

## CASE STUDY

# VIEBROCKHAUS SMARTCITY

## Achieving CO<sub>2</sub>-Neutral Housing

The Viebrockhaus SmartCity project features 18 homes using Armacell's PET insulation, ArmaPET® Eco50, made from recycled materials, significantly reducing CO<sub>2</sub> emissions and enhancing sustainability. **Armacell building a greener future.**

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MAKING A DIFFERENCE AROUND THE WORLD

# PIONEERING SUSTAINABLE HOUSING SOLUTIONS

Viebrockhaus, a renowned house-building company with roots dating back to 1954, has long been synonymous with quality and durability in the construction sector. The evolution of housing demands, driven by climate change, aesthetic shifts, and heightened awareness around sustainability, has led Viebrockhaus to pioneer innovative solutions in eco-friendly living. The SmartCity project near Hamburg, Germany stands as a testament to their commitment to sustainable development, embodying the ethos of CO<sub>2</sub>-neutral, energy-efficient housing.

## Rethinking Building Practices

The construction industry faces significant environmental challenges, including high CO<sub>2</sub> emissions, excessive raw material consumption, and environmental degradation.

As humanity's resource consumption currently surpasses Earth's capacity to regenerate, the urgency for sustainable practices has never been clearer. In Germany alone, the construction sector is a major consumer of raw materials, necessitating a radical rethink of building practices.

## New Eco-Friendly Standards

In response, Viebrockhaus embarked on the SmartCity project, a pioneering eco-development featuring 18 detached and semi-detached homes. These properties are not only aesthetically pleasing and functional but also meet the Efficiency House 40 standard, qualifying for BEG funding under the Quality Seal for Sustainable Buildings (QNG). Central to achieving these sustainability goals was the adoption of Armacell's innovative PET insulation, ArmaPET Eco50.



## Sustainable Choice

ArmaPET Eco50, crafted from recycled PET bottles, offers a sustainable alternative to traditional insulation materials. Its use in SmartCity's construction—both as perimeter insulation and core insulation in masonry—exemplifies a climate-friendly approach to raw material use. This choice aligns with Viebrockhaus's mission to reduce environmental impact without compromising on quality or durability.





©Viebrockhaus: Sustainable SmartCity in Harsefeld.

## Embracing ArmaPET Eco50

The incorporation of ArmaPET Eco50 into SmartCity's design has yielded impressive outcomes:

- // A 50% reduction in CO<sub>2</sub> emissions associated with concrete production
- // The use of 100% recycled materials for window frames
- // The installation of heat pumps, eliminating the need for fossil fuels
- // A drastic reduction in sealed surfaces, from 50 to 11%, enhancing water management



These achievements underscore the potential for innovative construction technologies to significantly enhance sustainability in the building sector.

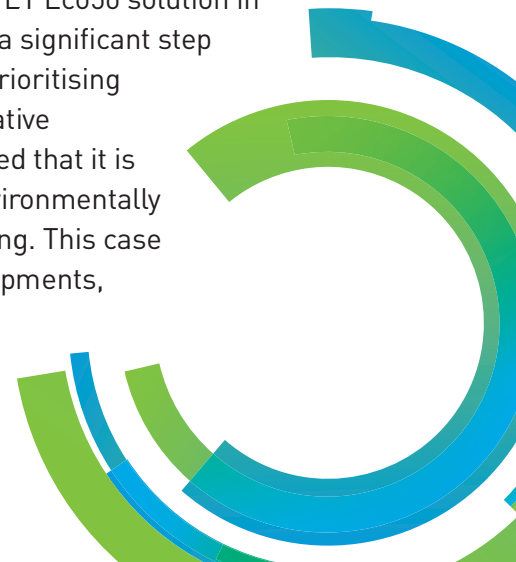
ArmaPET Eco50 solution not only facilitated easier installation and offered excellent insulation properties but also aligned perfectly with Viebrockhaus's sustainability objectives.



©Viebrockhaus: ArmaPET Eco50 perimeter and core insulation with a surrounding frost shield.

## A Model for Future Developments

The successful implementation of ArmaPET Eco50 solution in Viebrockhaus's SmartCity project marks a significant step forward in sustainable construction. By prioritising resource efficiency and embracing innovative materials, Viebrockhaus has demonstrated that it is possible to build homes that are both environmentally responsible and conducive to modern living. This case study serves as a model for future developments, highlighting the importance of holistic approaches to sustainability in the construction industry.



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## ABOUT ARMACELL

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As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With more than 3,300 employees and 25 production plants in 19 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.

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