

SAFETY OBSERVATION IN DAILY USE

1. Case metadata

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2. Organisations involved

Skanska Finland

3. Description of the case

3.1. Introduction

The accident rate in the construction sector is higher than in any other sector in Finland. Skanska Finland is operating as a main contractor in construction sites, being therefore responsible for safety at shared workplace and for its own Skanska workers. Planning for safe working conditions is embedded in all planning phases. The last planning phase is called method statement or task planning. It covers such safety issues as job hazards, use of safe working platforms, tools and personal protective equipment.

One of the problems at construction sites is that working conditions and hazards change every day. Experience has shown that it is difficult to identify all job hazards in task planning. Some hazards arise only after the work has started; perhaps because of deficiencies in planning, changing weather conditions, hazards caused by other groups of workers, etc. There was a continuous need for worker vigilance and activeness in hazard identification and response in construction sites. Large projects usually faced the problem of delivering information on job hazards to site management. Lack of necessary information flow prevented corrective action and learning. The use of safety observation cards had helped overcome this problem.

3.2. Aims

The aim of Skanska Finland was to prevent construction accidents at worksites, by means of promoting workers safety awareness, corrective action, communications and learning whenever hazards or near-miss incidents were identified, so that safety could be communicated in a positive way to all parties at the construction site.

3.3. What was done, and how ?

Skanska Finland, as the main contractor, provided information on site safety rules, including the use of safety observation cards to every new worker entering the construction site. The use of safety observation card was instructed either personally, or by means of a powerpoint presentation or a DVD-video. Each worker received a 10-page-block of safety observation cards which fitted in a pocket. The block also included a short user manual which encouraged workers to identify a hazardous condition or a near miss incident, write down their observations and pass their cards to Skanska supervisor or post box. Every worker was free to decide whether he wished to add his name on the observation card or not.

The safety observation card was meant to be as easy as possible to use. There was a fixed list of the most common hazards on building and civil construction sites. The identified hazard could be selected with just a tick, and the user could also add other hazards if necessary.

After identifying the hazard, the worker was advised to tick a suggestion for improvement. Suggestions could be selected out of a fixed list or added at the end of the list if necessary (see figure 1).

Figure 1. An English version of the safety Observation Card

Hazards – one to be picked	Corrective actions – one to be picked
<input type="checkbox"/> Walkways, traffic lanes, ladders	<input type="checkbox"/> Planning
<input type="checkbox"/> Machines, tools, scaffoldings	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Railings, openings, excavations	<input type="checkbox"/> Work methods, procedures
<input type="checkbox"/> Electricity, lightning	<input type="checkbox"/> Unambiguous goals
<input type="checkbox"/> Housekeeping, waste management	<input type="checkbox"/> Communication
<input type="checkbox"/> Working technique, ergonomics	<input type="checkbox"/> Responsibility, authority
<input type="checkbox"/> Liftings, lifting devices	<input type="checkbox"/> Training, induction
<input type="checkbox"/> Risk taking, personal protective equipment	<input type="checkbox"/> Other, specify
<input type="checkbox"/> Civil construction, tunneling	
<input type="checkbox"/> Other, specify	

Ilmoitus	Osoitus	Korjauksen toteutus	Muuta
Väärä ajoneuvo ajelu Tönnöttäminen, tönnöt Koneet, välineet Aukeat, halkeat Sähkö, valaistus Käsitöiden, työvälineet Koneiden, välineiden säilytys Aineiden, nesteiden säilytys Koneiden, välineiden säilytys Muu riski	Rakennustöiden laatu Suunnittelu Koneiden käyttö, ylläpito Työ- ja menetelmät Samat menetelmät kaikille Tiedonvälitys Työ- ja menetelmät Koulutus Muu riski	<input type="checkbox"/> toteutettu <input type="checkbox"/> osittain toteutettu <input type="checkbox"/> ei toteutettu	Nimi ja työnantaja (sopimustilaisuus)

Source: Skanska Finland

On the flipside of the card there was a free-text field for any notes the worker would like to make. The following information was advised to be filled in:

1. What?
2. Where?
3. How and why?

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4. Who/to whom?
5. Consequences?
6. Suggested action?

