USING STANDARDIZED WORK TO PREVENT CONSTRUCTION ACCIDENTS

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The work done on construction sites is **high risk, unsafe** and could result in **work-related accidents**.

Accidents cause **poor productivity** and increases the **project cost**.
## Accident statistics

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>Fatal 67</td>
<td>Fatal 74</td>
<td>Fatal 69</td>
<td>Fatal 82</td>
<td>Fatal 58</td>
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<tr>
<td>Accidents</td>
<td>8514</td>
<td>Accidents</td>
<td>Accidents</td>
<td>Accidents</td>
<td>Accidents</td>
</tr>
<tr>
<td></td>
<td>8455</td>
<td>7560</td>
<td>8364</td>
<td>7779</td>
<td></td>
</tr>
<tr>
<td>Total cost</td>
<td>R240 656 724</td>
<td>Total cost</td>
<td>Total cost</td>
<td>Total cost</td>
<td>Total Cost</td>
</tr>
<tr>
<td></td>
<td>R250 902 125</td>
<td>R247 922 640</td>
<td>R321 344 880</td>
<td>R301 218 438</td>
<td></td>
</tr>
</tbody>
</table>
Recent H&S Incidents (i)

Quick-thinking colleagues save man trapped in trench
2019-05-31 19:28
Jenni Evans

Quick-thinking workers have saved the life of a colleague when a trench he was digging collapsed on him in Pretoria on Friday.

Netcare 911 spokesperson Shawn Herbst said another worker was killed when the two-metre deep trench collapsed in Oaktree Street, Hazelwood.

Seeing only the top of their trapped colleague’s head, the workers scrambled to remove sand to enable him to breathe while waiting for help to arrive.

“One of the workers, an adult male, tragically sustained fatal injuries when the trench collapsed,” said Herbst.

He added that the second man was freed from the collapsed trench, stabilized and taken to hospital for further treatment.

Probe after boy, 6, dies falling into unfinished Giyani water project trench
2019-01-14 22:03
Tammy Petersen

A construction and engineering company will “fully co-operate” with investigations after the death of a six-year-old child who fell into one of the manhole chambers left incomplete after engineering works on the Giyani Bulk Water Project.

Nsuku Nhlongo died when he fell and his body was reportedly retrieved on Saturday.

Khatu Holdings group CEO Mngazi Mnynani said in a statement on Monday that Nhlongo’s death was “tragic and regrettable”.

The company dispatched its own team to investigate the incident, Mnynani said.

“Our team is also working round the clock in conjunction with Mopani District Municipality to find out what happened and prevent a recurrence of a similar incident in future. We are equally inquiring to find out the truth because we pulled out of site in September due to non-payment by the employer. Therefore, for four months to date, there has been no activity on site and no maintenance and safeguarding of the pipelines.

It would be “readily available” and would fully co-operate with authorities during the probe, Mnynani said.

According to EWN, the project, worth billions, was intended to supply water to Giyani and surrounding villages. It was abandoned after the Department of Water and Sanitation allegedly failed to pay the contractor.

“What we want to see at the end of the day is for the project to be completed and be handed over to us so that we can start supply water to our communities,” Mopani Municipality’s spokesperson, Witness Tsha, told the radio broadcaster.

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Recent H&S Incidents (ii)

Construction worker dies after being buried in collapsed trench
2018-01-30 20:50
Holly Charlton

Durban – A 46-year-old construction worker died after being trapped in a 10m-deep trench in Giyani, Limpopo, the Hawks said on Tuesday.

Three workers were working in the trench when it caved in, burying them under soil on Monday. They had been working on a construction site for a new mall, spokesperson Lieutenant Colonel Robert Netshiuni said.

"It is alleged that other colleagues tried to help the trapped workers, but only two were rescued alive. The third worker was certified dead at the scene."

The other two workers who were trapped in the trench suffered injuries and are recovering in hospital.

An inquest into the worker's death has been opened.

3 construction workers injured as formwork collapses
2019-06-30 18:38
Tammy Petersen

Three construction workers are in hospital after being injured when formwork collapsed on top of them in KwaZulu-Natal on Saturday, paramedics say.

