

TRIVARSITY 2026 LIMASSOL

BIM and AI as Digital Intelligence for Sustainable AEC

Designing Data-Driven Urban Futures in Limassol

A Blended Intensive Programme funded by the European Union Erasmus+ Programme

Hosted by Frederick University, Limassol, Cyprus

Physical Mobility: 18-22 October 2026

Programme Overview

TRIVARSITY 2026 LIMASSOL is proposed as a short, intensive, collaborative design and digital construction workshop hosted by Frederick University in Limassol. It will bring together students and staff from architecture, civil engineering, BIM construction management, quantity surveying, sustainability and related AEC disciplines. The programme will use a real urban challenge in Limassol as the common project brief and will ask mixed international teams to develop integrated proposals through BIM-based collaboration, AI-supported analysis and performance-led design.

The proposed theme links two rapidly converging fields: BIM as the structured information environment for design coordination, simulation, cost, time and constructability, and AI as an emerging decision-support layer that can help students explore alternatives, interrogate data, test assumptions and communicate evidence-based proposals. AI is therefore positioned not as a substitute for design judgement, but as an assistant within a transparent, human-led BIM workflow. The TRIVARSITY 2026 LIMASSOL will extend the established BIM-centered workflow by adding AI-supported site analysis, option generation, model checking, design analytics, sustainability reasoning and presentation workflows.

Programme Focus: BIM + AI

Core Idea

The central academic question of the BIP is: How can BIM and AI work together to support integrated, sustainable and accountable AEC decision-making in an urban design and construction context?

Focus area	Application in the workshop
BIM as information structure	Teams will develop coordinated models, shared coordinates, common naming rules, schedules of areas, discipline coordination and federated model workflows.
AI as design and analysis support	AI tools will be used for rapid precedent research, prompt-based design framing, option comparison, design critique, code or brief checking, sustainability reasoning and communication support.
Performance-led design	Solar, daylight, wind, energy, carbon, cost and time information will be used to test design decisions rather than presented as late-stage illustrations.
Digital collaboration	The common data environment becomes the working space for BIM models, model exchanges, daily data drops, coordination issues, references, deliverables and team communication.

Proposed Design Challenge

Design challenge: Limassol Urban Futures | AI-Enhanced BIM for a Sustainable Mixed-Use District/Building

The selected study area in Limassol can be used as a real-condition testbed for integrated AEC thinking. Each student team will be asked to develop a proposal that combines urban strategy, architectural design, structural logic, environmental performance, cost awareness and construction sequencing. The precise site and functional brief will be confirmed.

Learning Outcomes

- Set up and contribute to an interdisciplinary BIM workflow within a common data environment.
- Use AI tools critically in early design research, option development, analysis and communication.
- Develop a coordinated architectural/urban proposal that considers structure, services, sustainability, cost and construction logic.
- Use simulation and model-derived information to support design decisions.
- Communicate a complex AEC proposal through models, drawings, posters, video/AV material and an evidence-based project narrative.
- Reflect on the limits, risks and responsibilities of using AI in design and construction education.

Digital Workflow and Tools

Workflow component	Suggested application
Common Data Environment	Autodesk Construction Cloud, MS Teams for files sharing, issues, daily data drops and coordination.
BIM authoring	Revit Architecture/Structure/MEP BIM tools. Each team should receive a base file with shared coordinates and naming standards.
Early-stage planning and analysis	Autodesk Forma/Insight, GIS/map data, climate data, massing models and rapid scenario testing.
Environmental performance	Solar, daylight, wind, energy and carbon checks, calibrated to the available time and software capacity.
Structural and constructability logic	Conceptual structural modelling, structural analysis tools where available, and buildability checks.
Cost and time awareness	Quantity take-off, cost plan logic, phasing/Gantt chart or work-package sequencing.
AI-supported workflow	AI chat tools, AI-assisted research/summarisation, prompt-based design review, model data interpretation and communication support. AI outputs must be checked and documented.
Final communication	Digital poster, short AV/video presentation, federated model screenshots and design process narrative.

Suggested Virtual Component

Thursday 01.10.2026	Prelude and project launch
Thursday 08.10.2026	BIM collaboration and data setup
Thursday 15.10.2026	AI, performance simulation and deliverables

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