Rapport de veille n° 49

BIM

31/07/2023

Objectif : *L'utilisation du BIM en phase de conception et de ses potentiels applications pour la prévention des risques*

La validation des informations fournies (exactitude, fiabilité, pertinence par rapport aux principes de prévention, etc.) est du ressort des auteurs des articles signalés dans la veille. Les informations ne sont pas le reflet de la position de l'INRS.

Les liens mentionnés dans le bulletin donnent accès aux documents sous réserve d'un abonnement à la ressource.

Table des matières

1. Références anglophones

1.1 Articles scientifiques

BIM-based smart safety monitoring system using a mobile app: a case study in an ongoing construction site

MM Hossain, S Ahmed, SMA Anam, IA Baxramovna… - Construction Innovation, 2023

DOI : https://doi.org/10.1108/CI-11-2022-0296

Construction safety is a crucial aspect that has far-reaching impacts on economic development. But safety monitoring is often reliant on labor-based observations, which can be prone to errors and result in numerous fatalities annually. This study aims to address this issue by proposing a cloud-building information modeling (BIM)-based framework to provide real-time safety monitoring on construction sites to enhance safety practices and reduce fatalities. This system integrates an automated safety tracking mobile app to detect hazardous locations on construction sites, a cloud-based BIM system for visualization of worker tracking on a virtual construction site and a Web interface to visualize and monitor site safety. The study's results indicate that implementing a comprehensive automated safety monitoring approach is feasible and suitable for general indoor construction site environments. Furthermore, the assessment of an advanced safety monitoring system has been successfully implemented, indicating its potential effectiveness in enhancing safety practices in construction sites.

1.2 Conférence / ouvrage / thèse

Innovative Integration Of Modern Technologies For Health And Safety Decision Making In The Construction Industry [PDF]

A Ganah, G John - 2023CIBW099W123 2023, Proceedings, Universidade Porto – FEUP, 21/22 June 2023, 10 p.

Health and Safety (H&S) has been one of the key issues in the design and implementation of projects within the construction sector. At the design stage of a project, usually designers are accused of failing to appreciate most of the construction processes that will optimise safety and minimise cost. Therefore, clients and other stakeholders are apprehensive as to whether the designer's input should be fully integrated through other known ways. Also, within a continuation in the downstream end (i.e., construction and facilities management) professional processes used are not fully appreciated by designers. As such these sets of practitioners need to learn fully from each other and integrate their knowledge and skills to close the existing knowledge gap among practitioners. Modern technological innovations have given us new ways of understanding and finding solutions to such existing problemswith most professionals working in a collaborative way. Such collaborative ways can enhance learning and cross pollination of professionals within an organisation and across organisations. However, the evidence through data collection is not captured across projects. This conceptual paper aims to integratemodern Artificial Intelligence (AI) and other software applications (such as BIM, IoT, and Digital Twins)to be used within the construction industry setting to understand and augment the learning of all practitioners. An exploratory qualitative research approach through literature review is used in the development of the conceptual framework for the implementation of H&S management that will inform future detailed developments of this proposed innovative approach.