

Overview of Building With Purpose

Amid growing concerns about how the construction industry impacts the environment and contributes to [carbon emissions](#), the [THRIVE Project](#) has completed a significant study focussing on how construction materials affect the environment and shape the impact of buildings on nature. Here we explore **Building With Purpose - Case Study Insights: Reducing the Carbon Footprint of Your Home.**

Building With Purpose: The Context

With the [world's population](#) heading towards 10 billion by 2050, there will be roughly twice as many buildings built in that time. This means that delivering new buildings is a big problem for the environment and society at large. Even before people move in, new buildings create a lot of carbon emissions. Almost half of the total impact is in the design and construction phase. To deal with this issue and help reduce [climate change](#), it's really important to design [buildings](#) that are environmentally friendly. That's where our new study comes in. In our research, we looked closely at two houses that were very similar. The main difference was the materials used to build them. We looked at the production, transportation, and installation phases for each type of material, carefully calculating the carbon footprint. This helped us see how valuable these sustainable building practices are for the environment.

The United Nations have recently provided some [new insights](#), and it's not good news. The building industry is generating more carbon emissions than ever. This is really bad for the UN's goal of reducing emissions a lot by 2050. The industry is growing faster than we're finding ways to save energy, so we need to do something about it. The best way to build is to use materials that don't hurt the environment. We should [design](#) in ways that make the [carbon footprint](#) as small as possible over the building's entire life. Right now, buildings use up about 35% of the world's energy. They account for about 40% of total resources used. They also generate half of all greenhouse gases. [Green buildings](#), which care about the Earth and the people in them, focus on things like saving energy and water, picking good materials to build with, and generating less waste.

What We Did

Our study researched two key carbon emission types: embodied carbon (associated with materials) and operational carbon (from energy use). Embodied carbon, linked to materials like [concrete](#), metal, and brick, accounts for 30% of building emissions. Operational carbon, from daily energy use, constitutes 70%. Although materials create a lot of emissions right from the start, how we use energy to run buildings is an even bigger problem.

At the same time, our study also looked at how people act when they live in buildings. Despite [energy-efficient technologies](#), behavioural, social, and economic factors often hinder energy efficiency, causing over 30% of potential savings to be lost. A surprising discovery is that more energy-saving [appliances](#) can sometimes produce higher emissions, especially in homes. This stems from occupiers feeling they can be more careless with their behaviour because of their investment in greener appliances. These discoveries show that what people do really matters for the Earth.

Why It's Important

Most people spend a significant amount of time in their homes, often representing their biggest investment in their lifetime. We need to make big changes for healthier buildings. We can decide to build with more sustainable materials, but we also can't just rely on technology to make up for our unsustainable behaviours. By understanding that it's worth making [small changes](#), we can really make a big difference, often at no actual additional financial cost.

If you're curious about how construction affects the environment and want to make wiser choices, you might want to check out our research on more sustainable and low-carbon building materials and how they affect carbon emissions. Additionally, we provide research-based recommendations both for new homeowners (who are building a new house) and even for renovators (those who want to improve their current home to be more sustainable). We invite you to read our detailed report. In our research paper, you'll find out which materials are causing the most emissions and how choosing better materials can help the Earth and society. Join us in working towards a better future whereby we build with purpose.

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