Accidents in the Construction industry– Report 2020

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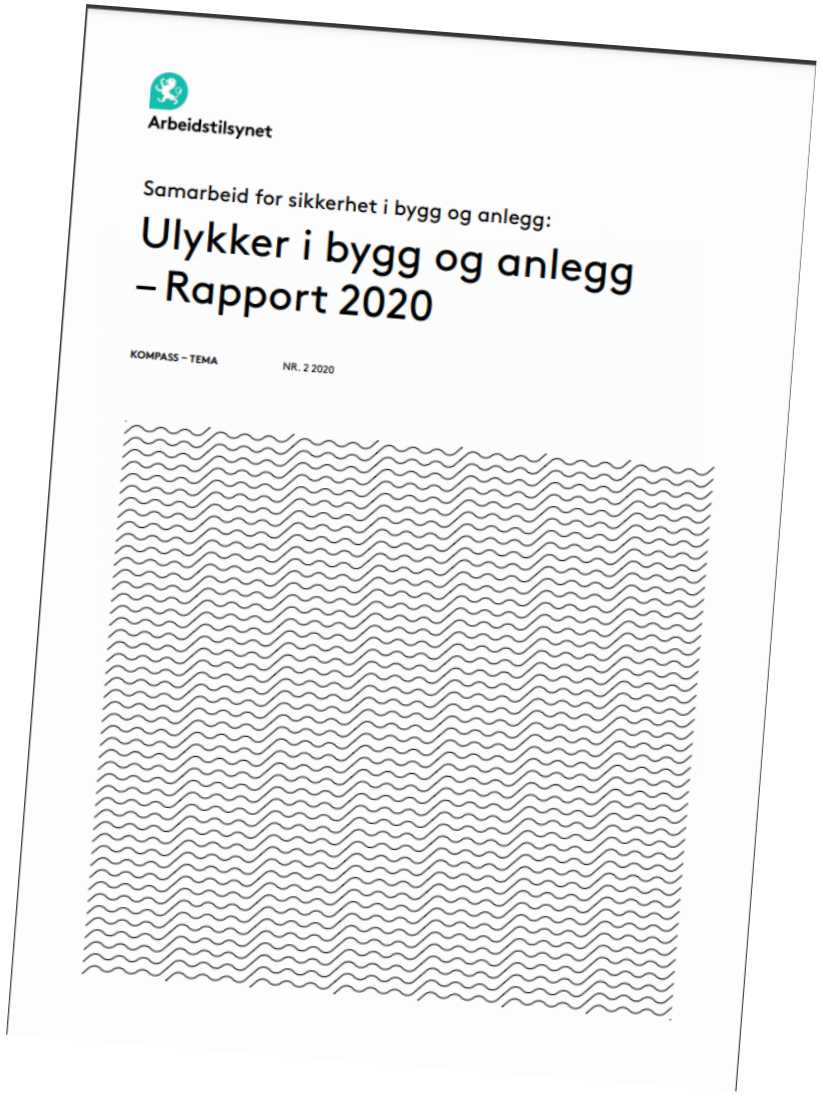

