The Great Epsilon²
Real Estate Transformation

From a Mitigation World to an Adaptation World



European Residential Vision Report 2024

Image Source: Canal Architecture

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Cover image: TEBiO Project, Bordeaux France. The first building that was ex-ante designed, permitted and taxed to be reversible for multiple alternative uses.

Executive Summary

The Great Epsilon^2 Real Estate Transformation: From a Mitigation World to an Adaptation World

The Epsilon, or Greek letter 'E'-shaped trifurcation of real estate investment portfolio valuations along alternative pathways from a decarbonisation 'tipping point' was introduced in: '*The Epsilon Great Transformation of Real Estate Markets*' in our European Residential Vision 2023 report, which aimed to conceptualize the integration of climate change mitigation into investment strategies.[1]

These ideas formed Catella's contribution to the Urban Land Institute-led 'C Change' programme that supports the development of a common industry methodology to assess climate mitigation risks as part of property valuations, to avoid the stagnation of real estate investment markets and avoid stranded assets. C Change is consequently also the industry's most advanced 'North Star' for navigating the mispricing challenges to investors presented by climate change.

In this year's European Residential Vision, we dive deeper into how the sustainable decarbonisation financial mechanism works and address the likely further Epsilon segmentation of real estate investment markets (Epsilon^2) as we fail to adopt climate mitigation decarbonisation strategies fast enough, which brings us into the 'Adaptation World' and another mispricing of assets.

Adaptation risks are not properly priced in currently and so new market tipping points will arrive, which will signal a further differentiation in valuations between assets with adaptation premia and adaptation write-offs. Some regions are more adaptive resilient due to their natural endowments, political systems, energy consumption patterns and limited complexity density. Some assets are also adaptive beyond their current usage because they repurpose at extremely low cost and CO_2 levels and can deal with migration flows arising from the expected radical changes in the physical environment.

> **Residential markets sit at the epicentre of the challenges of climate change and societal inequality.**

Residential real estate in construction and operation, mainly heating and cooling, contributes nearly 30% of total global greenhouse gas emissions[2] and is a basic human need, so due to both its scale and emissions it has to sit at the epicentre of the battle against climate change. Finding the proper financial mechanism for greening housing markets at the lowest price point is critical, because many housing markets are at peak unaffordability already and growing societal inequality feeds rising political polarisation. Logically therefore, the greatest financial and societal returns for institutional real estate investors are likely to be found in decarbonisation investment strategies linked to affordability in the residential asset class. As the investment market adopts the financial mechanism to drive the decarbonisation of portfolios, as it must, then financial returns will also be optimised and future value at risk minimised in the Great Green Transformation of our economies.

> **Integrating climate finance into your investments strategy is just as relevant for your returns as the interest rate. The good news is that the climate cost machine has a logic of its own and you can control it.**

The key is mitigation, which has both a minimizing substitution effect on costs and a maximizing multiplication effect on those same costs. Mitigating CO_2, for example by changing an old gas heating system for a heat pump, is the cheapest greening strategy as it benefits from a substitution effect. It has, in addition, a multiplier effect on all the other climate costs because the later we mitigate and green the economy the more we will pay for the other cost categories: adaptation, damages, and the ultimate CO_2 clean-up costs. This is because CO_2 is cumulative in the atmosphere and has a lagged effect on climate change with its value destructing effects and possible negative feedback loops pushing us over ecosystem tipping points and piling-up further costs. The later we start decarbonising, the more value is destroyed and the more accumulated CO_2 we face that we need to recapture at a higher cumulated price point.

If we mitigate and act now, we lower the real estate portfolio mean direct return, but limit the future standard deviation of total returns and value at risk (VAR). If we act later, we stabilize the portfolio mean direct return now, but lower the future mean direct return more and increase the future standard deviation of total returns and VAR more. The more we delay, the more it will cost, the more it will be politically polarising to decide who pays the bill and the more we risk further delaying it.

> **Mitigation through decarbonisation is financially the rational thing to do as it enhances income, strengthens energy security, avoids paying carbon taxes and most crucially, it lowers total decarbonisation costs and avoids future value destruction.**

Investors in European residential markets have been battered by inflation, asset deflation, regulatory uncertainty, lower capital availability, negative leverage, less liquidity in financial markets and reduced liquidity in funds over the last two years. Return requirements are up, direct and indirect income are eroding, and this has halted new supply, spurred market rents higher and dropped values 10-30% in nominal terms.

[1] Weblinks to this previous strategy note, as well as further strategy notes that discuss decarbonisation mispricing and anti-fragility concepts referenced in this strategy note, are provided on the previous page.

