Foundations of Digital Twins for Real Estate

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Online

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Introduction

This course covers the Foundations of Digital Twins for Real Estate, with a practical focus on how digital models and data can be used to understand real estate assets, monitor their performance, improve operations, and support decisions related to real estate development and investment.

The course helps participants understand the concept of a digital twin, how it differs from traditional models or engineering drawings, and how it can create an integrated digital representation of a real estate asset using operational, technical, and financial data. It also explains how digital twins can be connected with building management systems, sensors, maintenance records, and performance indicators to provide a clearer view of asset condition and improvement opportunities.

The course is structured progressively, starting with the core concepts of digital twins, then moving to their components, required data, and practical use in asset and facility management. It then explores how digital twins can support real estate development assessments and investment decisions. The program aims to build a practical understanding of digital twins as a management and analytical tool within real estate assets and projects.

Course Objectives

By the end of this course, participants will be able to:

- Understand the concept of digital twins and their applications in real estate.
- Differentiate between digital twins, 3D models, and building management systems.
- Identify the main components of a real estate digital twin.
- Understand the role of data in building and operating a digital twin.
- Identify the types of data required for real estate assets, including operations, maintenance, energy, occupancy, and cost data.
- Understand how digital twins connect with smart building systems and sensors.
- Use digital twins to monitor real estate asset performance and improve management.
- Recognize the role of digital twins in improving maintenance and facility management.
- Understand the relationship between real estate asset performance and operational and investment value.
- Explore how digital twins can support real estate development opportunity assessment.
- Prepare an initial concept for applying a digital twin to a real estate asset or development project.
- Understand key challenges related to data, cost, integration, and change management.



Course Outline

Day 1: Introduction to Digital Twins in Real Estate.

- Definition of a digital twin and its importance in real estate asset management.
- Difference between digital twins and traditional engineering models.
- Relationship between digital twins and smart buildings.
- Role of digital twins in understanding asset condition.
- Evolution of asset management from manual monitoring to digital models.
- Use of digital twins in property and facility management.
- Simple examples of digital twin applications in real estate.
- Introductory exercise on identifying components of a real estate asset that can be digitally represented.

Day 2: Data and Components of a Real Estate Digital Twin.

- Types of data used to build a digital twin.
- Core building data, including spaces, floors, units, and facilities.
- Operational data, including energy, HVAC, lighting, security, and safety.
- Maintenance data, failure records, and service history.
- Occupancy, usage, and user experience data.
- Data sources within the property and connected digital platforms.
- Importance of data quality and accuracy in digital twin success.
- Practical activity on classifying real estate asset data by use case.

Day 3: Operating Real Estate Assets Using Digital Twins.

- Using digital twins to monitor property performance.
- Tracking key operational indicators for real estate assets.
- Improving maintenance management through data and alerts.
- Understanding the relationship between recurring faults and operating costs.
- Using digital twins to improve energy consumption.
- Supporting facility management teams in faster decision-making.
- Simple analysis of an operational case inside a building using digital data.
- Practical activity on reading operational performance indicators and interpreting results.

Day 4: Digital Twins for Real Estate Development and Investment Decisions.

- Role of digital twins in assessing real estate asset potential.
- Analyzing opportunities to improve spaces and services within a property.
- Using data to identify development or repositioning opportunities.
- Relationship between operational efficiency and real estate asset attractiveness.
- Using digital twins to support preliminary feasibility studies.
- Understanding real estate project risks through data.
- Linking performance indicators to investment and development decisions.
- Case study on a real estate asset requiring improvement or developmen



Day 5: Preparing an Initial Digital Twin Implementation Concept.

- Steps for starting digital twin implementation within a real estate asset.
- Defining the purpose of using a digital twin.
- Selecting the essential data required for the first implementation stage.
- Identifying the teams responsible for providing data and operating the system.
- Selecting the indicators that should be monitored within the digital twin.
- Setting simplified implementation phases for gradual development.
- Assessing challenges related to cost, data, integration, and skills.
- Preparing an initial digital twin implementation plan for a real estate asset or development project.

Why Attend this Course: Wins & Losses!

- Understand the foundations of digital twins in real estate in a practical way.
- Learn how real estate data can be converted into a monitorable digital model.
- Improve the ability to read asset performance through indicators.
- Support operations and maintenance decisions using clear data.
- Understand the relationship between property management efficiency and future asset value.
- Identify improvement opportunities within existing assets before entering new projects.
- Use digital twins as a tool to support development and investment decisions.
- Improve coordination between asset management, facilities, operations, and development teams.
- Build an initial concept for digital twin implementation within the organization.
- Reduce reliance on manual monitoring or disconnected reports.
- Improve the ability to detect operational issues earlier.
- Keep pace with modern trends in real estate management and smart buildings.

Conclusion

This course provides a practical and structured introduction to the foundations of digital twins for real estate, with a focus on how data and digital models can be used to manage real estate assets and improve their performance. The course begins by explaining the concept of a digital twin and its role in representing a real estate asset digitally, then moves into the types of data required, their sources, and how they can be used to monitor operations, maintenance, and facility management.

The course also explains how a digital twin can help clarify the relationship between operational performance and real estate asset value and how it can be used to analyze improvement and development opportunities and support investment decisions. A digital twin is not treated only as a technical tool, but as a practical method for organizing data, improving management visibility, and supporting decisions related to assets and real estate projects.

Through the practical application on the final day, participants will prepare an initial concept for applying a digital twin to a real estate asset or development project, including required data, key indicators, implementation stages, and potential challenges.

By the end of the course, participants will have a clear understanding of how digital twins can be used in real estate management and smart buildings and how this technology can support operations, maintenance, development, and real estate investment in a more structured and data-driven way.

