

Embodied carbon in the maintenance planning of real estate

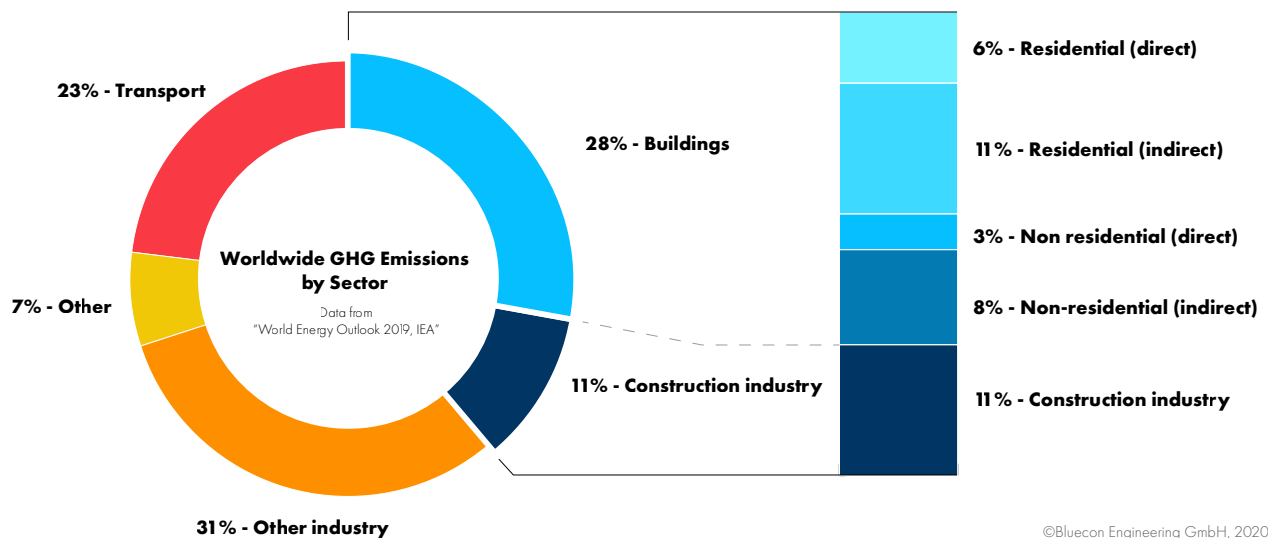
Climate forecast for 2050: The weather in Hamburg compares to San Marino. Humid and cold London is as warm and dry as Barcelona, the climate in Luxembourg corresponds to that of today's Montevideo.

A study from 2019 shows how, conservatively calculated, the weather will change until 2050. The summers and winters in Europe will be considerably warmer with an average increase of 3.5°C in winter and 4.7°C in summer, compared to the base year 2000.

Climate change is one of the greatest environmental challenges of our time.

Global warming due to anthropogenic greenhouse gas emissions will have serious environmental, social and financial consequences worldwide if the temperature level continues to rise.

Significant greenhouse gas emissions caused by the real estate sector are not only due to the use of buildings - operational emissions (Scope 1 & 2 GHG Protocol) - but also due to construction - embodied carbon (Scope 3). This also includes the emissions generated for maintenance, repair and replacement during the entire period of use as well as the emissions for dismantling and disposal.



To date, the real estate industry has mainly been concerned with the recording and reduction of operational carbon emissions through savings targets in local authority building codes and requirements in real estate rating systems (BREEAM, LEED, etc.). However, in order to understand the total greenhouse gas emissions of a building, it is necessary to record and evaluate both the expected operational emissions and the embodied carbon over the entire lifecycle of the property.

By combining these approaches, a holistic assessment and subsequent reduction of the complete, i.e. actual greenhouse gas balance of a building is possible. At present, the ecological rating of an asset is, for example in the form of an energy certificate, primarily evaluated by means of the energy consumption during operation of the building.

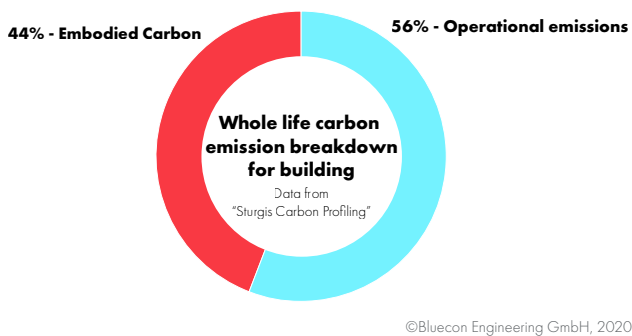
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Looking at the origins of the CO₂ taxation, it can already be foreseen today that the aforementioned holistic recording of greenhouse gas emissions will also be brought to the fore in the future by adapting applicable norms and standards. New regulations will lead to the fact, that measures which are currently being implemented and do not take the holistic approach into account could lead not only to additional costs due to refurbishments for further requirements but also rent reductions due to a competitive disadvantage in the market.

A practical example shows how improvements in planning and provisioning of refurbishments can be implemented by the industry:

A façade renovation is usually carried out by a complete renewal, i.e. the demolition and disposal of the old building fabric and the subsequent erection of the new façade construction. However, the fact that the refurbishments can be carried out much more efficiently in terms of construction costs and the energy life cycle of the overall product is demonstrated by the example of a curtain wall, which is merely placed in front of the existing facade.

There are almost no technical innovations necessary, and the insulation effect of the old façade is retained, which is extended and improved by the insulation value of the applied components. The well thought-out selection of the components, in regards to the value chain and the proportion of recycled material, also offers potential for saving large parts of embodied carbon without significant additional costs.



The decisive role of embodied carbon becomes apparent when considering the emissions of a property as a whole in accordance with the Scope 1,2&3 GHG Protocol. In order to take this decisive role into account, national legislators are already and will be discussing regulations that take up this topic. Anyone who, on the basis of these findings, selects suitable investment measures today will ensure that these measures also prove to be profitable in the long term.

About us

BLUECON is an innovative real estate consultant from Germany, Frankfurt am Main. We support our customers around the globe in the construction and real estate industry with planning, consulting and management services along the entire value chain of real estate and have made it our business to make new and existing properties futureproof.

We make #realestate #futureproof.

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