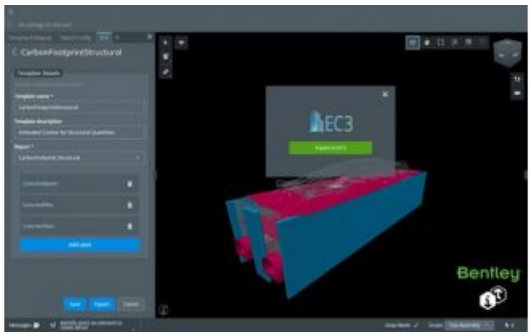
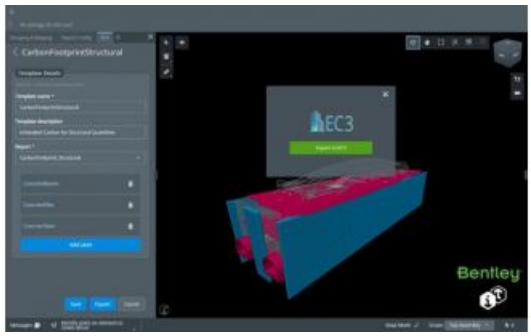
Bentley Unveils Integration of EC3 with iTwin Platform for Infrastructure Carbon Calculation





At COP27, Bentley Systems has announced expanded integrated workflows for embodied carbon calculation in the Bentley iTwin platform. The new integration enables carbon assessment in infrastructure digital twin solutions, empowered by the Embodied Carbon in Construction Calculator (EC3). Developed by the nonprofit Building Transparency, EC3 is a no-cost, open-access tool that allows benchmarking, assessment and reductions in embodied carbon, focused on the upfront supply chain emissions of construction materials.

Building Transparency provides the education, resources and tools – including EC3 – to address embodied carbon's role in climate change. The EC3 tool and its subsequent effect on the industry are driving demand for low-carbon solutions and incentivizing construction material manufacturers and suppliers to invest in disclosure, transparency and material innovations that reduce the carbon emissions of their products.

Rodrigo Fernandes, Bentley's director of ES(D)G – which stands for empowering sustainable development goals – said, "This new integration in Bentley's infrastructure digital twin platform exemplifies our strategy for empowering our users to achieve sustainable development goals. EC3 from Building Transparency is a perfect example of purpose-driven open, ecosystem collaboration, by which the private sector can come together to support and accelerate climate action."

Stacy Smedley, executive director of Building Transparency, said: "We are excited to now be part of the Bentley iTwin platform ecosystem. It is great that the integration is built upon an open-source framework – foundational for both EC3 and the iTwin platform. We see this integrated workflow as a significant opportunity for AEC companies, ISVs and digital integrators to link carbon analysis to infrastructure digital twins while ensuring complete control of their data, applications, and IP."

Simplifying and Accelerating the Generation of Carbon Reporting

The EC3 integration allows Bentley's infrastructure digital twin solutions, powered by iTwin, and third-party applications built on the Bentley iTwin platform, to simplify and accelerate the generation of carbon reporting and insights based on the no-cost, open-source EC3 carbon database and calculator. The Bentley iTwin platform is an open, scalable platform-as-a-service offering that enables developers to create and bring to market solutions that solve real infrastructure problems by leveraging digital twins.

Kaustubh Page, director of product management, iTwin platform for Bentley Systems, said, "We see the EC3 integration as a critical feature for the Bentley iTwin platform, further driving us toward the sustainability vision for the platform. We are delighted to see our users taking advantage of our Carbon Calculation Service on the Bentley iTwin platform to achieve carbon workflows such as reporting, project optioneering and optimizing material selection. We are glad to integrate an additional lifecycle assessment tool to unlock decarbonization workflows."

"Microsoft was the first large corporate user of the Embodied Carbon in Construction Calculator and is piloting the tool (hosted in Microsoft Azure) on its 17-building redevelopment project at its headquarters in Redmond, Washington, targeting an embodied carbon reduction of 30%. We are proud to be one of the early supporters of EC3 and, simultaneously, strategic

partners of Bentley Systems," said Katie Ross, global sustainability lead for real estate and facilities at Microsoft. "Seeing the EC3 tool and the Bentley iTwin platform converging is a great example of how we aim to accelerate sustainability through collaboration and demonstrates the power of data democratization."

Designers and sustainability engineers in the architectural, engineering and construction (AEC) industry spend a significant amount of time assessing or reporting on the environmental footprint of infrastructure projects, mainly when manually exporting and aggregating data from quantity counts and bills of materials. It can also be error-prone, requiring additional verification of successful ingestion by carbon tools. Moreover, AEC professionals do not want to be locked into one single carbon calculator as different calculators may provide different results (for instance, due to uncertainties in environmental product declarations), and carbon reporting and certification requirements differ as a function of the project, country or infrastructure owner.

Mapping/Grouping; Exporting quantities to EC3 from an infrastructure digital twin â€“ via the Bentley iTwin platform. (Courtesy: Bentley Systems)

Carbon Optimization in All Infrastructure Lifecycle Stages

The added integration with EC3 not only creates time savings with improved accuracy but also provides uncertainty estimations of the EPD data and increases carbon transparency due to Building Transparency's open-source/open-access strategy. Users can incorporate engineering data created by various design tools into a single view using the Bentley iTwin platform, generate a unified report of materials and quantities, and share it with different carbon analysis tools – now also with EC3 – via cloud synchronization.

One of the mutual users interested in this new integration is WSP, applying both the EC3 database and the Bentley iTwin platform on infrastructure projects such as the Interstate Bridge Replacement program. "For WSP, carbon footprint analysis and reduction are imperative in planning, designing, building and operating an infrastructure project from beginning to end," said Thomas Coleman, vice president of WSP USA. "Enabling better iTwin integration with EC3 is game-changing for us on multiple infrastructure projects. Implementing this link will significantly reduce the time and cost of generating EC3-based detailed embodied carbon analysis and reports along the design and construction stages. Ultimately, in the long run, we see this collaboration as one more step toward open, evergreen infrastructure digital twins, where carbon calculation and optimization are intrinsic and transparent in all infrastructure lifecycle stages across the entire value chain."

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