing agents, banks and insurance are also considering EPCs as a signal of asset quality. Market forces are driving enforcement of these regulations much more than regulatory enforcement.

For this reason, property owners have been proactively upgrading their assets to comply with the regulations and, often to defend against regulations, increasing their requirements on EPCs in acquisition. A review of the Non-Domestic EPC register indicates that F and G EPCs are likely less than 2% of total stock.

5. EPCs: should we be worried about the accuracy of this data?

There are legitimate concerns about the accuracy and consistency of EPC data. EPCs have had quality issues in the past, but as they are increasingly being used as a regulatory measure, not just in the UK but also by European investors, we expect the quality of assessment to improve.

However, EPCs are based on standardised assessments, which may not always capture the nuances of individual buildings or recent energy efficiency improvements. Factors such as assessor variability, the age of the EPC, and the limitations of the assessment methodology can all affect accuracy.

While EPCs provide a useful benchmark, it is important for real estate professionals to view them as part of a broader energy performance assessment, rather than as a definitive measure. As regulations and market expectations evolve, there may be a push for more frequent reassessments and improved methodologies to enhance the reliability of EPC data.

When it comes to asset stranding, asset owners who believe the EPC to be inaccurate and causing stranding can upgrade the EPC and improve the rating. Otherwise, the EPC does indicate a level of poor quality that the asset owner should consider the implementation of an investment plan to improve.

6. Where 'stranding' is beyond a fund's appetite, are there benefits of disposing with a plan in place?

Having a realistic plan for investment has a number of benefits.

Firstly, it demonstrates a proactive approach to ESG risk management, which can support marketing the asset. If buyers are going to price in upgrades to the asset in purchase negotiations, which is becoming common, a realistic and costed investment plan may limit the amount of risk that is added to any discount negotiations.

Secondly, it provides potential buyers with a roadmap for future enhancements, potentially widening the pool of interested parties.

Thirdly, it could help support any finance during the acquisition, as more lenders may be interested in providing finance. This could improve the terms.

However, the effectiveness of this strategy depends on market conditions and the specific characteristics of the asset. Having a costed investment plan when approaching a sale provides the most flexibility during the disposal process.

7. We talked about carbon and physical risk screening on acquisition but what social considerations do you screen for when assessing a potential asset during a transaction?

While social obsolescence has been discussed within this paper, the focus has been on the risks of stranding that are climate related.

However, when assessing a potential asset during a transaction, the BBP Acquisitions Sustainability Toolkit, updated to version 2 this year, is probably the best resource in the UK market and includes several social considerations, including:

- The property's accessibility and compliance with disability regulations, such as checking if the asset is Disability Discrimination Act (DDA) compliant.
- The toolkit also suggests reviewing any socio-economic requirements linked to the property, such as specific S.106 socio-economic requirements from the local authority or commitments in development agreements to report annually on socio-economic indicators.
- Additionally, the screening process often involves assessing the property's access to public transport and evaluating opportunities to improve transport provisions, which can have social implications for occupants and the local community.

Other social considerations may include reviewing tenant activities to ensure they align with the organisation's ESG strategy and do not pose reputational risks, as well as examining any existing occupier engagement initiatives or community programs associated with the asset.

Appendix B: Dissecting the term 'Stranded Assets'

What is a stranded asset? What is new about the current use of this term that makes it different from more normal forms of poor investment performance?

This paper takes an economic view of stranded assets as it applies to commercial real estate, as opposed to an environmental focus, and will use economic terms and concepts as much as possible.

A Real Estate Specific Definition of a Stranded Asset

'Stranded assets are defined as assets that have suffered from unanticipated or premature write-downs, devaluation or conversion to liabilities'.¹

A stranded asset is a form of extreme asset obsolescence.

Obsolete assets are not a new concept and can be broken down into the following characteristics:

- **Strategic:** The asset is poorly aligned with legislative policy or the common strategic requirements of tenants or investors, reducing demand for such an asset.
- **Configurative or Functional:** The asset requires capex to functionally align with market expectations. Without this investment to improve functionality, the asset is unattractive to tenants or investors, and liquidity is constrained.
- **Physical or Environmental:** The asset requires capex to address physical issues in the building that impair its ability to attract tenants or investors. This can include meeting regulations (fire safety or energy efficiency for example) or addressing physical risks to the asset (such as physical climate risks).
- **Economical from an income perspective:** The income that the asset is expected to produce is lower than investor requirements. This could be because operating costs or capex have reduced returns to below what the market requires.
- **Economical from an investment risk perspective:** Strategic demand for the asset is low and the cost or risk associated with the investment reduces liquidity.

