Jamestown – Amsterdam and Cologne

Case Study ESG

Rethinking carbon impact: Adaptive reuse outperforms new construction

PROJECT:
Adaptive reuse project

COMPANY:
Jamestown

LOCATION:
Netherlands and Germany

Challenge

Despite its benefits, adaptive reuse is often overlooked. Current sustainability certifications and regulations typically prioritise operational carbon, because it contributes more visibly to global emissions, is easier to measure, and is associated with long-term cost savings. This emphasis tends to favour new construction, as improving operational efficiency in adaptive reuse projects can be more complex.

In some cases, such as historic buildings, adaptive reuse is the only viable option yet remains undervalued.

While policies are increasingly addressing embodied carbon in new construction, they rarely question a more fundamental issue: should existing buildings be demolished and replaced in the first place?

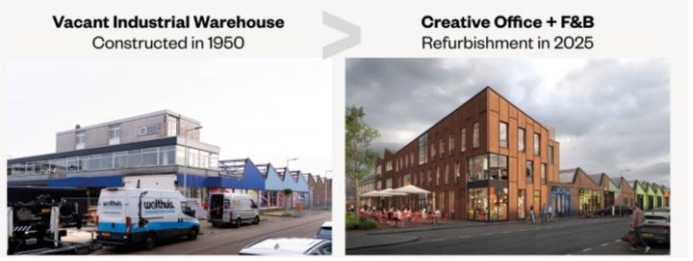
Solution / Approach

Jamestown engaged consultants to conduct Life Cycle Assessments (LCA) comparing the whole-life cycle carbon impact of adaptive reuse (implemented strategy for two assets), against hypothetical new-construction scenarios:

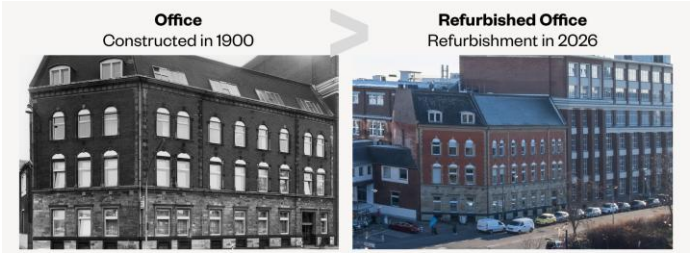
- 1-15 Pilotenstraat Schinkel, NL: Major repositioning of industrial warehouse into office (5,400 sqm). Majority of structural elements retained (steel frame structure, foundations, slabs, brick walls). New windows, insulation and air-to-water heat pumps.
- 24 Schanzenstrasse Cologne, DE: 1900s office converted into modern office (2,086 sqm). Majority of structural elements retained (reinforced concrete structure and brick facade). New windows, roof structure, insulation, interiors and air-to-water heat pumps.

Definitions used in this study:

- Adaptive reuse: Repurposing an existing building for a new purpose whilst retaining its core architectural elements;
- Operational carbon: Emissions from building operations (eg heating, cooling, lighting).
- Embodied carbon: Emissions from construction materials (upfront) and refurbishment and maintenance (use-stage).
- Whole life-cycle carbon: Embodied and operational emissions over 50-year life cycle.



1-15 Pilotenstraat Schinkel, Netherlands



24 Schanzenstrasse Cologne, Germany

For the adaptive reuse scenarios, calculations were based on design documentation from the refurbishments. The hypothetical new-build scenarios were assessed using 'like-for-like' modelling (comparable use, size, standard and materials) and reference buildings.

Results

The LCA[1] demonstrates that the two adaptive reuse assets show 20–40% lower whole life-cycle carbon emissions over 50 years compared to new construction.

