

A social tool for evaluating the environmental impact of residential buildings

July 20 2018

The research group ARDITEC from the Higher Technical School of Building Engineering at the University of Seville has led a pioneering European project to calculate the environmental impact of residential buildings via the first open-source computing tool that can simply and intuitively calculate the CO2 emissions in each phase of a building project. The software will provide a global picture of the building's carbon footprint from its conception through every step in the construction process.

"The first step in managing and reducing the CO2 emissions associated with building construction is to calculate them, to know the importance of this environmental aspect, and apply measures to improve the situation. To better understand the [environmental impact](#) and work on it, it is important to measure the CO2 emissions from the design and conception of the building and, according to these measurements, know the possibilities for reducing the [carbon footprint](#) and making a more sustainable, low-carbon building," explains Jaime Solís, University of Seville teacher and head of the project.

The experts point out that it is vital to be aware of the CO2 emissions that are generated in the first phases of a project, so that early preventative actions can be taken by means of the choice of materials, means of transport, construction methods, use during the life of the building, deconstruction systems, reuse, etc., thus contributing to reducing the [building's](#) emissions.

"We have tried to work toward the concept of sustainable construction, also taking into account concepts related to the recycling and reuse of materials, and putting this tool at the disposal of all the agents involved in the construction sector, such as students, professionals and the users of the house themselves," adds Solís.

One of the applications of this online tool is that it allows for buildings of similar characteristics to be compared from an economic and environmental point of view, so knowing which of them is more sustainable and better respects the environment.

More information: Jaime Solís-Guzmán et al, Carbon Footprint Estimation Tool for Residential Buildings for Non-Specialized Users: OERCO2 Project, *Sustainability* (2018). [DOI: 10.3390/su10051359](https://doi.org/10.3390/su10051359)

Provided by University of Seville

Citation: A social tool for evaluating the environmental impact of residential buildings (2018, July 20) retrieved 14 August 2024 from <https://phys.org/news/2018-07-social-tool-environmental-impact-residential.html>

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