

## Changes to the Programme (3 February 2010)

### Changed abstract text

Thursday 10 February  
17.00 – 17.15

Session 4: Management and good practices – Better health and safety

The impact of occupational safety management practices to construction site risk score

*Gürcanlı GE, Celikoglu HB, Turkey*

### New abstracts

*Poster Plenary I*

No 28

Effect of the renovation of the HVAC systems on symptoms and productivity in office work – An intervention study

*Kekäläinen P, Niemelä R, Reijula K, Tuomainen M, Kemppilä S, Seppänen O, Palonen J, Riuttala H, Nykyri E, Finland*

No 29

Happy Worker Game; a serious game for company leadership

*Joling CI, Wiezer NM, Bakhuys Roozeboom MC, de Kraker H, the Netherlands*

Poster plenary II

No 48

Well-being at work and sense of coherence in art educational context

*von Brandenburg C, Finland*

## **The Impact of Occupational Safety Management Practices to Construction Site Risk Score**

Gürkan Emre Gürcanli, Technical University of Istanbul Civil Eng. Dept.  
Construction Management Division  
Hilmi Berk Celikoglu, Technical University of Istanbul Civil Eng. Dept.  
Transportation Division

The paper aims to discuss empirical research to put forward the relationships between the safety management practices and risks which workers expose to on the construction sites. A number of independent safety management items, as independent variables, have potential impacts on safety procedures, daily practices and risk score of the site. A questionnaire survey was utilized for facilitating the collection of information about the safety management practices from fifty-four construction sites. Additionally, on-site investigations were performed to assess the risk score of the sites, using a checklist to assess the safety measures to prevent ten most prominent construction accidents observed on construction sites. The model was tested by the aid of structural equation modeling and the affects of the safety management items, such as employee involvement, contractor-subcontractor communication, hazard analysis and risk assessment, safety plans/programs implementation to the construction site risks were revealed.

## **Effect of the renovation of the HVAC systems on symptoms and productivity in office work – an intervention study**

Kekäläinen P<sup>1</sup>, Niemelä R<sup>1</sup>, Reijula K<sup>1</sup>, Tuomainen M<sup>2</sup>, Kemppilä S<sup>3</sup>, Seppänen O<sup>2</sup>, Palonen J<sup>2</sup>, Riuttala H<sup>1</sup>, Nykyri E<sup>1</sup>

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The aim of the study was to investigate the effects of the renovation of the HVAC system on symptoms, perceived environment and productivity in an office building. The measurements of indoor environment parameters, perceived environment and productivity were conducted during two successive summers. Two floors of the office building were renovated during autumn and wintertime. The renovation included cooling the supply air, installing cooling ceilings in half of the office rooms, distributing supply air to all office rooms as well as, renewing the lighting and redecorating the interior surfaces. An indoor air questionnaire assessing current symptom intensity including questions about self-estimated work efficiency was presented to the employees on five days each summer. The measurements performed during summer before the renovation showed that indoor temperatures raised above thermal comfort levels (maximum temperature 31.4°C). When the temperature rose above 25°C, neurobehavioral symptoms and the dissatisfaction with the IAQ increased clearly and self-estimated work efficiency decreased statistically significantly. After the renovation, thermal indoor comfort was achieved and the dissatisfaction with the temperature and IAQ remained at 2 – 4%. Objective productivity measurements performed with limited number of employees showed a 4.4% improvement of work efficiency in summertime.

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## **Happy Worker Game; a serious game for company leadership**

C.I. Joling, N.M. Wiezer, M.C. Bakhuijs Roozeboom, H. de Kraker (1)

1: TNO Quality of Life | Work and Employment, the Netherlands

### *Background and aim*

Company leadership will be better able to take efficient preventive actions to promote employee wellbeing if they would be able to 'experience' the complexity of the problem and the effect of the interventions. In this project a Serious Game (the Happy Worker Game) will be developed with which leaders will be able to experience this complexity, as well as the effect of their own actions. They can experiment with different interventions and be able to see the effects (short term and long term) of interventions.

### *Methods*

The game will be developed based on a scientific model in which determinants and effects of work related stress and work engagement will be integrated. Both a process and an effect study will be conducted among end users, in order to gain insight in its effects on health and productivity, as well as the working mechanisms of the game.

### *Results and conclusion*

The theoretical model is more concrete than existing models and contains employee-level operationalizations of all concepts. A translation of the model into formal language will reveal inconsistencies and ambiguities in theories that underlie the model, which will cause 'bugs' in the game. All relevant elements of the game are explored in an extensive mind map. All relations between these elements will be incorporated in the game.

## **Well-being at work and sense of coherence in art educational context**

von Brandenburg C, School of Art Education, University of Art and Design Helsinki, Finland  
(Aalto University from 1.1.2010)

According to the current Finnish Government's programme in Health Promotion culture and art can provide one possibility to increase well-being in different aspects of life. The programme includes also the aspect of well-being at work. The new research results show that culture and artistic activities are promoting health in multiple ways.

Antonovsky states that resistance resources against stressors can be defined by the concept of the Sense of Coherence (SOC) and by its three components: comprehensibility, manageability and meaningfulness. The SOC is a valuable approach for health promotion as it promotes a positive subjective state of health. Correlations of salutogenic concept and SOC have been studied in the context of quality of life (QoL). Strong SOC shows strong general health behaviour. High levels of SOC indicate also stronger feeling of social integration.

Artistic process and art experiences can promote personal flexibility and coping with stress. In art educational context, artistic activities can enhance learning, tacit knowledge, and empowerment. Art experiences are connected to inner reflection of an individual.

The paper will present Antonovsky's salutogenic orientation enhancing well-being at work, especially in connection to art educational framework. The study is part of doctoral studies at the School of Art Education in University of Art and Design Helsinki (Aalto University from 1.1.2010).