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Arbeidstilsynet

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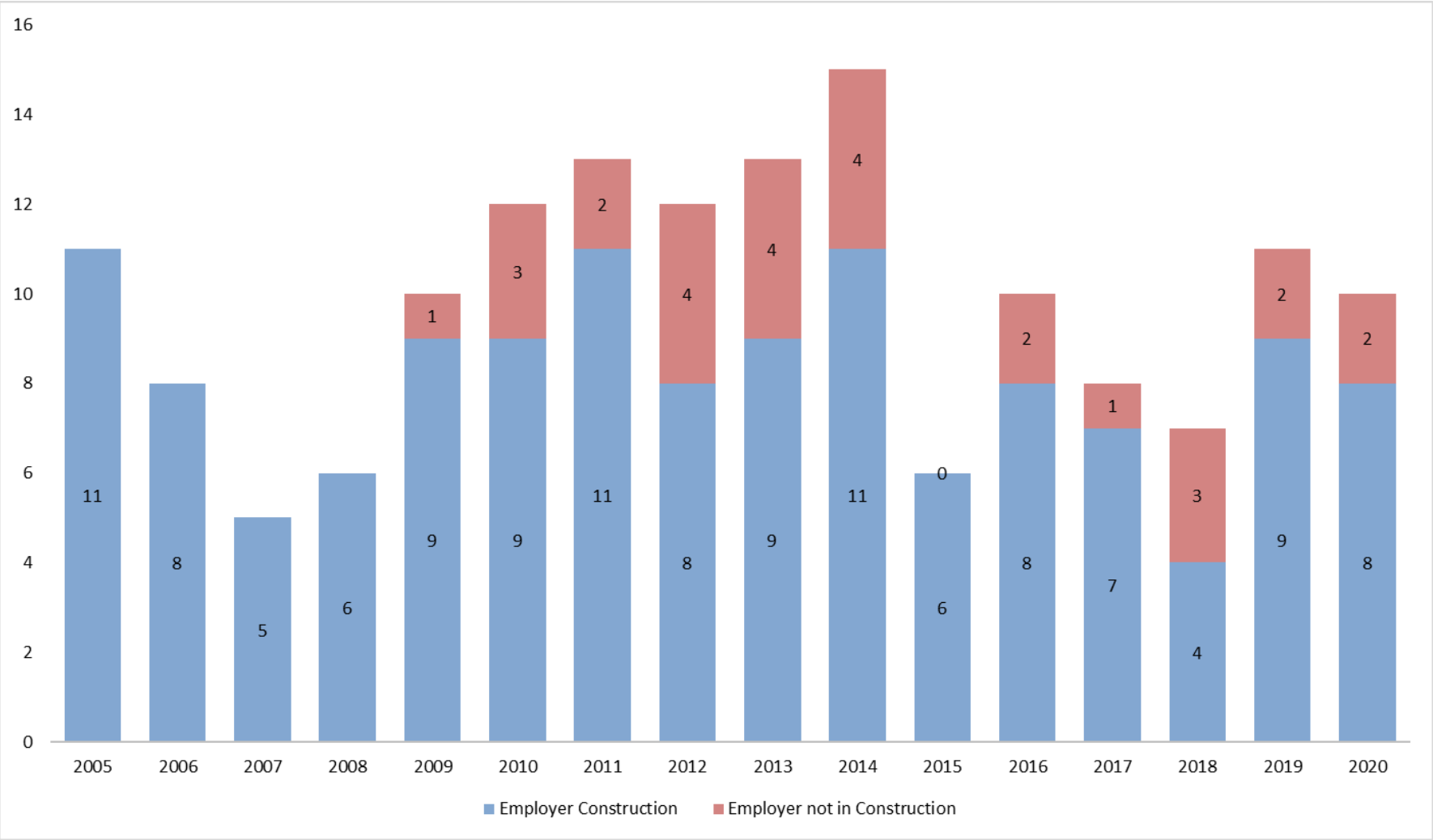
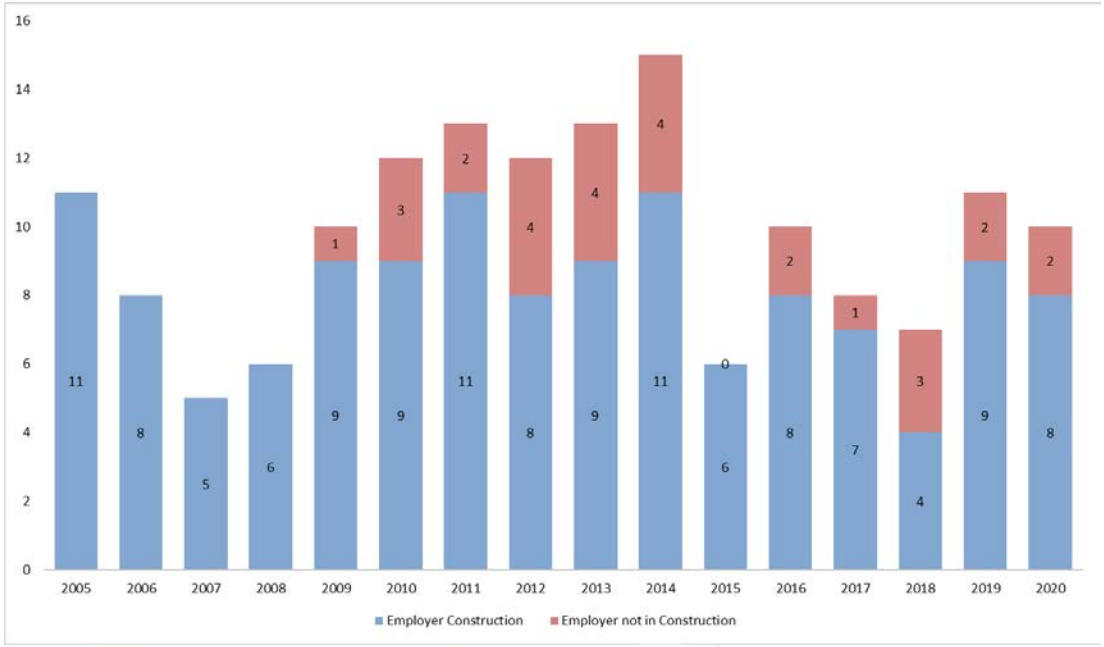
Occupational construction fatalities