The card was then forwarded to Skanska supervisor who would go through the observation and give immediate feedback to the worker either personally, or during the site weekly meeting where all workers participated. Finally, the supervisor recorded the observation in an intranet-based safety information system, determined the risk factor of the observation and reported actions that were taken. Usually, small or medium risks were managed in construction site itself, whereas severe risks or near miss incidents were handled in terms of both construction site and corporate level.

The safety information system generated an automatic e-mail notification to site construction manager and Skanska safety personnel. The e-mail could be easily forwarded to sub-contractors or other parties involved. Every construction site had its own web-based scorecard which helped monitoring the number of observations that had taken place, as well as their content. Furthermore, the database offered opportunities to analyse company-wide safety problems, provided that the number of observations reported was significant.

As an example, it is worth mentioning that there were dozens of safety observations concerning stepladders and other working platforms at height below 2 metres in 2005. Analysis of safety observations, made it obvious that there was a need to create a new company standard regarding working platforms. Finally, a new standard was set up, reducing the number of accidents due to poorly designed working platforms.

Moreover, a considerable number of safety observations in the safety information system allowed the analysis of data in several different ways. It was possible for example to identify the hazards distributed to different building types such as hospitals, warehouses, apartments, terrace houses, bridge works, etc. or otherwise, to a certain period of time (e.g. winter) (figure 2).

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Figure 2. Analysis of safety observations in hospital construction sites of Skanska Finland, 2005-2007



Source: Skanska Finland

Corporate level observations were discussed in safety managers' meetings every two weeks. Any individual observation that contributed most towards the identification of a severe hazard was published in Skanska's safety bulletin that was printed out 1-2 times per month (figure 3). This was meant to promote company-wide experience concerning near-miss incidents.

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Figure 3. Skanska Safety Bulletin 2/2008 for safety information distribution, including safety observations

Safety observation: Near miss incidents

Safety observation: Fall from a hollow core slab

Safety observation: Danger from an urethane foam

Source: Skanska Finland

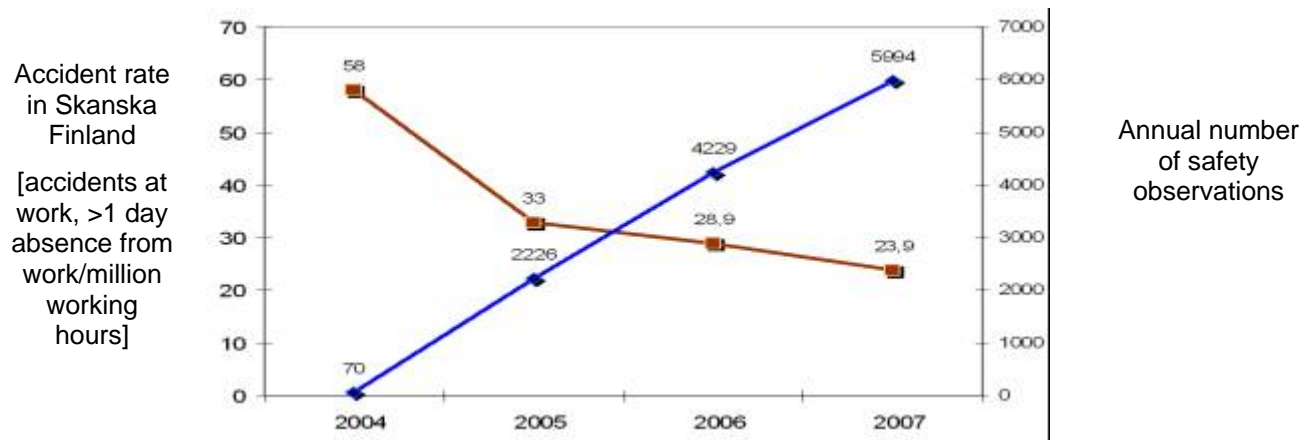
The safety observation card was not only available to workers at site. Visitors were also encouraged to use it, as well as Skanska's top management in terms of safety tours.