Historically, when an asset has become obsolete it can either be refurbished or redeveloped. The underlying land value and potential to redevelop has always remained the 'fallback position' for real estate. When an asset has depreciated beyond the point of being economically viable, it has been redeveloped.

What has changed? Based on the above:

- Stranded assets are not a new concept, but what is notable is the speed of the depreciation. This speed was unanticipated and has led to premature devaluations. A typical example of this is from the impact of environmental regulations, but it could also come from other forms of unanticipated premature devaluation (post Grenfell cladding issues may have resulted in this form of asset stranding, for example). But there are still options for the asset. This is possible across a lot of the real estate market. Or

¹ Lloyds of London <https://www.lloyds.com/strandedassets>

- Stranded assets are a new concept; where restrictions remove the viability of a redevelopment, leaving no options. This would be a rare but quite remarkable event. A valuer would model the valuation to assume a sale, but this sale is theoretical and highly unlikely.

Contrasting these conditions

In both conditions, there is a large amount of capex required to align with market requirements and income is in jeopardy. If the income is not imminently at risk, the asset owner has some flexibility to potentially address capex and avoid stranding. The table below is focused on the investors' perspective, rather than a valuations position.

Condition	Speed of Depreciation	Conversion to Liability
Capex	The capex required to align the asset to market requirements is beyond what the market sees viable for letting or a potential sale. This increased capex is often associated with environmental regulations due to the swift introduction of increased climate change legislation amplifying requirements to decarbonise.	
Income	Income has an imminent impairment; the asset is either currently or soon to be unlet without any interest in the market. This could be because the asset is poorly aligned to market expectations or there are regulatory reasons why the asset cannot be let.	
Liquidity	Poor liquidity, resulting in expectations of reduced pricing. This can be the result of a market downturn. Historically, the asset may have been taken off the market until conditions improve, but the volume of assets with this condition across the market means liquidity will always be challenging.	The asset is illiquid. There are no interested buyers and waiting is not expected to improve matters.
Alternative uses or Redevelopment	There are alternative uses or redevelopment options, but these are not preferred by the asset owner and do not achieve investment returns.	The market does not see the asset fit for any alternative uses. There are no viable redevelopment options. See below.
Examples	Much of the secondary office market which needs ESG related capex.	Arguably, the market cannot evidence these currently as they have not transacted.

Under what conditions would the speed of depreciation accelerate in an unanticipated way?

Scenarios where depreciation could accelerate in a way that the market has not anticipated:

1. The introduction of regulations that place requirements on assets to increase capex. The more immediate, the greater the impact on depreciation. An example of this is fire regulations post Grenfell.
2. The economic fallout of a major unanticipated geopolitical event, an example being COVID-19.
3. The economic fallout of a notable unanticipated market event, an example being rising interest rates.

4. A combination of events can increase risks and make them more unanticipated, such as the confluence of COVID-19, rise of ESG risk management and interest rate rises.

Under what conditions would a real estate asset become a liability?

Scenarios where land value/redevelopment are not viable causing real estate assets to become liabilities:

1. Where physical climate risks (flooding or coastal erosion) impair land value to the extent that future redevelopment is completely unviable. This may occur where flood defences or erosion management are not anticipated, such as areas of low population density.
2. Where regulations prevent redevelopment. For example, planning restrictions on embodied carbon that force refurbishment, but the asset/market cannot find viable alternative uses under the current regulations. While this may be curable through changes in policy, those policy objectives may not be aligned with decarbonisation activities.
3. Where regulations reduce the viability of redevelopment. For example, where Part L requirements make any redevelopment too expensive for the local market. This may be curable if the market strengthens.

Curable vs Incurable

There are ways that an asset can become more liquid:

- If market conditions become more favourable, making alternative uses more viable.
- Changes in policy that reduce the capex requirements or open other viable alternative uses (i.e. permitted developments).

Some conditions which may be considered incurable:

- Where the physical risks to the land are expected to get worse, increasing risks to the land value and local infrastructure. Coastal erosion, flooding, wildfires, or major storms may be examples of this, which are being made worse by climate change.
- Market requirements that are aligned with long term policy. In some cases, the market may ignore short-term changes in policy that are not aligned with longer-term policy objectives, knowing the cost will be recognised in the longer term.

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