Morgan Lovell

FACT SHEET

Measuring embodied carbon: CarboniCa

What is embodied carbon?

Embodied carbon is the carbon dioxide (and other greenhouse gases) emitted during the extraction, manufacture, transportation and assembly of every material and product. It may include the maintenance, replacement, deconstruction, disposal and end-of-life aspects of the materials and systems that make up a product.

For example, the embodied carbon of plasterboard would include: the mining of the gyprock; its transportation to the factory; the manufacturing process of the boards; and their transfer to a construction site.

What is the CarboniCa tool?

CarboniCa is a carbon calculator developed by Morgan Sindall for use by our project teams. The tool allows visualisation, tracking and measurement of embodied carbon. Additionally it allows for predictive whole life carbon modelling. The purpose of the tool is to provide clear guidance on where projects are expending most carbon, thus enabling decisions that result in lower carbon outcomes.

The carbon calculator has been externally audited and verified by ARUP against the RICS Whole Life Carbon Guidance.

CarboniCa

How does the CarboniCa tool work?

The CarboniCa tool analyses all the materials and products that are installed during a project, calculating their associated embodied carbon. This includes the type of material, the quantity used, its design life and carbon intensity.

CarboniCa then requires an embodied carbon metric for each material. This is either a generic metric based on industry data for that product type, or if the products have an **Environmental Product Declaration (EPD)**, the carbon information can be inputted and the tool will report on actual embodied carbon data for that specific product.

The resulting client report suggests alternative construction methods or materials that have lower embodied carbon emissions and where they could be used.

Why is the CarboniCa tool relevant to fit out?

According to the UK Green Building Council (UKGBC), the built environment contributes around 40 percent of the UK's total carbon footprint. Of the buildings that will be in use in 2050, 80 per cent of them have already been built, so decarbonising existing stock through sustainable fit out will significantly reduce carbon emissions.

Reducing operation carbon in existing building stock will not help the climate crisis if large amounts of embodied carbon are expended as part of the fit out process. So any potential operation gains need to weighed against the embodied carbon required up front.

As climate change and low carbon targets are increasingly at the forefront of business agendas, many companies have set goals to reach net zero in line with the UK's ambition of 2050. The space in which we work has a major part to play in achieving these goals and therefore an ambition for low carbon fit out projects has become increasingly common.

The CarboniCa tool provides a verified and transparent approach to measuring and reducing the embodied carbon within fit out projects through a series of measures including the careful design and selection of materials.

UK Green Building Council, London

About Morgan Lovell

As office design and fit out specialists, we transform workplaces, bringing brands to life and inspiring a different way of working - so your teams can perform at their peak. Our approach to every project focuses on the long term, as we aim for results that protect and enhance the environment by reducing carbon emissions.

Morgan Lovell's company-wide commitment to low carbon and sustainability means we have reduced our own emissions by 64 percent since 2010, as we continue to work towards our net zero target by 2030. We work closely with each client and our supply chains to help them achieve their own low carbon goals.

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