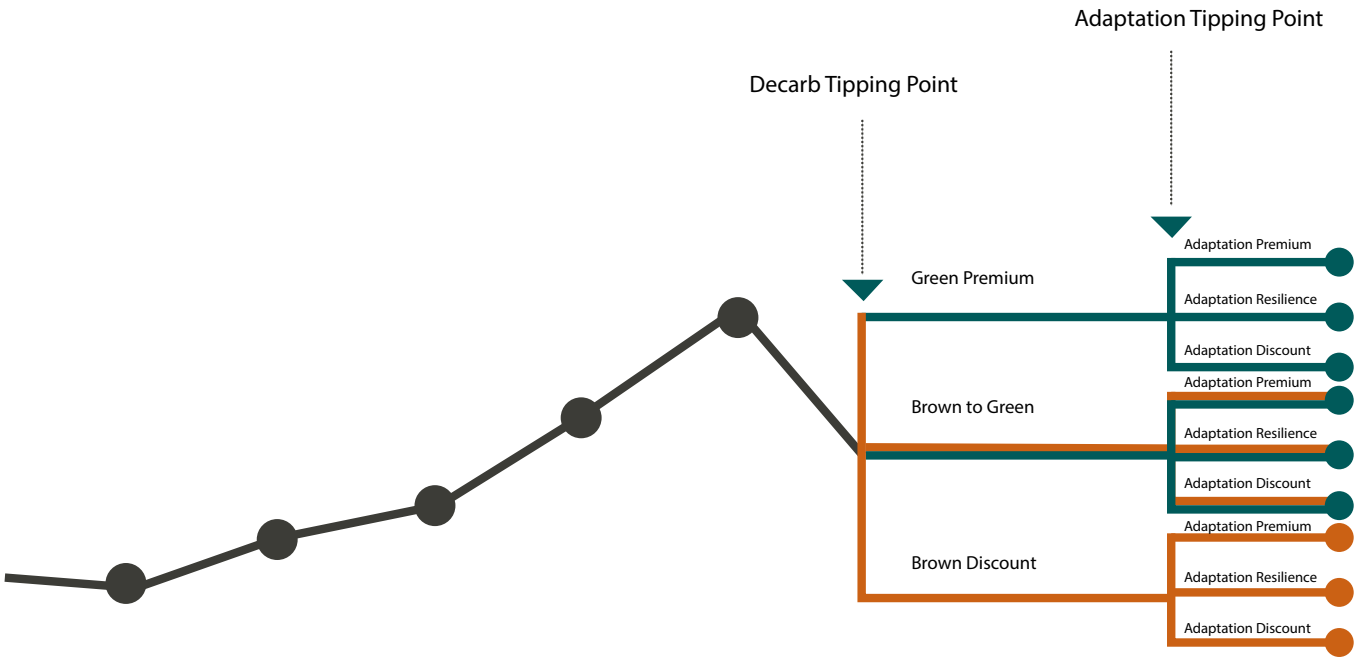
[2] IEA (2021), Energy Efficiency Indicators Database; IEA (2021), Emission Factors Database and OECD calculations

The decarbonisation of assets introduces new and unexpected costs to investors, putting further pressure on returns. Against this background it is only human to postpone decarbonisation costs, a phenomenon that is widely occurring in the real estate investment markets – as recently reported in industry association INREV's investment intention survey 2024. The rational financial thing, however, is to do exactly the opposite: maximise, not minimise, investments in decarbonising now, even if it further diminishes direct returns and total returns in the short run.

> **Pension and sovereign wealth funds are next to the State the main stakeholders to get us into the 'Great Green Growth World.' They have the time, stakeholders, and funding necessary to play a very positive role in arbitraging more easily in favour of the highest IRR and lowest VAR. They also pay the higher bill if we don't. So they should pull the greening up.**

Pension funds could, for instance, set targets on minimum amount per year spend on decarbonising assets in their portfolios to maximise their mitigation strategies. In a slightly more daring approach, one could link this to the performance fees of investment managers. That minimum decarbonisation KPI on annual amount spent could, in the European Union, for instance be 15% (6 years left) of the total decarbonisation cost at portfolio level to reach 55% of decarbonisation by 2030, the EU's interim 'Green Deal' target for a net carbon neutral European economy in 2050. Introducing minimum annual investment mitigation budgets and disclosure levels on decarbonisation by institutional capital is not that revolutionary and could inspire and motivate the entire real estate investment industry.

Exhibit 2: The Epsilon Squared: decarb and adaptation tipping points



Source: Catella Residential Investment Management

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Please get in touch by email for a full copy of the report.

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