

Bentley Systems' New Carbon Analysis Capabilities Help Reduce Infrastructure's Carbon Footprint

Bentley makes carbon impact analysis a systematic part of the design process for new and existing infrastructure assets, simplifies embodied carbon reporting with added 3D visualizations

VANCOUVER (Bentley Systems' Year in Infrastructure 2024), October 9, 2024 – [Bentley Systems, Incorporated](#) (Nasdaq: BSY), the infrastructure engineering software company, today announced the general availability of new [Carbon Analysis](#) capabilities in iTwin Experience to assess and reduce carbon impacts for more sustainable infrastructure. The new Carbon Analysis capabilities enable infrastructure engineers to simplify carbon reporting, easily visualize embodied carbon, and rapidly explore alternatives for better designs.

Embodied carbon is the carbon footprint of an asset before it is built, encompassing the greenhouse gases emitted during the construction process. Bentley's new Carbon Analysis capabilities deliver a "cradle-to-gate" assessment of a design's carbon footprint, from raw material extraction until it leaves the factory's gate—which represent the largest contributors to embodied carbon.

"Between now and 2050, embodied carbon linked to new infrastructure, is projected to be responsible for half of the world's carbon footprint released—even before the infrastructure is used," added Savina Carluccio, executive director, International Coalition for Sustainable Infrastructure (ICSI). "Given its significant contribution to global emissions, the sector must act with urgency to reduce embodied carbon at scale, as part of wider decarbonization and climate action efforts—from leveraging a highly connected and collaborative value chain to using new digital technologies that enable the selection and use of alternative, carbon-efficient materials in sustainable infrastructure designs."

Bentley's new Carbon Analysis capabilities seamlessly integrate a user's design data with their chosen carbon assessment tool. This enables infrastructure professionals to link carbon footprints directly to their design choices and see those impacts dynamically change across design iterations.

"Carbon assessments should be standard practice for global infrastructure projects, but creating carbon reports isn't easy," said Chris Bradshaw, chief sustainability officer, Bentley Systems. "Using Bentley's new Carbon Analysis capabilities helps transform the tedious task of carbon reporting into a smooth, automated process—providing infrastructure professionals with greater visibility into carbon impacts and helping them design sustainable infrastructure faster and more easily."

Traditionally, producing a carbon analysis report is highly manual, time consuming, and costly, with multiple steps: organizing siloed data, translating the data into carbon metrics, and producing a final report. The process becomes even more difficult for large, complex infrastructure projects, which typically involve diverse stakeholders, datasets, data formats, and construction materials.

Bentley's new Carbon Analysis capabilities help overcome these challenges through:

- **Automated material quantification:** Automatically ingest and aggregate project and asset data, files, and models—created from Bentley software and other sources—into a digital twin, for a single, simplified view. By intelligently grouping common design elements and leveraging integrated workflows, automatically calculate the precise material volumes and

quantities missing from design files, eliminating estimations and out-of-date spreadsheets.

- **Easy reporting, every time:** With a single click generate a highly accurate cradle-to-gate embodied carbon accounting in minutes through integration with a user's chosen carbon assessment calculator. Since all data is dynamically stored, users can adjust material selections through the lifetime of a design, creating an easy, repeatable process.
- **In-content 3D visualizations:** Instantly see cradle-to-gate embodied carbon output as simple cloud-based heat maps in a live 3D digital twin model. This allows users to explore sustainable design and material alternatives in minutes to create higher-quality designs throughout the design and construction phase.

WSP, a global leader in environment and sustainability consulting, has been using Bentley's new Carbon Analysis capabilities through an Early Access Program, [launched last year](#).

Kelvin Saldanha, associate director, WSP, said, "In the past, there have been significant challenges when creating a carbon report for a proposed design. For example, the wide range of methodologies used to calculate embodied carbon made the process feel opaque. In addition, the process was time-consuming, as it required translating every detail into a full carbon evaluation. With Bentley's new Carbon Analysis capabilities, our design team has better transparency to calculate, analyze, and report meaningful carbon footprint impacts within any design change—in real-time with the click of a button, which has greatly reduced feedback loops from months or weeks to days."

