Approach to identification and characterization of the new and emerging risks associated with Industrial Green Building

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Abstract

The subsector of industrial building has undergone changes in recent years. These have been: economic changes, as a result of the economic crisis experienced by the construction sector, structural changes because many companies specializing in industrial construction have disappeared, regulatory changes by the emergence of new requirements and functional changes because industrial establishments have become an image of the brand or company. These changes have led to the emergence of new risks to the safety and health of workers or have increased existing risks, assuming an increased exposure or severity of the effects on workers. These risks are referred to as new and emerging risks.

The aim of this communication is to carry out an approach to identification and characterization of new and emerging risks in the industrial green building subsector.

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1. Introduction

Technological development and new production systems, the complexity of the organization of enterprises, new regulations, economic and social conditions, as well as the cost and time requirements of owners, tend to modify workplaces, where in addition to the traditional labor risks appear other risks, denominated new and emerging risks (NERs).

EU-OSHA [1] defines NER as any occupational risk that is both new and increasing. The risk means “new” if:

- C1. The risk was previously unknown and is caused by new processes, new technologies, new types of workplace, or social or organizational change; or,
- C2. A long-standing issue is newly considered as a new risk due to a change in social or public perceptions; or,
- C3. New scientific knowledge allows a long-standing issue to be identified as a risk.

The risk is “increasing” if the:

- C4. The number of hazards leading to the risk is growing; or
- C5. The likelihood of exposure to the hazard leading to the risk is increasing (exposure level and/or the number of people exposed); or
- C6. The effect of the hazard on workers’ health is getting worse (seriousness of health effects and/or the number of people affected).

International and national labor safety agencies have determined the importance and necessity of research on NERs and their inclusion in new prevention models [2-4]. In Spain, one of the objectives of the Spanish Strategy on Occupational Safety and Health in the period 2007-2012 is research, development and innovation oriented towards the knowledge of new and emerging occupational risks, anticipation and prevention [5].

These governmental initiatives have led to the development of many research in the field of NER, such as the works of Bartolomé et al.[6] on emerging psychosocial risks at work and from Brocal and Sebastian [7, 8] who developed a methodology for the identification of NER in advanced industrial manufacturing processes.

In the construction sector, Sanz Albert [9] carried out a bibliographic study on emerging risks, identifying five scenarios of emerging risks:

- Green employment and waste management in construction.
- The aging of the active population in construction.
- Combination of psychosocial risk factors and physical risk factors in construction.
- New knowledge about the consequences of exposure to chemical agents in construction.
- Increased natural hazards in construction: solar radiation.

The subsector of industrial building has undergone changes in recent years. These have been: economic changes, as a result of the economic crisis experienced by the Spanish construction sector, structural changes because many companies specializing in industrial construction have disappeared, regulatory changes by the emergence of new requirements and functional changes because industrial establishments have been become an image of the brand of the company.

These changes have led to the emergence of new risks to the health and safety of workers or have increased existing risks, implying an increase in the exposure or severity of the effects on workers, i.e. have been developed new and emerging risks.

The aim of this communication is to carry out an approach to identification and characterization of new and emerging risks in the industrial green building subsector.

2. Methodology

The study methodology is structured in two steps. First a bibliographic analysis identifies the regulations that affect industrial building and the activities potentially generating NER. Secondly a risk characterization is produced according to the models collected in the works of Brocal and Sebastián [7-8].
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