ENNOWELL

Digital Twins

Empowering the Next Era of Net-Zero Carbon Buildings

According to ISO30173, Digital Twin technology is including simulation and optimization of buildings. Using IEA certified tool (Energy Plus) as core simulation engine, Digital Twin technology can enhance energy saving, environment comfort , and reduce users compliant. Through the integration of HVAC system, it can support the energy Saving and long term carbon neutrality.

The Advantages of Decarbonization with Digital Twins

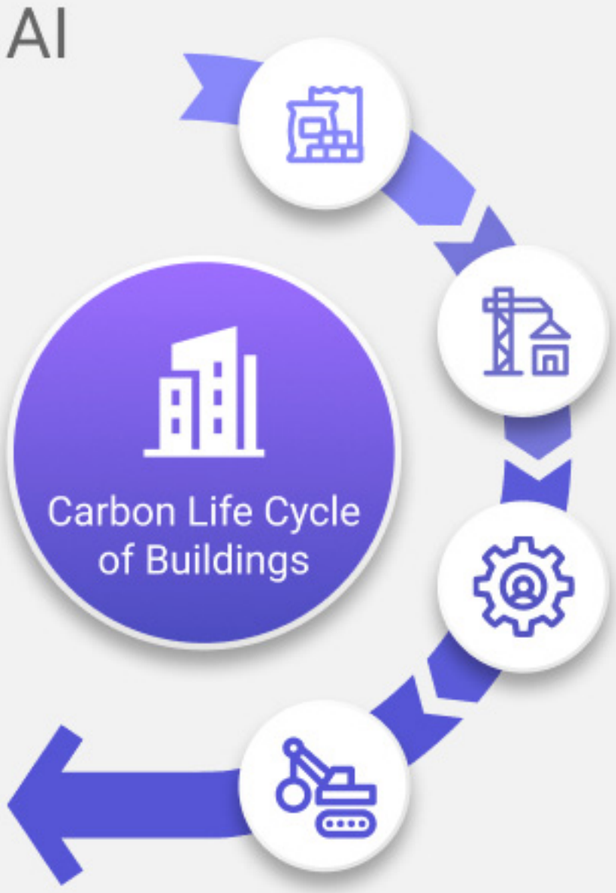
- Carbon simulation optimizes lifecycle costs and green procurement.
- Enhances building design and management processes.
- AI predicts building operation and maintenance risks.
- AI-Powered Predictive HVAC ControlMaximizes comfort and energy
- Improves management efficiency, saving time and labor costs.

EnnowellE-twins

Building Digital Twin driven AI

According to the UNEP, buildings contribute around 40% of global carbon emissions, with one-fourth being embodied carbon hidden in materials up to demolition process, while the remaining three-fourths comes from operational use.

Source : 2021 Global Status Report for Buildings and Construction, UN Environment Programme



Production
- Raw materials
- Transport
- Manufacturing

Construction
- Transport
- Construction/ installation process

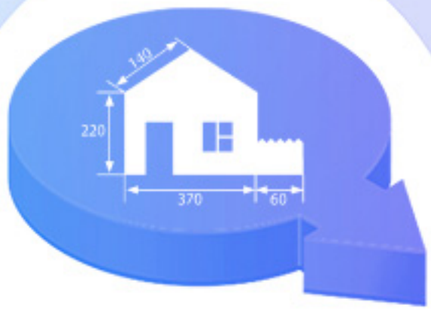
Operation
- Maintenance
- Repair
- Replacement

Operational carbon
Operational water and energy use

End of life
- Deconstruction
- Disposal and Transport

Embodied carbon

Our Building Carbon Management Platform utilizes digital twins simulation for long-term and short-term optimization strategies. It calculates and manages carbon emissions from materials, operations, and future emissions, enabling users to analyze carbon footprints and predict future emission reductions to ensure carbon neutrality across the building's lifecycle.



Design Phase

AI-driven material comparison quickly calculates carbon emissions and provides carbon footprint data.

Leverages an AI-powered Building Digital Twin to simulate building conditions and energy consumption, enabling optimized HVAC control.

Operation Phase

Future Carbon Management

Using digital twins and RCP and TMY emissions for buildings, providing optimal solutions for users.

The Benefits for Your Business

Reduce carbon report production by 50% yearly.

50% / yearly

Estimation over 80% carbon emissions across the lifecycle.

80% over

Reduce building electricity costs by 10%.

10%

Reduce average building energy consumption by 20 EUI (Kwh/m2.yr).

20EUI (Kwh/m2.yr)

Proven Cases

- New Taipei City Shulin Arts Center
- TSMC South, North, and Hsinchu Plant
- Tpark- Taipei Far Eastern Telecom Park
- Chiayi County Machouhou Industrial Park
- Huayou Factory of Foxconn Headquarters
- Medical Center of Hualien Tzu Chi Hospital
- New Taipei City Government Second Administration Center

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