Toward Net Zero
Your Guide to Designing High-Performance Buildings

Quick Facts

- 55% of the world’s population lives in cities, and that is expected to increase to 68% by 2050.
- Cities consume over two-thirds of the world’s energy and account for more than 70% of global CO2 emissions.
- Buildings generate 30% of these emissions.

Did You Know?

- The 2030 Challenge responds to climate change by setting goals to reduce greenhouse gas emissions. The report states that all new buildings and major renovations will be carbon neutral by 2030.

Advancing BIM projects with energy analysis integration

Leveraging the right software can help you accelerate building design toward net zero emissions.

Here is how OpenBuildings Energy Simulator can help you design high-performance buildings:

- **Enhance Comfort**
  - Perform whole building energy analysis using industry-standard EnergyPlus for dynamic simulation.

- **Model Building Performance**
  - Calculate HVAC, cooling, and heating requirements using industry-standard building load calculations (e.g., CIBSE Gain).

- **Accelerate Design with Predefined Templates**
  - Reference a catalog of predefined standard HVAC system templates, or import existing EnergyPlus systems, and create custom HVAC system templates using the EnergyPlus detailed approach or a simple tabular input workflow.

- **Optimize Energy Performance**
  - Model surrounding buildings to simulate the effect of their shade on design.
  - Perform solar analysis with shade and solar panel capacity and orientations.

- **Create Simulation Reports and Compare Scenarios**
  - Include heating and cooling loads, LEED compliance, annual energy use, equipment sizing requirements, and CO2 emissions.

- **Achieve Sustainability**
  - Integrate daylight factors, calculated using the industry-standard Radiance engine.

- **Improve Sustainability**
  - Integrate design factors, calculated using the industry-standard Radiance engine.

Learn More About OpenBuildings Energy Simulator

Sources: *UNDESA **C40 Cities ***USGBC ^Architecture 2030 © 2024 Bentley Systems, Incorporated. Bentley, the Bentley logo, GenerativeComponents, OpenBuildings, OpenBuildings Designer, and OpenBuildings Energy Simulator are either registered or unregistered trademarks or service marks of Bentley Systems, Incorporated or one of its direct or indirect wholly owned subsidiaries. Other brands and product names are trademarks of their respective owners.