Occupational Fatalities in the Construction industry

- Many serious accidents from 2009-
- A lot of “turbulence” in the industry



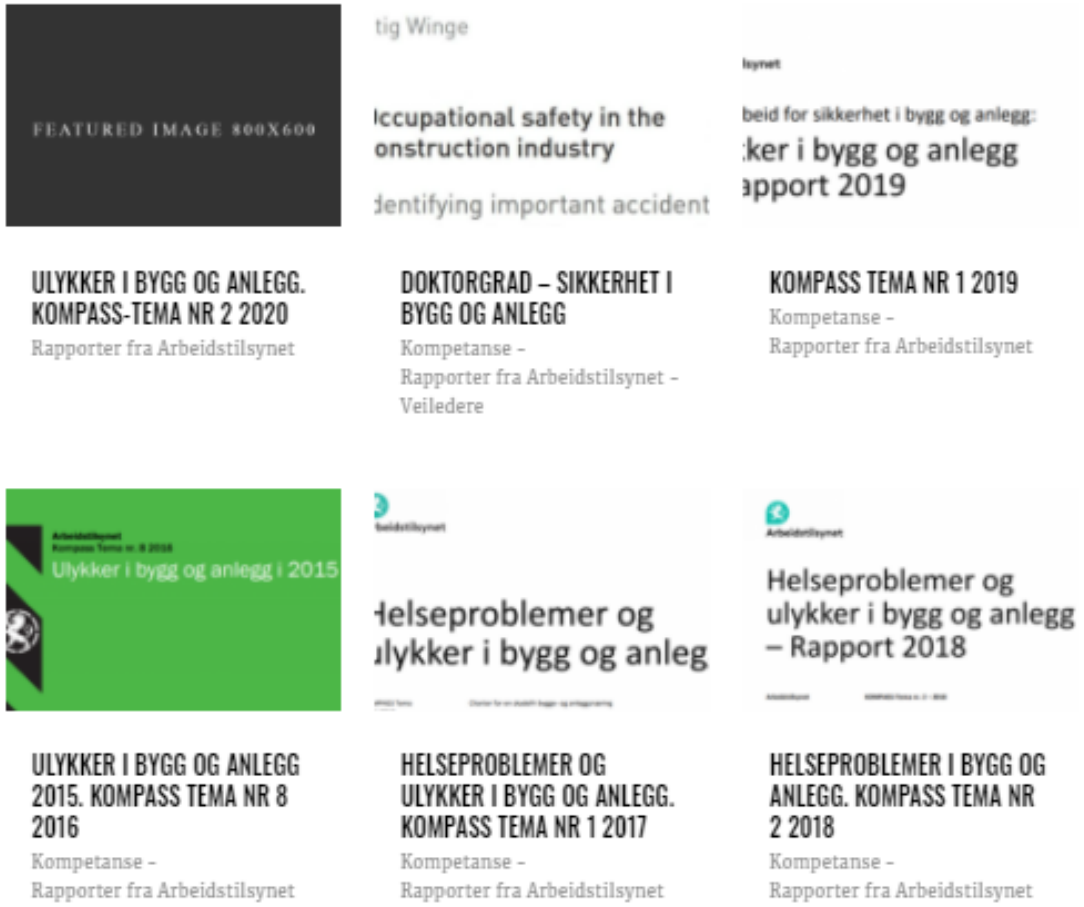
Fredag 16. mars 2012 raste 48 tonn betong ned fra et nybygg på Brattøra i Trondheim. EN 52 år gammel mann mistet livet i ulykken. Foto: Ned Alley / Scanpix

Cooperation for safety in Construction

- A formal cooperation between the authorities, clients, designers, contractors, labour unions, etc.
- Established 2014
- Aim: Reduce the number of accidents
- The authorities (LI) is represented on the board and deliver annual reports

