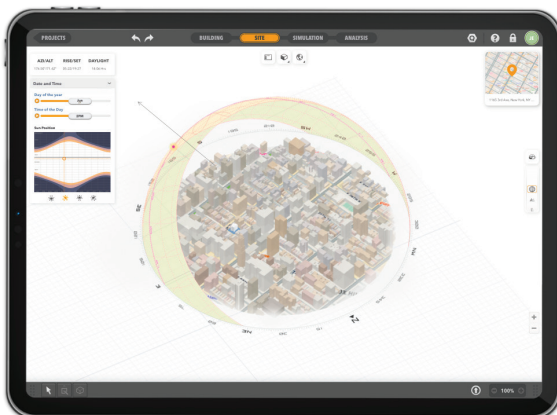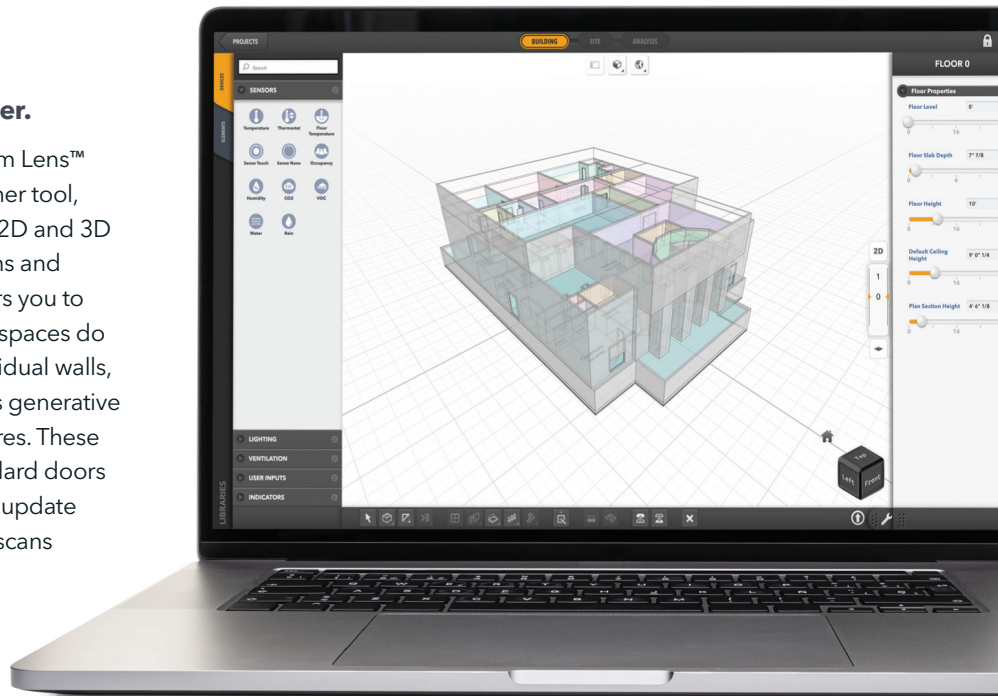**Functional Digital Twins. One Tool for Building Design and Simulation.**

PassiveLogic Building Studio

PassiveLogic® Building Studio™ simplifies the process of architectural building design, simulation, and site analysis using generative AI and physics-based digital twins. Every Building Studio project is built on a Quantum™ digital twin model, the open standard for the built environment. As a user designs their building, a physics-based Quantum model is generated that defines the building's geometry, material, spaces, equipment, and surroundings. This digital twin model represents building data that can be queried, simulated, analyzed, and controlled. In just minutes, stakeholders can create a building, add surrounding site context, run a climate simulation, inventory and track building components, simulate ESG performance, run deeper energy analysis, and access accurate real-time building insights. Finally realize true operational Building Information Modeling (BIM) via a seamless workflow within one comprehensive software application.
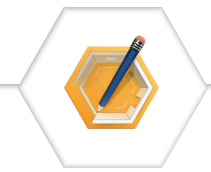
Easy to Design. Complete Projects 10x Faster.