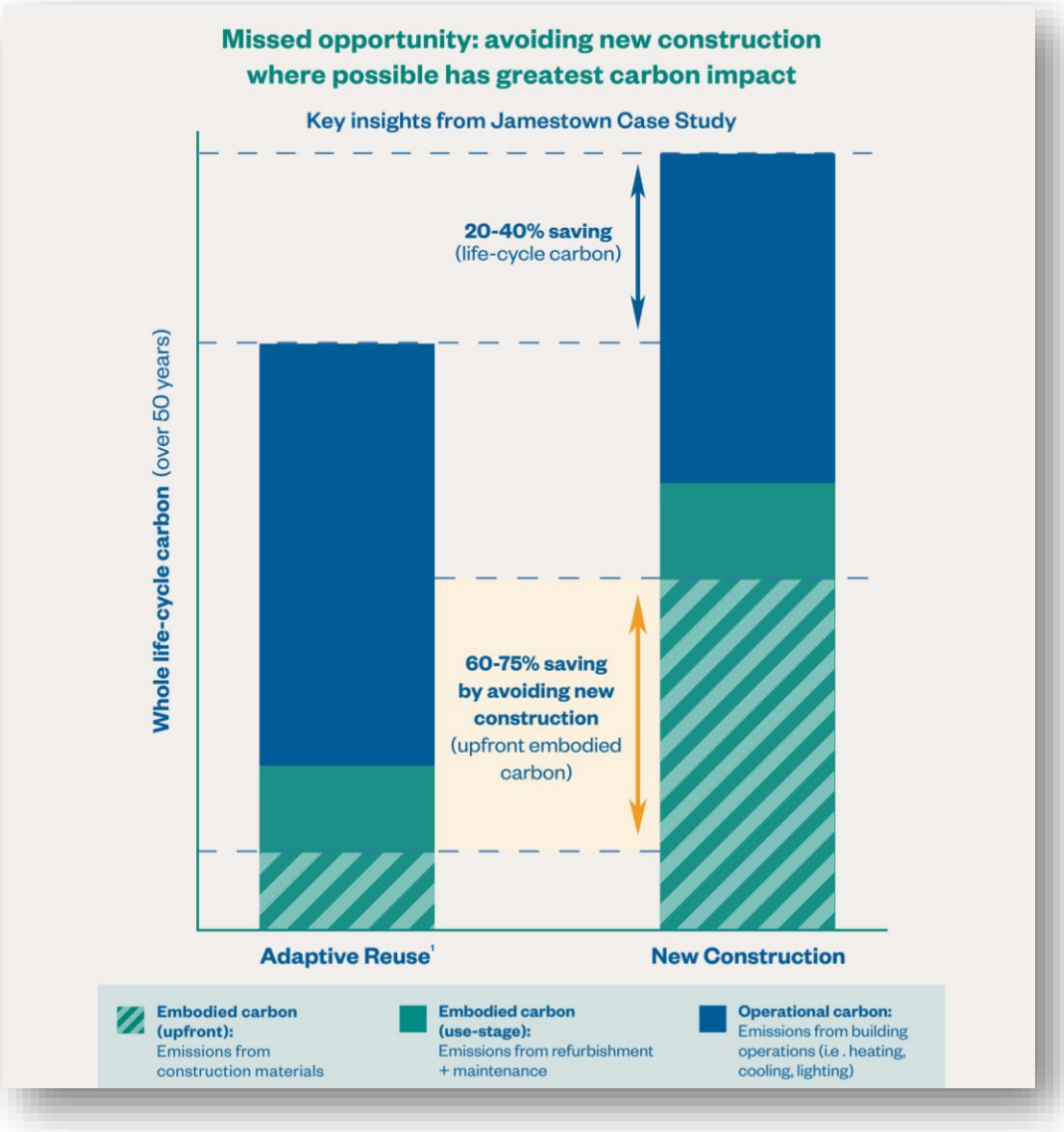
The key reason is the preservation of the existing buildings, which avoids the significantly higher upfront embodied carbon required for new builds. This avoided impact is the decisive factor behind adaptive reuse outperforming new construction in total carbon emissions.

Outcome

The study emphasises the need for a more holistic perspective, one that considers both embodied and operational carbon, to better reflect the true environmental impact of development choices.

Evaluating whole life-cycle carbon provides a more complete picture of the benefits of adaptive reuse and supports more informed decision-making across the real estate sector.