Availability

Bentley's new Carbon Analysis capabilities are available immediately to iTwin Experience users at no additional cost. An additional license to a carbon assessment calculator (e.g., EC3 or OneClickLCA) is required, which can be obtained by users from those vendors directly.

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About Bentley Systems

Bentley Systems (Nasdaq: BSY) is the infrastructure engineering software company. We provide innovative software to advance the world's infrastructure – sustaining both the global economy and environment. Our industry-leading software solutions are used by professionals, and organizations of every size, for the design, construction, and operations of roads and bridges, rail and transit, water and wastewater, public works and utilities, buildings and campuses, mining, and industrial facilities. Our offerings, powered by the iTwin Platform for infrastructure digital twins, include MicroStation and Bentley Open applications for modeling and simulation, Seequent's software for geoprofessionals, and Bentley Infrastructure Cloud encompassing ProjectWise for project delivery, SYNCHRO for construction management, and AssetWise for asset operations. Bentley Systems' 5,200 colleagues generate annual revenues of more than \$1 billion in 194 countries.

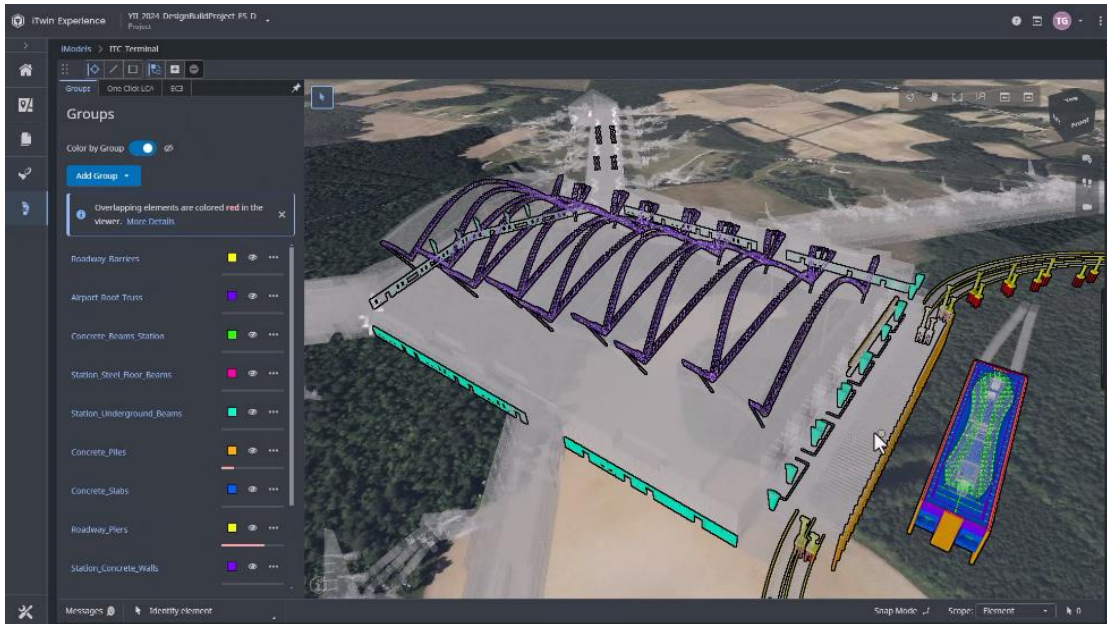
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Associated images:



Example of Bentley's Carbon Analysis capabilities: Embodied carbon grouping of common components for reporting (Photo: Bentley Systems)



Example of Bentley's Carbon Analysis capabilities: Embodied carbon visualization in an airport design (Photo: Bentley Systems)