EXPERIENCE IN THE FIELD OF SUSTAINABILITY ENHANCED CONSTRUCTION CLASSIFICATION SYSTEM

Price	**Free (open access)**
Transaction	**WIT Transactions on The Built Environment**
Volume	**205**
Pages	**10**
Page Range	**15 - 24**
Published	**2022**
Paper DOI	**10.2495/BIM210021**
Copyright	

Author(s)

RODRIGO LIMA, FILIPA SALVADO, MARIA JOÃO FALCÃO SILVA, PAULA COUTO

Abstract

Currently, due to the increasing complexity of new buildings and the urgency to promote their economic sustainability, the Architecture, Engineering, Construction and Operation (AECO) sector faces the challenge of managing all the necessary information to fulfil its basic requirements. For this information management (e.g. control, organization, structuring, storage), the importance of using standardized construction information classification systems (CICS) is emphasized. In parallel, the use of Building Information Modelling (BIM) methodology is increasingly essential. In addition, there is a global challenge to rationalize the use of natural resources in line with the United Nations (UN) Sustainable Development Goals. As the AECO sector is one of the most demanding in terms of the use of these resources, there is an urgent need to develop production models that involve the sharing, reuse, repair, renovation and recycling of existing materials and products, thus extending their life cycle. The Sustainability Enhanced Construction Classification System (SECClasS) Project presents a solution that unifies these challenges. It proposes to develop and implement a CICS optimized for sustainability, based on the principles of Circular Economy, aiming to reduce construction and demolition waste (CDW), through the use of digital tools that help and promote the careful selection and management of products with less environmental impact. This paper describes the assumptions for the development of a Portuguese CICS (in accordance with SECClasS Project), that adapts classification systems already established at an international level, such as: (i) UniClass2015 (United Kingdom); (ii) OmniClass (North America); (iii) CCS (Denmark); (iv) CoClass (Sweden); and (v) CCI (Estonia, Czech Republic, Norway, Denmark, Sweden and Finland). International standards, such as ISO 12006 and ISO 81346, as well as the Action Plan for the Circular Economy defined by the European Union in 2020 are also analysed. This research work aims to obtain a CICS that streamline decision-making processes in AECO sector, reducing negative environment impacts and promoting sustainability.

Keywords

classification systems, *building information modelling (BIM)*, *standardization*, *sustainability*, *circular economy*

Eco-Architecture 2022

12–14 July 2022

Lisbon, Portugal

Other papers in this volume

GREEN BUILDING DESIGN AND ASSESSMENT WITH COMPUTATIONAL BIM: THE WORKFLOW AND CASE STUDY

EXPERIENCE IN THE FIELD OF SUSTAINABILITY ENHANCED CONSTRUCTION CLASSIFICATION SYSTEM

TOWARDS SUSTAINABLE BUILDINGS USING BUILDING INFORMATION MODELLING AS A TOOL FOR INDOOR ENVIRONMENTAL QUALITY AND ENERGY EFFICIENCY

VIRTUAL REALITY STORIES FOR CONSTRUCTION TRAINING SCENARIOS: THE CASE OF SOCIAL DISTANCING AT THE CONSTRUCTION SITE

CHANGING LEARNING LANDSCAPE: FROM CAD TO BIM AND BEYOND

IMPLEMENTING COMMON DATA ENVIRONMENTS IN ARCHITECTURAL TECHNOLOGY STUDIES

CONCEPT DEVELOPMENT FOR ADOPTING 5D BIM IN SMALL AND MEDIUM-SIZED ENTERPRISES OF THE AEC INDUSTRY