

# Climate change and cities: Adapting real estate investment decisions



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Some of the predicted impacts of climate change are now inevitable. 2020 was the hottest year globally, and the number and severity of extreme events has quadrupled since the 1980s. To date, however, efforts have focused on mitigation and emissions reduction. Despite this, the latest predictions suggest average global temperatures could increase by 2.8°C by the end of the century without rapid, large-scale change.

This poses a serious challenge for investors and asset owners. The risks of losses and damages from climate change compound with every increment of global warming, and the cost to global cities from sea level rise and associated flooding alone could reach \$1 trillion by 2050.

The World Economic Forum suggests that the coming decades will be defined by “ex-cities and climate migrants”. Estimates suggest there have already been 31 million environmental migrants globally.

## Climate change - the “threat multiplier”

The impacts of climate change are already being realized for the real estate sector, and the frequency and severity of these impacts is expected to increase. Climate change can act as a threat multiplier when combined with the unique characteristics

of cities. The “urban heat island” effect can create pockets of extreme heat stress. Dense populations, in tall, energy-hungry, glazed buildings, can intensify heat gains. Increased migration – exacerbated by climate change – adds pressure to ecosystems, and increases reliance on already stressed infrastructure.

## Identifying risk and resilience at regional, city and asset level

The predicted impacts of global warming are well modelled, but identifying which cities are most at risk can be challenging. Regional- or national-level analysis can identify broad risk trends. Assessment at the local/asset level or the specific site/location of a city or building can provide a much more varied picture.

The blending of physical risk modelling with social, financial and regulatory information is where the most benefit will be realised for real estate investors and owners. How a city has developed, or plans to develop, resilient infrastructure must also be accounted for.

## Physical climate-risk in financial modelling and decision making

The real estate market does provide indicators of price movement, but there’s limited evidence valuers take climatic scenarios into account. Although changes to property value following climate-related events can be short-lived, repeated severe storms or wildfires show slower rebounds in value. With frequency and severity of events expected to increase, permanent or sustained

falls in value are likely. Despite this, proximity to amenities (e.g. coastlines) can still result in value increases in high-risk areas.

Currently, insurance premiums are based on historical data, which can lead to underpricing risk. Insurers and investors must understand the areas currently at risk, and those that may become high-risk. In response to wildfires seen across California, insurance providers are now refusing to offer protection, or increasing premiums significantly.

There are also numerous secondary impacts associated with the physical climate risks in cities. Flood damage can be particularly impactful for retail and leisure assets relying on footfall. Extreme heat, especially exceeding wet bulb temperatures, can impact construction, human health, productivity and require significant additional cooling energy. Droughts can curb energy production and cause blackouts.

Existing and planned efforts to decarbonise buildings (e.g. insulation, air tightness) could actually exacerbate climate impacts.

## Effective adaption in global cities

Major cities worldwide will need to adapt to survive. Nature-based solutions is one method of adaptation being prioritised, particularly in the EU. Temperatures under tree cover can be up to 12C lower than average external temperatures.

Other soft and hard engineering solutions are can be implemented, from lightening road and pavement

surface colours to adaptive building design, creating ‘active cooling centres’, and flood defences.

It’s critical that adaptation is considered in tandem with other challenges, done early and collaboratively.

## Investment decision-making

It is clear that a paradigm shift is needed in how we approach physical climate risk analysis, and how the real estate sector incorporates this into financial decision-making.

A number of advancements across the sector will be necessary.

- Engagement with insurers and valuation professionals to understand how building and city adaptation will impact values.
- Integration of energy & carbon impacts of future climatic scenarios into net zero strategies must be improved
- Collaboration with local/regional public bodies to understand potential exposure/opportunities for assets and cities.
- Enhanced due diligence to require broader climate risk analysis
- Greater understanding of connectivity and reliance upon at-risk infrastructure

To develop effective strategies, all stakeholders need to work together, and soon. Considerable efforts is needed to ramp up analysis and planning in the short to medium term.

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