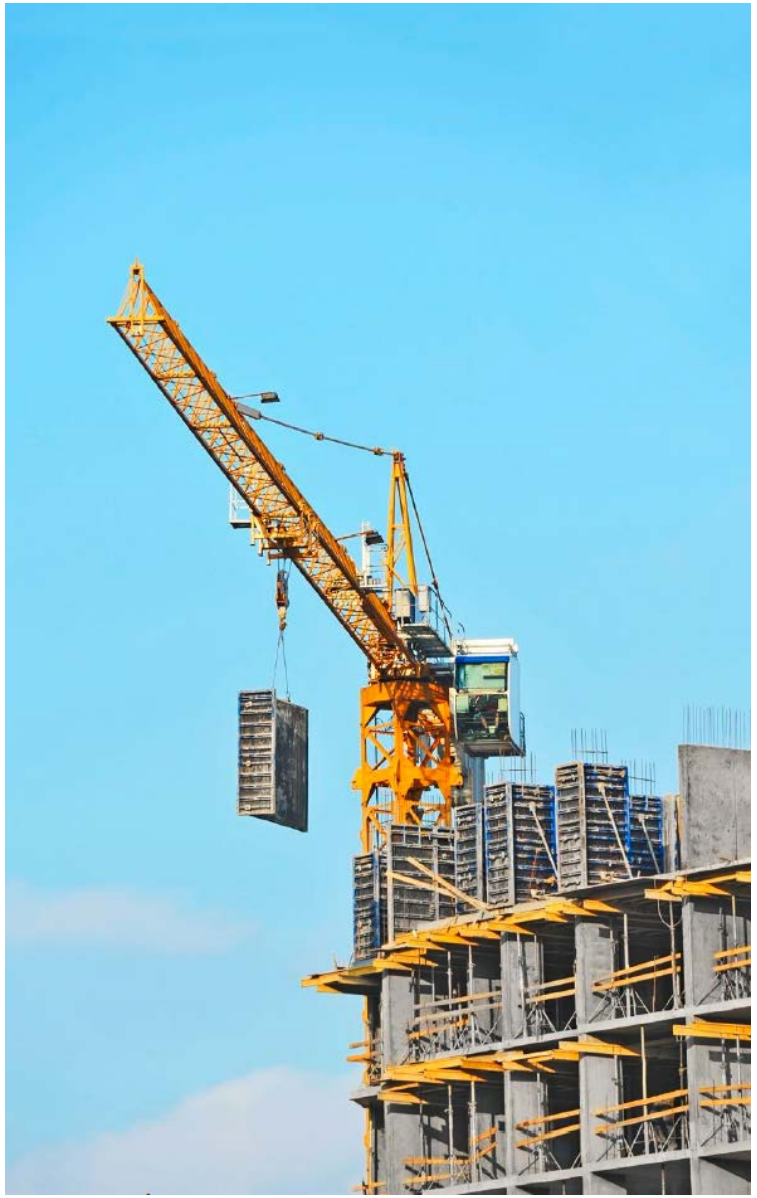
Annual reports and PhD

- Seven annual reports:
  - Monitor development in accidents
  - Analysis of problems, e.g.: Prefab, Vehicles, Digging, Falling objects, Fall from heights etc.
- Phd and four articles: «Occupational safety in the construction industry»:
  - Accident types
  - Barrier failures
  - Causal factors
  - Safety management
- www.sfsba.no



