CERIS: Civil Engineering Research and Innovation for Sustainability

REV@CONSTRUCTION – Digital Construction Revolution

Summary

The Project "Digital Construction Revolution – REV@CONSTRUCTION" aims to achieve the Digital Transformation of companies in the AEC sector, in order to promote their competitiveness and sustainable growth, as well as a strategic alignment with the sector at European level

The digital transformation of the construction industry is increasingly necessary to meet the challenges of competitiveness and productivity at international level. Currently, the AEC sector is highly segmented and has gaps in technological development that hinder its efficiency in relation to European markets.

Therefore, REV@CONSTRUCTION has defined objectives centred on the concern for increasing productivity, competitiveness and sustainable growth, from the design and construction phases to the exploitation phase. Therefore it will create the basis for a set of future innovations, attract new companies to the sector and bring about the emergence of new business models.

Rev@Construction proposes a transversal approach to the sector's value chain sustained on fundamental pillars of Research and Development:

–   Consistent methodological basis;

–   Partners with recognised and complementary technical and scientific knowledge;

–   Integrative management and coordination and strong links with industry, able to guarantee the adequate specification of problems;

–   Development oriented to the real needs of SMEs.

The final purpose of the R&D is the development of several digital tools connected to fundamental aspects of the sector, from the design phase, using BIM methodologies, through the process of manufacturing and placing concrete and bituminous mixtures that constitute the pavements, to the operation phase of the assets, supporting life cycle analyses of pavements and other civil engineering projects. These tools are intended to facilitate the introduction of the Digital Twin concept in the construction industry, using research in cutting-edge digital areas such as Augmented Reality, Sensorization, Big Data, or IoT.

For this transformation to be sustained, an entire cross-industry structure will be developed, which will deal with developing, digitalising and integrating the necessary industry bases, such as BIM object libraries, cost databases, and the platform itself that will support the tools developed within REV@CONSTRUCTION.

This structure is intended to enhance the mobilization of the AEC sector, as well as of technological SMEs, for this Digital Revolution in a systematized way and based on the interoperability of the products resulting from REV@CONSTRUCTION.

Project Reference

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Leading Institution

Teixeira Duarte (Portugal)

Partners

3Maps (Portugal), A400 (Portugal), Adão da Fonseca (Portugal), BIMMS (Portugal), BUILT CoLAB (Portugal), CASAIS (Portugal), Coba (Portugal), Cluster Mineral Resources (Portugal), engexpor (Portugal), INESC TEC – Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência (Portugal), Infraestruturas de Portugal (Portugal), Instituto da Construção (Portugal), IPQ – Instituto Português da Qualidade (Portugal), ISEL – Instituto Superior de Engenharia de Lisboa (Portugal), LNEC - National Laboratory for Civil Engineering (Portugal), MOTAENGIL (Portugal), IST – Instituto Superior Técnico (Portugal), UMinho – University of Minho (Portugal), FEUP – Faculdade de Engenharia Universidade do Porto (Portugal)

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Project Website

revconstruction.pt

TÉCNICO LISBOA