1. The LCA covered Modules A to B, capturing both upfront embodied carbon and use-stage carbon.

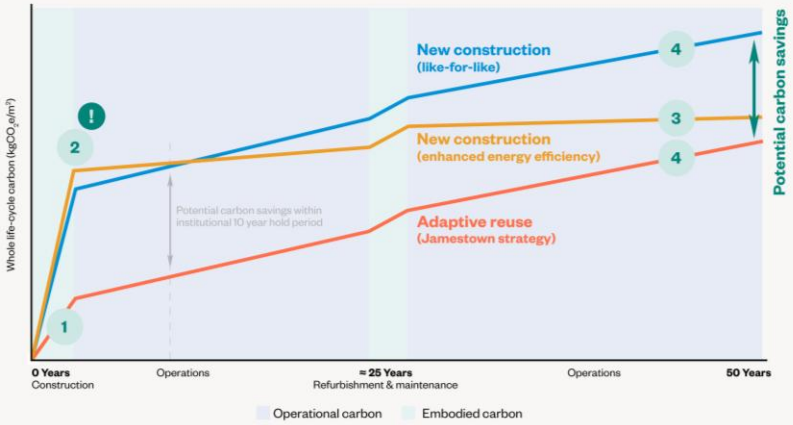


Jamestown specialises in "futureproofing" iconic, historic properties by adapting these spaces to modern uses while preserving the aspects that make the properties timeless. Not all historic properties are candidates for value-add, but they can be if they're underutilised in contemporary formats. This includes future proofing measures such as implementing structural upgrades to support modern-day uses, investing in energy efficiency and other ESG enhancements, and establishing a strong narrative thread that connects location, community, and history.

Michael Phillips,
President, Jamestown

WHOLE LIFE-CYCLE CARBON CASE STUDY: KEY INSIGHTS

Jamestown presents the key insights from two LCAs conducted by Drees & Sommer and Agradblue. These assessments compare the whole life-cycle carbon impact of adaptive reuse versus hypothetical new construction scenarios over 50 years. Common insights are summarized below, with detailed studies provided on the following pages.



'Adaptive reuse' scenario reflects Jamestown's asset strategies. The hypothetical new construction scenarios include 'like-for-like' new build (comparable use, size and standard) and an 'enhanced energy efficiency' new build, designed to be 30% more operationally efficient than 'like-for-like'.

1. **Low upfront embodied carbon:** Repurposing existing buildings significantly reduces carbon emissions in construction
2. **High upfront embodied carbon:** High embodied carbon impact due to construction of new building
3. **Low operational energy:** 'New construction (enhanced energy efficiency)' can perform best however upfront embodied carbon impacts final LCA result
4. **Comparable operational energy:** 'Adaptive reuse' can compete with 'new construction' with HVAC and façade upgrades

! The LCAs cover modules A to B (upfront and use-stage). LCAs typically exlude demolition of existing buildings, treating it as a sunk cost. One case study showed an additional 20% carbon saving with demolition included.

Our adaptive reuse strategy has demonstrated **whole life-cycle carbon savings ranging from 21% to 43%** over 50 years. Key insights from the case study:

- Adaptive reuse exhibits lowest whole life-cycle carbon impact due to preservation of the original buildings and avoidance of high embodied carbon of a new construction
- Despite better operational efficiency, 'new construction' exhibits higher overall life-cycle emissions due to high upfront embodied carbon (up to 60% of total emissions occur during construction)
- Carbon-intensive buildings (ie reinforced concrete) can offer greater carbon savings when preserved compared to less intensive structures (ie warehouse)

Jamestown

Jamestown is a global real estate investment and management company with over 40 years of experience creating places that foster innovation and build community. As of September 30, 2025, Jamestown manages $14.4 billion in assets across the U.S., Europe, and Latin America. Jamestown employs more than 600 people globally across 11 offices, including headquarters in Atlanta and Cologne. Through its vertically integrated platform, Jamestown brings a design-focused, hospitality approach to diverse product types, including retail, office, residential, mixed-use, and grocery-anchored shopping centers. Jamestown's current and previous projects include One Times Square and Chelsea Market in New York, Industry City in Brooklyn, Ponce City Market in Atlanta, and Groot Handelsgebouw in Rotterdam. For more information, visit www.jamestownlp.com.