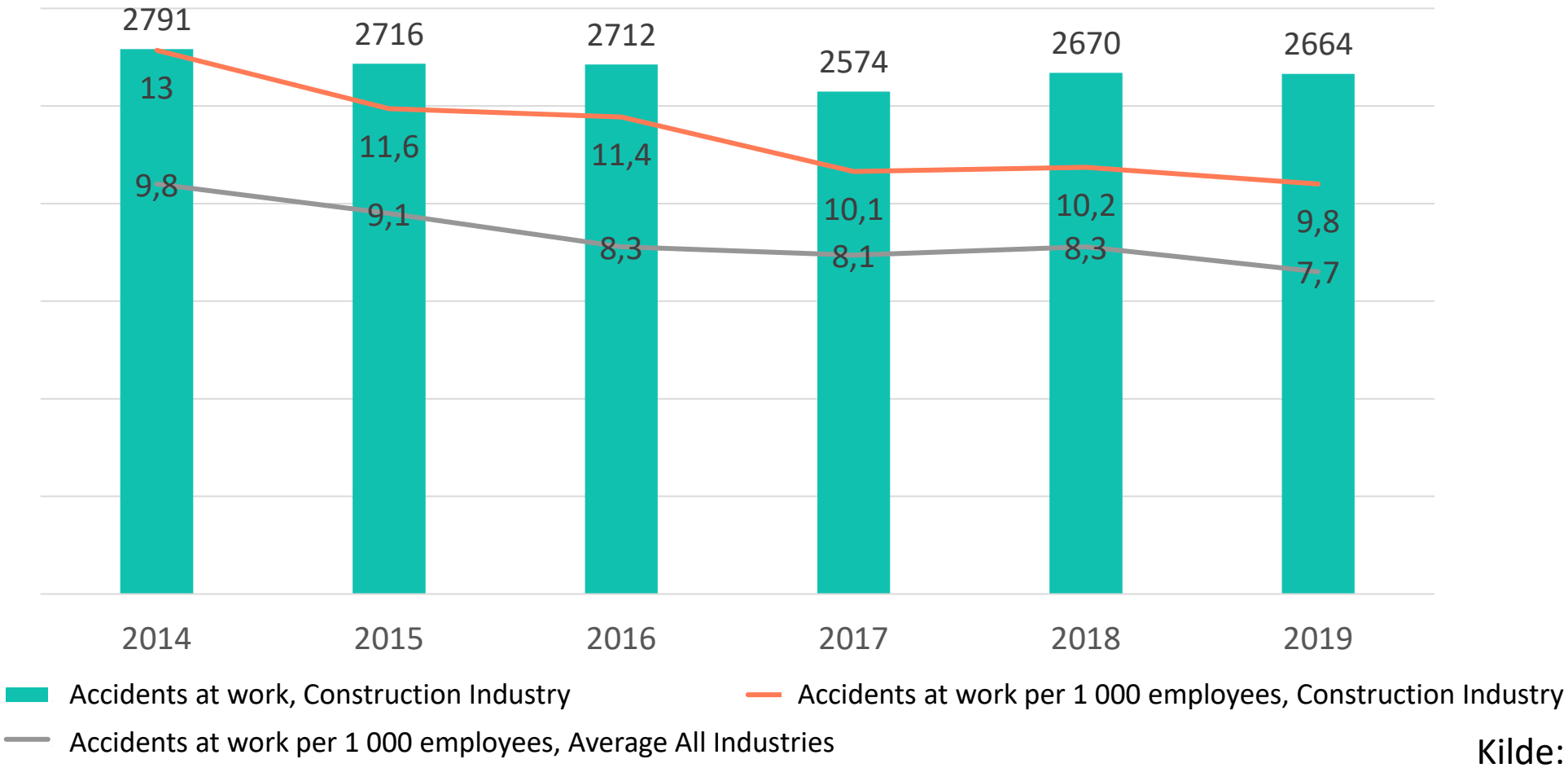
The «nature» of construction

- Inherently dangerous work
- Project based – limited time
- Organisational complexity
- Subcontracting and hired workers
- Small- and mediumsized enterprises
- Labour-intensive
- Highly dynamic