Netcare 911 spokesperson Shawn Herbst said its paramedics responded to reports of a building that had collapsed in the Bluff, Durban at 15:00.

"Reports from the scene indicate that three construction workers were injured when formwork collapsed on top of them. The patients were pulled to safety," Herbst said.

The injured workers were then transported to hospital.

(Supplied by Netcare 911)
Recent H&S Incidents (iii)
Recent H&S Incidents (iv)

Worker falls 3 storeys at Fourways construction site
2017-02-25 14:40
Jenni Evans, News24

A construction worker is rescued after a fall in Fourways. (Supplied)

Bakkie overturns, lands on construction site, killing 2
2017-01-30 15:32
Tammy Petersen, News24

Cape Town - A construction worker and the passenger of a bakkie were killed in a crash on the N1 on Monday afternoon, the City of Cape Town’s traffic services said.

The bakkie, belonging to a plumbing company, overturned and landed on a construction site after the Jip de Jager turnoff in Cape Town’s northern suburbs around 12:30, spokesperson Maxine Bezuidenhout said.

It smashed into the worker. The passenger in the bakkie was killed. The driver was taken to hospital with serious injuries.

The accident resulted in heavy congestion on the N1 inbound before Old Oak Road and on the N1 outbound at Giel Basson.
Standardized work is a suitable method to prevent construction accident.
Research Method

- **Question**
  - How standardized work prevents accidents on construction sites?

- **Method**
  - Single case design approach deployed in Bloemfontein

- **Data**
  - Semi-structured interviews
  - Focus group interviews
  - Nine participants
# Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction manager</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Site engineer</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Project leaders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety manager</td>
<td>1</td>
<td>56%</td>
</tr>
<tr>
<td>Senior foreman</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Junior foreman</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Artisans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bricklayers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Plaster</td>
<td>1</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Total participants</strong></td>
<td>9</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Findings [1]

- What contribute to accidents on construction sites?
  - The working conditions are often enthused by the desire of the workers to reach a high level of productivity.
  - The results of poor working conditions are influenced by numerous factors such as limited working space on the sites.
  - The impact of little spaces on sites forces construction managers to design a complex site layout.
  - The weather conditions are another factor contributing to poor working conditions, especially during the summer periods.
Findings [2]

- There are various **risks** and **hazards** which are experienced by the workers while **working on scaffolds**
- The scaffold erectors must always check and test the **resilience of scaffold equipment** upon erecting the scaffolds
- Failure to control the **working conditions** of the workers at height, especially those who are **working on a scaffold** is **hazardous** to the workers at the lower levels
- The worker's **medical fitness** helps safety mangers to know the **health status of individuals** and those who will be **able to work at height**
### How standardized work could prevent accidents?

<table>
<thead>
<tr>
<th>Important steps</th>
<th>Key points</th>
<th>Reasons</th>
</tr>
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<tbody>
<tr>
<td><strong>Step 1:</strong> Identify the causes of the problems. (For instance, poor working conditions)</td>
<td>You must breakdown the construction activities or task and identify hazards which might cause injury or accidents in the workplace. (For instance, it is reported that poor housekeeping, limited working spaces and extreme weather conditions might cause errors and violations on site)</td>
<td>This will help in the discovery of the root causes of the reported problems (construction accidents).</td>
</tr>
<tr>
<td><strong>Step 2:</strong> Prepare the workers to solve the problems (For instance, the workers must be taught about the safety regulations and how to identify hazards and risks when working on sites)</td>
<td>It is important to improve the skills and knowledge of the workers through training.</td>
<td>This will prepare the workers to have the skills and knowledge of the work.</td>
</tr>
<tr>
<td><strong>Step 3:</strong> Improve the operations (For instance, allow housekeeping to form part of the job task)</td>
<td>The workers must be given the jobs task and be corrected if an error is experienced.</td>
<td>Introduce continuous improvement for the job task.</td>
</tr>
</tbody>
</table>
Construction manager must include housekeeping practice as part of designing the critical path method.

The adaptation of standardized work to solve the reported construction accidents should follow the three important steps.

The use of standardized work could also help construction managers set as a baseline to promote safety by eliminating errors and violations.