



NET ZERO ‘VALUE ENGINEERING’

Enhancing Value Engineering Strategies for
a Climate-Resilient Future

Build Better, Use Less [White Paper 2]
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Net Zero Value Engineering:

Introduction

Sustainability and decarbonisation of the built environment has become a critical consideration in the construction and design industry as the sector grapples with its significant contribution to the climate and biodiversity crisis.

As a forward-thinking and responsible real estate development company, Grenadier Estates recognises the urgent need for a paradigm shift in the way we develop. Our experiences tell us that we need a new approach to 'value engineering' in developments: **Net Zero Value Engineering**.

This abridged white paper discusses how traditional value engineering processes resulted in a missed opportunity to further Net Zero and proposes an addendum to the RICS Value Management and Value Engineering Guidance Note to ensure sustainability is a key consideration during this critical inflexion point. By adopting these changes Grenadier believes we can all achieve **Sustainability by Design**.

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SCOPE

This paper is not designed to be holistic or solve all the problems, it is designed to be a tool for action, to inspire further conversation and collaboration. It will be naïve to some and antagonistic to others. It reflects our experience, not advice. It is not a critique of the suppliers and professionals we have used.

We are happy for others to use and share this document and the ideas within it provided they acknowledge Grenadier Estates.

Current Limitations of Value Engineering

Traditional value engineering (VE) in property development refers to the process of reducing costs while maintaining or improving the value and functionality of a project. Generally, VE focuses solely on cost optimisation, managing traditional “risks” and weighing up competing stakeholder value, whilst overlooking critical externalities and the potential long-term financial and environmental benefits. This approach is widely used in the construction industry, but does have limitations, including:

1. **Short-term focus:** Value engineering often emphasises short-term cost savings over long-term considerations. This can lead to decisions that prioritise immediate financial gains but may neglect the long-term impacts of the project, such as its environmental sustainability and resilience to climate change.
2. **Lack of consideration for climate risks:** Traditional value engineering does not adequately account for the increasing risks posed by climate change. Extreme weather events pose a physical risk whilst the wave of legislation to meet the UK’s 2050 Net Zero target could leave landlords with stranded assets and transition risk.
3. **Narrow focus:** Traditional value engineering rarely prioritises environmental aspects, leading to missed opportunities to create greener and more sustainable buildings. The drive towards achieving Net Zero emissions requires a holistic approach that goes beyond cost-cutting.
4. **Incomplete assessment of intangible benefits:** Value engineering typically focuses on tangible cost savings and may not fully consider the intangible benefits of sustainable design, such as enhanced brand reputation, improved occupant comfort, and increased property value over time. It also doesn’t consider the wider societal Net Zero Goals that we have to achieve as a global community.

Learning from our ‘Mistakes’

Achieving net zero objectives in property development demands a holistic approach that prioritises reducing carbon emissions and minimising environmental impact. One critical element of this approach is maximising on-site renewable energy generation, such as solar panels. Solar panels offer a clean, sustainable energy source that reduces a building's reliance on fossil fuels and lowers its overall carbon footprint. In turn, this enhances the property's net zero status while also leading to significant long-term cost savings for occupiers due to reduced reliance on external energy sources.

Grenadier Estates identified the current limitations of traditional value engineering from one of its projects where roof top solar panels were value engineered out. The decision was made because the installed design capacity could be achieved with fewer higher efficiency panels. This left certain roof top space free of panels.

While the as-designed objective may have been achieved, the decision ignored the long-term benefits of reduced operating costs and lower operational carbon. This was a missed opportunity to add additional generation capacity for the site that might not have occurred if a Net Zero Value Engineering approach had been adopted.

In making this mistake we identified the need for a Net Zero Value Engineering approach and surmised that the traditional value engineering process is deeply embedded in the development community.

Whilst traditional value engineering is important exercise for every development and RICS have provide much needed guidance on how to “value engineer” this has created a set track and pathway for the professional teams to follow that can create tunnel vision when it comes to sustainability decision making.

Our Suggested Solution

We believe that working within existing frameworks and processes is an important principle that allows change to happen within traditional systems.

Accordingly, to address the limitations of the current process we believe the [RICS Value Management and Value Engineering, 1st edition](#) guidance should be updated to ensure that sustainability and climate is an integral part of every value engineering process. An addendum to existing guidance could be created that would ensure sustainability considerations are not overlooked or sidelined during the value engineering process. This addendum could cover:

1. **Climate Risks** - a dedicated section explaining how financial climate risks can be increased due to VE decisions.
2. **Weighting** - additional guidance on weighting of 'value' with carbon emissions as the proxy.
3. **Valuing Intangibles** - creating a framework for assessing the value of intangible benefits from maintaining sustainable design.
4. **Stakeholders** - embedding ever-present stakeholders of Nature and Wider Societal Net Zero Goals with industry standard value criteria.

Conclusion

In conclusion, Grenadier Estates believes that the integration of sustainability and climate issues into the RICS guidance on Value Engineering is crucial to drive meaningful change in the construction and design industry. By introducing 'double materiality', projects can be kept on track to create a more climate-resilient and sustainable future. This is **Sustainability by Design**.