3.4. What was achieved ?

Safety observations promoted accident prevention in various ways:

- They helped workers and supervisors to identify hazards and adopt preventive or corrective measures immediately.
- They promoted personal and site-level communication and learning.
- They provided information for company-wide health and safety management.
- High number of safety observations in the safety information system enabled to analyse the data in several different ways. It was possible for example to explore the hazards distributed to different building types such as hospitals, warehouses, apartments, terrace houses, bridge works, etc or otherwise, to certain periods of time (e.g. winter).
- Since 2004, when the company started collecting safety observations, the accident rate decreased noticeably from 58 to 23.9 in 2007, while in the meantime the number of recorded observations increased from 70 to 5994, indicating an indirect correlation between the number of safety observations and accident rate (figure 4).

Figure 4. Correlation of the number of safety observations and lost-time accident rate in Skanska Finland (2004-2007)



Source: Skanska Finland

- Although no official calculations regarding the implementation costs of the safety observation procedure were available, Skanska management estimated that approximately EUR 3,9 million were saved in accident costs.

3.5. Success factors

There are many factors that contributed to the successful implementation of the safety observation method:

- The safety observation card was user friendly and easy to use, incorporating fixed lists of most common hazards at building and civil construction sites and suggestions for improvement. Each identified hazard or proposal could be chosen just by ticking off (figure 5).

Figure 5. Safety observation in practice



Source: Skanska Finland

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- The fact that every new worker entering a construction site was instructed in the use of the safety observation card either personally, or with a powerpoint presentation or a DVD – video, had helped to familiarise personnel with the idea of safety observation.
- The collection of observations by each Skanska supervisor, provided feedback to the workers either personally or by means of a weekly held site meeting in which all workers participated. This had created an opportunity for learning and preventing occurrence of similar hazards.
- Corporate level observations were discussed during safety managers meetings every two weeks and regular safety committee meetings. Any observation that helped to identify an important hazard, was published in Skanska's safety bulletin that was printed out 1-2 times per month. The intention was to promote company-wide learning from near-miss incidents.
- Skanska Finland had encouraged observation by donating one Euro per observation to charity. The money collected, was donated to the Finnish Association of People with Physical Disabilities (figure 6). Moreover, there were also several regional initiatives, lotteries, etc.

Figure 6: Each safety observation at a site results in a euro for charity



Source: Skanska Finland

- The observation was also promoted through the competition between workers and supervisors, as regards the number of observations made.
- Skanska AB was organising a worldwide Safety Week annually, together with a campaign for promoting safety observation. These campaigns usually included posters and lottery winnings.
- And last but not least, the president of Skanska business unit, had sent a letter to every worker individually, in order to challenge personnel to observe safety at work.

3.6. Further information

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3.7. *Transferability*

The implementation of the daily safety observation procedure itself is rather simple. The observation card can easily be modified to match the most common hazards at any workplace. However, the cost may increase considerably in case a company intends to establish a safety information system. This would be the case if the organisation is large or if it consists of several worksites separated geographically.

After the card was developed in Skanska Finland in 2005 several companies had adopted the method. These included major construction companies in Finland such as Lemminkäinen, Hartela and NCC. It was also in use on the nuclear reactor construction site in Olkiluoto, three shipyards of STX-Finland and the worksites of Assembly of Member City Representatives of Metropolitan Area (YTV).

4. References, resources:

Information provided by Skanska Finland in the framework of the Good Practice Award Competition 2008/2009.