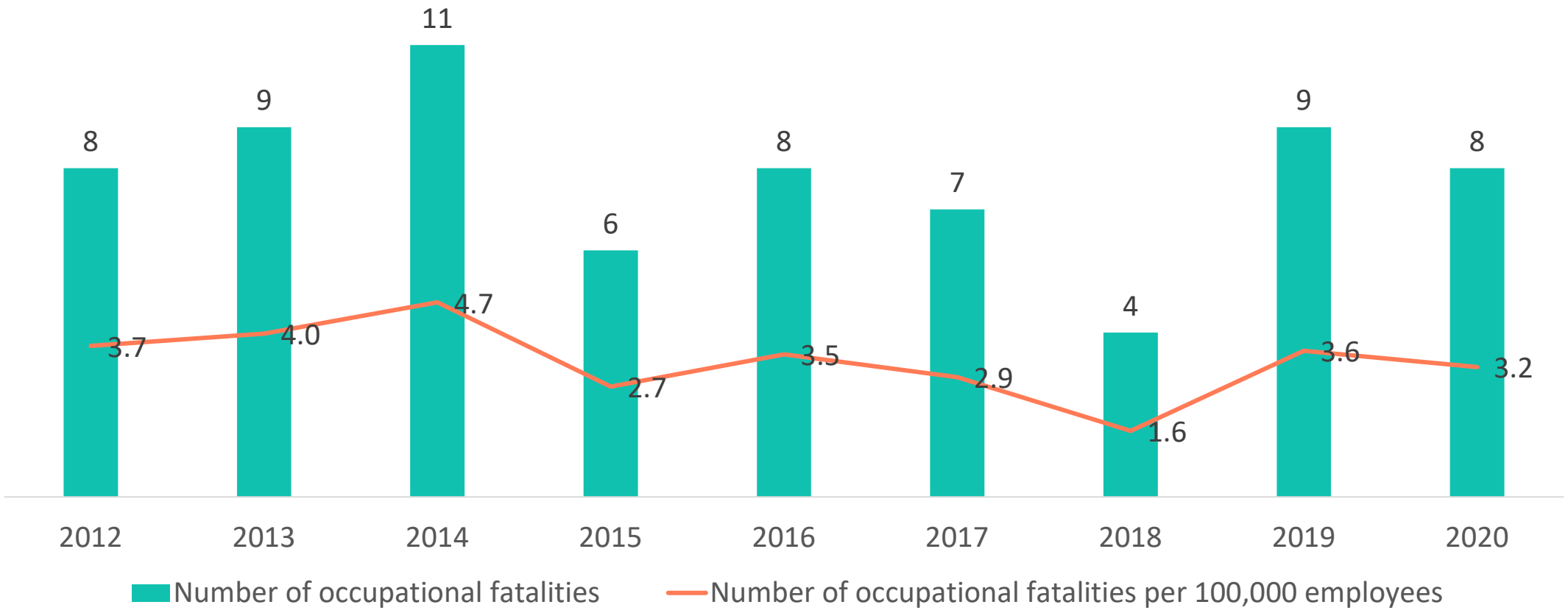
Accident statistics in Construction

Occupational injuries

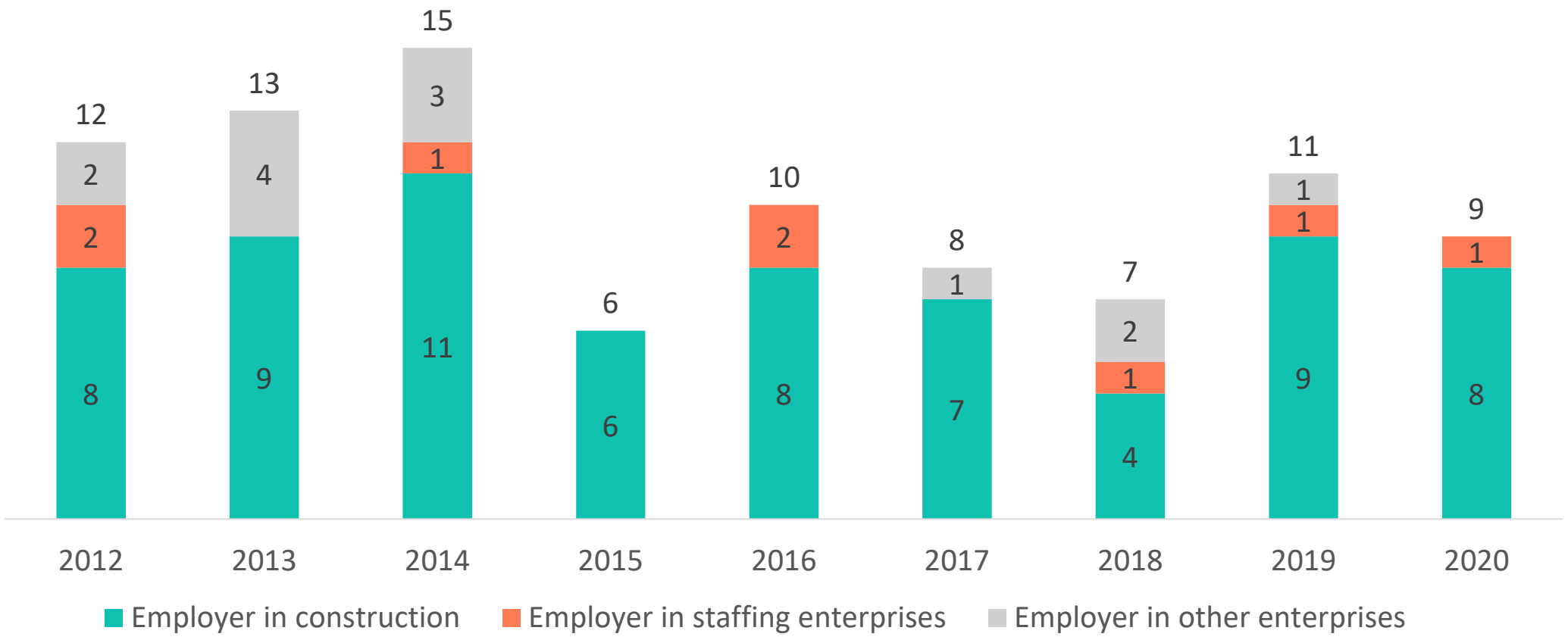


Kilde: SSB

Occupational fatalities



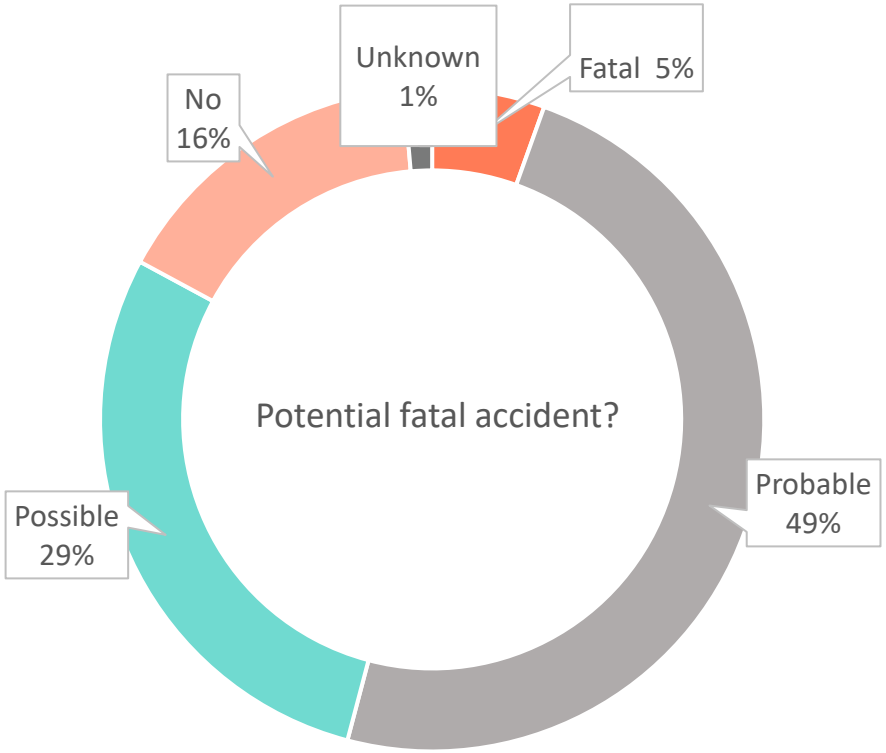
Occupational fatalities



Analysis of all construction accidents investigated by the Labour Inspectorate in 2019 (N=146)

Characteristics of accidents investigated by the Norwegian Labour Inspection Authority in 2019

