

OWLlinks is brought to you by the Workplace Safety and Health (WSH) Institute to enable leaders and professionals to keep abreast of the latest WSH developments and trends from around the world.

SPOTLIGHT

WSH Institute Forum on "Maximising Returns through WSH Innovations"



About 200 participants attended the event held at the NTU@One North Campus on 30 Jan 2013. Participants, mainly WSH professionals, were updated on WSH Innovations to help them work more effectively and efficiently.

An International Expert from Safe Work Australia, Mr Richard Webster presented on the cost of work-related injuries and illnesses, which amounts to 4.8% of the Australian GDP. We also had Ms Heidi Tan from Tan Tock Seng Hospital who shared on the importance of an ergonomics program within an organisation as well as some tips on maintaining good postures at work.

Other highlights included a presentation on the use of the mobile application SNAP@MOM by Ms Patricia Chen from MOM and Ms Peggy Heng from WSH Institute gave an engaging live demonstration of the Institute's first ergonomics mobile application - ergo@WSH (previously called ergo@work).

[View the presentation slides in our website here.](#)

Articles Reviewed In This Issue:

1. The influence of supervisor leadership practices and perceived group safety climate on employee safety performance

2. E. I. DuPont De Nemours Co. fatal hotwork explosion

3. Building Information Modeling (BIM) and safety: Automatic safety checking of construction models and schedules

4. Building information modeling (BIM): Benefits, risks and challenges

1. Title: The influence of supervisor leadership practices and perceived group safety climate on employee safety performance

Date of publication: April 2012

Source: Volume 50, Issue 4, Safety Science

Author: E.A. Kapp

Synopsis:

Past studies have shown that supervisory leadership styles and practices have a tremendous impact on safety related-behaviours of their employees. Two particular styles have garnered great interests: transactional and transformational (Bass, 1985). This study, done through a survey questionnaire, was carried out on 402 employees from two Manufacturing companies and 153 Construction contractor employees in the United States. It attempted to examine the effect of the two styles of leadership - transactional (contingent reward leadership) and transformational leadership in the context of the organisational safety climate, and the impact it has on the employee safety performance. Results from the study showed that under a positive safety climate, both styles of leadership were associated with greater reported levels of safety compliance and safety participation behaviour while no improvement was noticed under a non-positive climate group.

To read more, [click here](#) [Access via publisher's website]

2. Title: E. I. DuPont De Nemours Co. fatal hotwork explosion

Date of publication: April 2012

Source: Completed Investigations, U.S. Chemical Safety Board

Author: U.S. Chemical Safety and Hazard Investigation Board

Synopsis:

This report details the findings from the investigation of the 9 Nov 2010 explosion at the E.I. DuPont de Nemours and Co. Inc., Yerkes chemical plant in Buffalo, New York. In this hot work incident, a contract welder and foreman were repairing the agitator support on top of a storage tank when an explosion occurred. The welder died instantly from blunt force trauma, while the foreman suffered first-degree burns and minor injuries. The investigation revealed that flammable vinyl fluoride vapour was present in the tank when the hot work was carried out, which could have been ignited by sparks or the heat from welding. The investigation concluded that the primary cause of the blast was the failure of the company to ensure that the storage tank was free of flammable vapour prior to commencement of hot work.

To read more, [click here](#).

3. Title: Building information modeling (BIM): Benefits, risks and challenges

Date of publication: Feb 2008

Source: Associated Schools of Construction

Author: Salman Azhar, Michael Hein and Blake Sketo

Synopsis:

Building Information Modeling (BIM) refers to a computer-generated model that enables users to visualise a proposed building or facility by simulating various stages of its planning, design, construction and operation.

It can assist various stakeholders involved in the building project to identify potential constructional and operational problems. Other benefits of BIM application include: efficiency in processes, cost savings and lifecycle data. The savings, efficiency and return on investment were illustrated in the case studies cited in the article.

A number of risks were discussed. Among them is the issue of data ownership, which is also linked to the responsibility in data collection and entry. Proprietary information provided by various parties/vendors for the design needs to be protected. As BIM is a closely integrated program, in the event of a design error, it might also pose additional difficulties in determining the party responsible.

To read more, [click here](#)

4. Title: Building Information Modeling (BIM) and safety: Automatic safety checking of construction models and schedules

Date of publication: January 2013

Source: Volume 29, Automation in Construction

Author: Sijie Zhang, Jochen Teizer, Jin-Kook Lee, Charles M. Eastman, Manu Venugopal

Synopsis:

Safety planning in the construction of buildings is usually done separately from project execution planning. It is also largely dependent on human inputs or semi-automated implementation. This has resulted in inadequate and ineffective early identification of safety hazards.

The paper outlined a framework for automated rule-based system that integrates safety with Building Information Modeling (BIM). An algorithm based on fall protection and other construction best practices in safety and health contributes to the safety check routines of the system.

The system can analyse a building model for early hazard identification and suggests preventive measures as the project progresses. As the preventive measures can be visualised in BIM, it would enable better decision-making and awareness for various parties involved in the construction project.

To read more, [click here](#) [Access via publisher's website]

Other Useful Resources:

- Human factors that lead to non-compliance with standard operating procedures (Health and Safety Executive, UK)
- Building information modeling (Digital Building Lab@ Georgia Tech)