

Contribution to the Revision of the Portuguese Rules of Measurement Towards a Standardized BIM-Based Industry

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Abstract

The Architecture, Engineering, and Construction (AEC) industry has witnessed a transformative shift with the adoption of Building Information Modelling (BIM). BIM, offering a digital representation of a building's characteristics, enhances collaboration and reduces errors. However, integrating BIM with traditional measurement standards remains a challenge. This challenge is particularly pronounced in the Portuguese AEC sector, where aligning BIM with Portuguese Rules of Measurement is crucial for accurate quantity takeoff and cost estimation; however, this alignment is still in its early stages of development.

This dissertation addresses the crucial need for aligning BIM and the Portuguese Rules of Measurement, known as Curso Sobre Regras de Medição na Construção (CSRMC). It does so by analysing, discussing opportunities for improvement, and proposing guidelines to seamlessly integrate CSRMC with contemporary BIM practices in the Portuguese AEC industry. Developed in collaboration with LIMSEN Consulting, a prominent BIM consultancy firm, this research focuses on enhancing the standardization of quantity takeoff practices.

Beginning with a broad analysis of CSRMC guidelines, this dissertation assesses their potential for integration with BIM and identifies any existing limitations. Subsequently, a series of interviews with key industry figures sheds light on methods, challenges, and best practices for BIM integration. The research is further validated through two comprehensive case studies—one in architecture and structure, and the other in Mechanical, Electrical, and Plumbing (MEP). These case studies not only offer practical insights but also lead to the proposal of methodologies and solutions geared towards optimizing BIM-based quantity takeoff practices in the Portuguese AEC sector.

Dissertation:

Link for full text

Presentation video:

<https://youtu.be/aGnpRokoji4>

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