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Total Carbon Data Analysis & Insights

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Learning Objectives

- Understand what Total Carbon is, Why it Matters and How it can be Analyzed as Part of a More Integrated Design Process
- Use Revit for Establishing a Basis for Total Carbon Analysis (Location, Quantities, Materials, Systems, Operations Data)
- Get Insights into Embodied, Operational and Total Carbon with Interactive Breakdowns and Tradeoffs
- View and Modify Data, Analysis and Insights to Meet Different Regional or Project Needs

Description

Buildings and Construction generate nearly 40% of Annual Global CO2 Emissions. Of that 40%, Building Operations account for 28%, while Building Materials and Construction (aka Embodied Carbon Emissions) are responsible for 11%. Achieving Zero Emissions in Operations requires a continued focus on Energy Efficiency, avoid the use of Fossil Fuels and use of Renewable Energy Systems. Unlike Operational Carbon Emissions which occur over the life of a building Embodied Carbon Emissions occur 'up front' and therefore play a bigger role in the Global Carbon Budget in the more immediate future. As such it is more imperative than ever that Architects and other projects stakeholders start to employ Total Carbon Analysis at all stages of every project. In this session you will join Autodesk Product Development and Impact Team members to learn about new Data, Analysis and Insights into Total Carbon to help make effective reductions as part of a more integrated, BIM based design process.

Speaker(s)

Ian Molloy
Ian Molloy is Senior Product Line Manager for MEP and Building Performance Analysis with the Autodesk Building Group. Ian has over 25 years experience in the AEC industry and the

development and application of software for the Design, Analysis and Optimization of Building Systems from Design to Operation. Ian has BSc. Eng Hons in Building Science and Mechanical Engineering and a degree in Mathematics. Ian is also a LEED Accredited Professional and Certified Scrum Product Owner. Based in Boston, Ian works globally with Autodesk business and software development teams, customers and partners all working towards helping the AEC industry make more buildings better with less financial and environmental cost.

Marta Bouchard
Marta is an engaged and hands-on project strategist, manager and designer, experienced with leading collaborative, cross-functional project teams to achieve high-performance design and sustainability goals. An effective and proactive communicator, she is passionate about integrating design concepts with analysis to offer strategic and pragmatic solutions. Marta is driven to enhance the human experience and drive sustainable change through innovative design and collaboration.

Excited by diverse teams and complex projects, Marta blends her human-centered environmental design knowledge with sustainable principles to inform and innovate beyond the architectural design process. Trained in design thinking, she leads with empathy, learns from data, and brings a positive energy to everything she does.

With over 16 years in the Architectural Design and Planning industry and consulting on a variety of projects, she offers environmental design analysis and project management expertise. Additionally, she brings experience in team leadership, business development and stakeholder management. She is an expert at providing LEED and WELL consulting services for commercial and institutional projects. Marta Bouchard is a LEED AP BD+C, WELL AP, holds a NCIDQ Certificate and a BS from Cornell University in Design and Environmental Analysis.

Corina Marinescu
Corina Marinescu is a Senior Product Owner at Autodesk, where she coordinates the development of the Next Generation Insight with a focus on Total Carbon. Corina is a member of the Order of Architects in Romania (OAR) and a certified BIM Manager with almost 10 years of experience in designing complex building projects in Romania and internationally. She has successfully graduated with a second Master’s degree in Global BIM Management at the University of Barcelona IL-3. Corina is also a founding member of TEC Cluster in Romania.

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Summary of Session References and Links to Further Learning Resources on Autodesk/Other Solutions

Understand what Total Carbon is, Why it Matters and How it can be Analyzed as Part of a More Integrated Design Process

https://architecture2030.org/why-the-building-sector/

https://www.fastcompany.com/90654991/these-are-the-5-biggest-trends-in-sustainability-according-to-al-gores-investment-firm

https://www.aia.org/resources/6676-aia-2030-commitment-by-the-numbers

https://www.gov.uk/government/publications/infrastructure-carbon-review

Use Revit for Establishing a Basis for Total Carbon Analysis (Location, Quantities, Materials, Systems, Operations Data)

About the Revit Energy Analytical Model

About the Energy Analytical Model Creation Process

Understanding the Energy Analytical Model

About Spaces in the Energy Analytical Model

About Surfaces in the Energy Analytical Model

About Creating the Energy Analytical Models from Architectural Elements

Autodesk Insight

A Quick Introduction to Insight & Revit's Energy Modeling and Analysis Tools

Learn everything about Autodesk Insight – Episodes 1-3

Insight How-to Video Collection

Revit Blog Post: Integrated MEP Systems Analysis with Revit 2020.1

Webinar - An Introduction to Revit Systems Analysis with Revit 2020.1

AU Class Recording - Revit Systems Analysis Features and Framework - An Introduction

AU Class Recording Revit Systems Analysis Features and Framework - Creating Custom Workflows

Webinar – AEC Collection Essentials: MEP Workflows

View and Modify Data, Analysis and Insights to Meet Different Regional or Project Needs

https://carbonleadershipforum.org/ec3-tool/

https://gbxml.org/

https://energyplus.net/

https://openstudio.net/

OpenStudio SDK User Documentation

OpenStudio Measure Writing Guide