Start by either scanning a building with our Quantum Lens™ mobile app, importing a CAD or BIM file from another tool, or drawing from scratch. Users can switch between 2D and 3D views to draw precise floor plans and visualize rooms and objects in space. The Building Studio app empowers you to design with an architect's approach and ask, "What spaces do I want to create?" Instead of manually drawing individual walls, users simply draw the rooms while Building Studio's generative design produces the walls and other building features. These include nominal wall thickness, the number of standard doors that fit a space, window paning, and more. Need to update the model later? Simply create new Quantum Lens scans or adjust the model as needed in Building Studio.

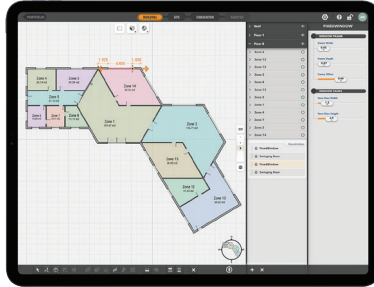## Site Generation + Simulation. In Just a Few Clicks.

Place your building anywhere in the world and instantly simulate energy usage in accordance with sun path dynamics and climate physics. The Building Studio app uses open-source data and physics-based Quantum technology to accurately simulate the effect of weather, climate, and surrounding city building terrain models, orders of magnitude faster than market benchmarks. Digital twin models update instantaneously as you adjust a building's physical location. The simulation can run on historical climate data anywhere in the world to assess potential site conditions.

PassiveLogic Building Studio

Generative Design. Your Personal Building Engineer.

As a building design comes together, generative design in the Building Studio app takes care of the details, such as how many doors can fit in a space or how thick the surrounding walls should be. Paired with the Qortex™ generative design tool, it can generate entire building designs based on natural language prompts regarding location, use case, and size. For example, you could type, "Design a building with two central, connected hexagon spaces with two rectangular wings on opposite ends." The Building Studio web app automatically generates a digital twin building meeting the design criteria.
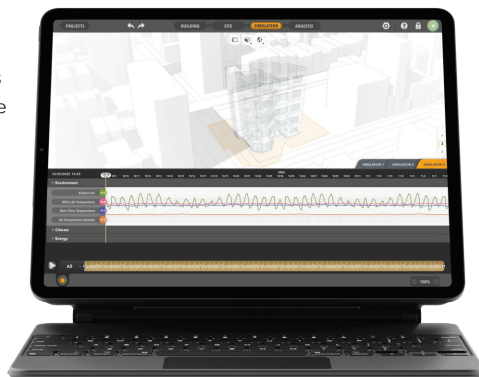
Quantum Digital Twins. Data for Everything.

Every Building Studio project is built on Quantum—the digital twin standard—making all models queryable using the Quantum Explorer® web app. For example, if windows are added to a building, the Quantum model tracks the number installed, their dimensions, and the total square footage of window surface. This level of data insight is available for everything within the model and updates as your design progresses.

Operational Real-Time BIM. Finally Possible.

BIM models are rendered obsolete even before building construction is completed due to their traditionally static nature. The Building Studio app, along with the PassiveLogic ecosystem, fixes this problem. It enables a Quantum-based digital twin building to function as a self-updating asset for the entire life cycle of the building it represents. The model viewed in the Building Studio app always reflects the most up-to-date information, as the PassiveLogic ecosystem continually syncs in real-time. It's time to disrupt the business of BIM.

Speed of Sketching
Emergent **BIM** Detail

Terrain and **City Analysis**
94%

Digital Twins
From the Ground Up

Ultra Fast
Rendering Engine

Site Analysis

Generative Design

Vegetation
Design

Interactive Terrain
Excavation

AI-Physics
Driven Design

Speech
to Architecture

QuantumSync
Team Collaboration
Digital Twins across the Life Cycle

Solar **Shading** Analysis

Parcel Utilization and **Planning**

Zero Setup
1-Click Simulation
Simulate any Building in 1 Second

Climate
Automatic Synthesis
Historical or Typical Meteorological Year

End-to-End **Site Management**

Thermal Load Calculations

Live BIM
Real-Time Updates

Operational
Insights and Controls

Operational BIM

Physical Simulation

Inference Engine
Physics-Driven AI Queries

World's Fastest Simulator
700 Million
Times Faster than Real Time

ESG
Made Real

Performance
Optimization

System Requirements
To run the Building Studio web app, you need an internet connection and a browser. Google Chrome is recommended.