- 146 accidents
- 154 injuries
- 8 fatalities

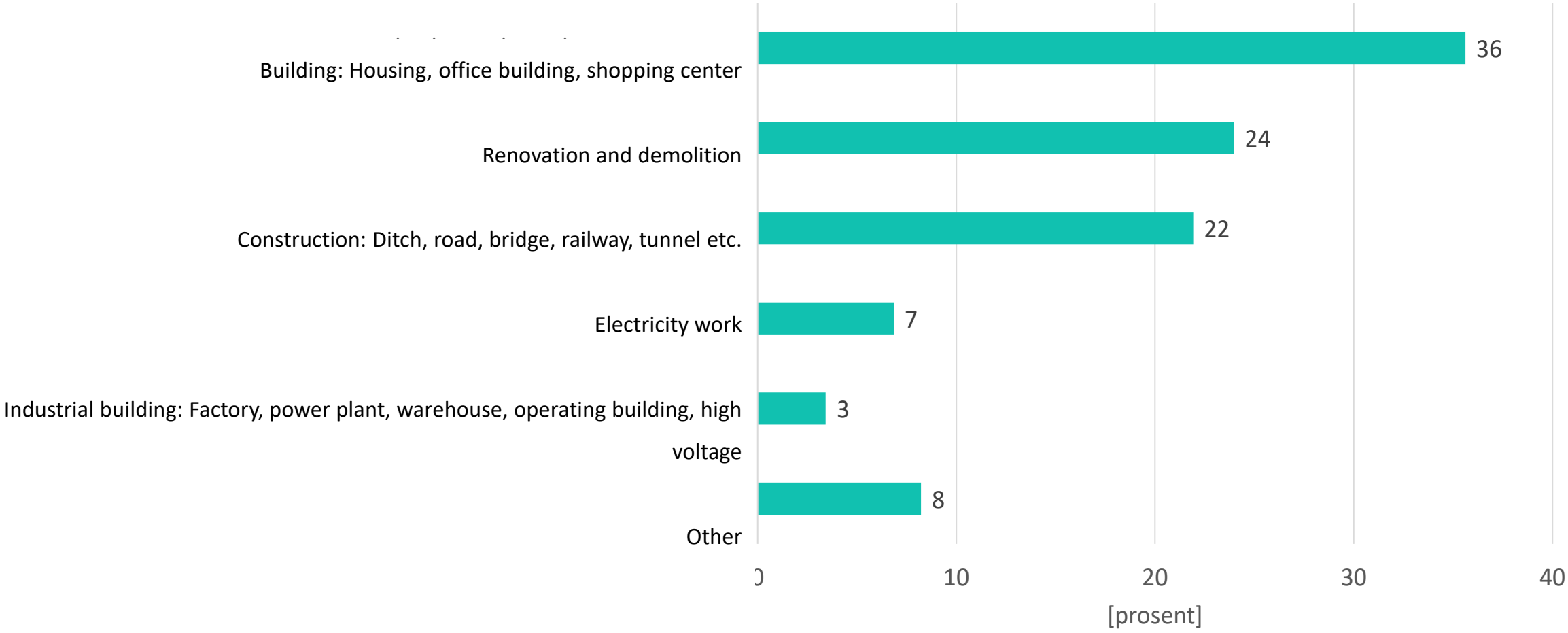


Characteristics of the injured workers

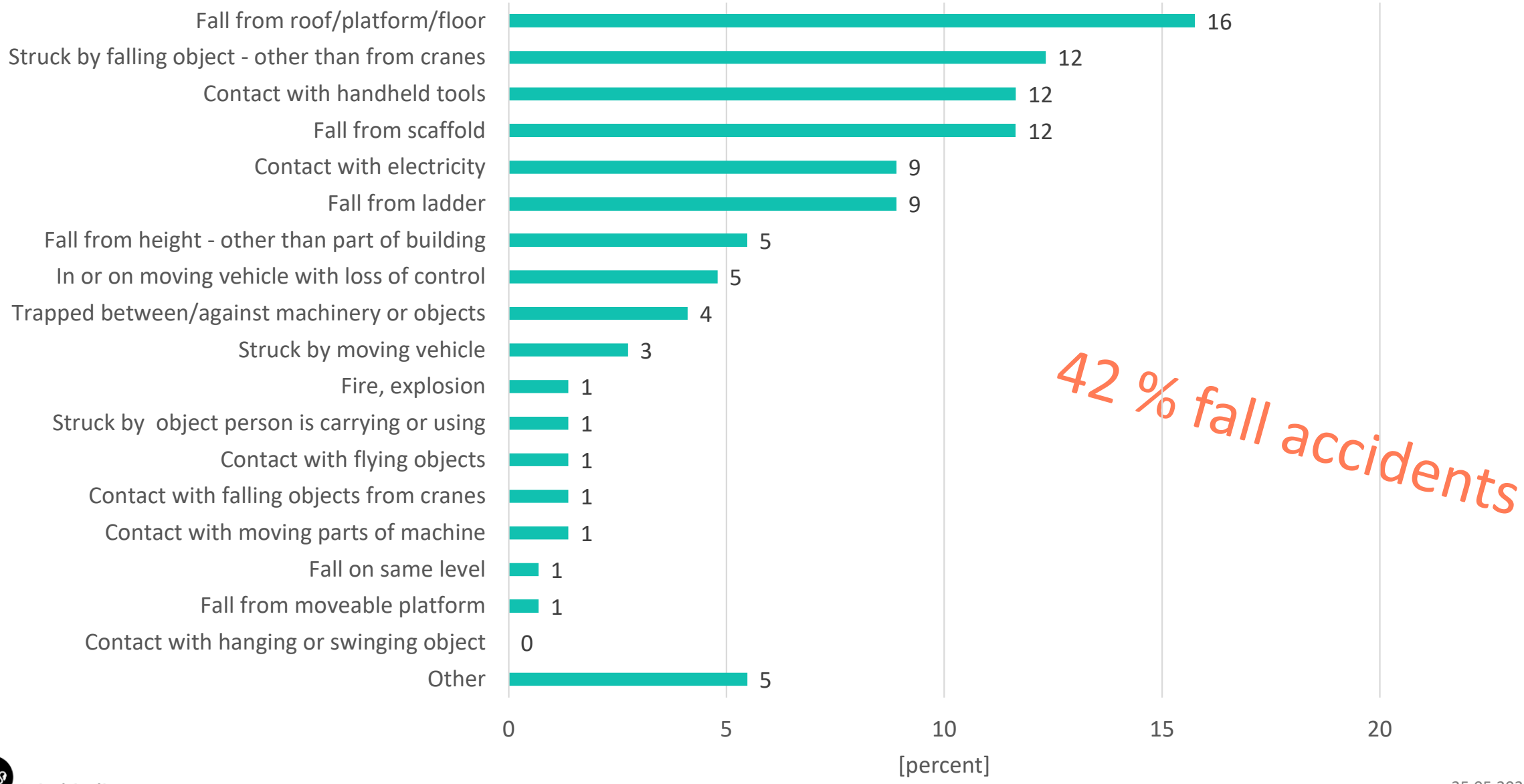
- 99 % men
- Highest injury frequency rate in the age group below 25 years
- 27 % immigrant workers

Employee status	
Permanent employee	68 %
Temporary employee	15 %
Hired employee	16 %
Unknown	1 %
Sum	100 %

Type of project (N=146)



Types of accidents (N=146)

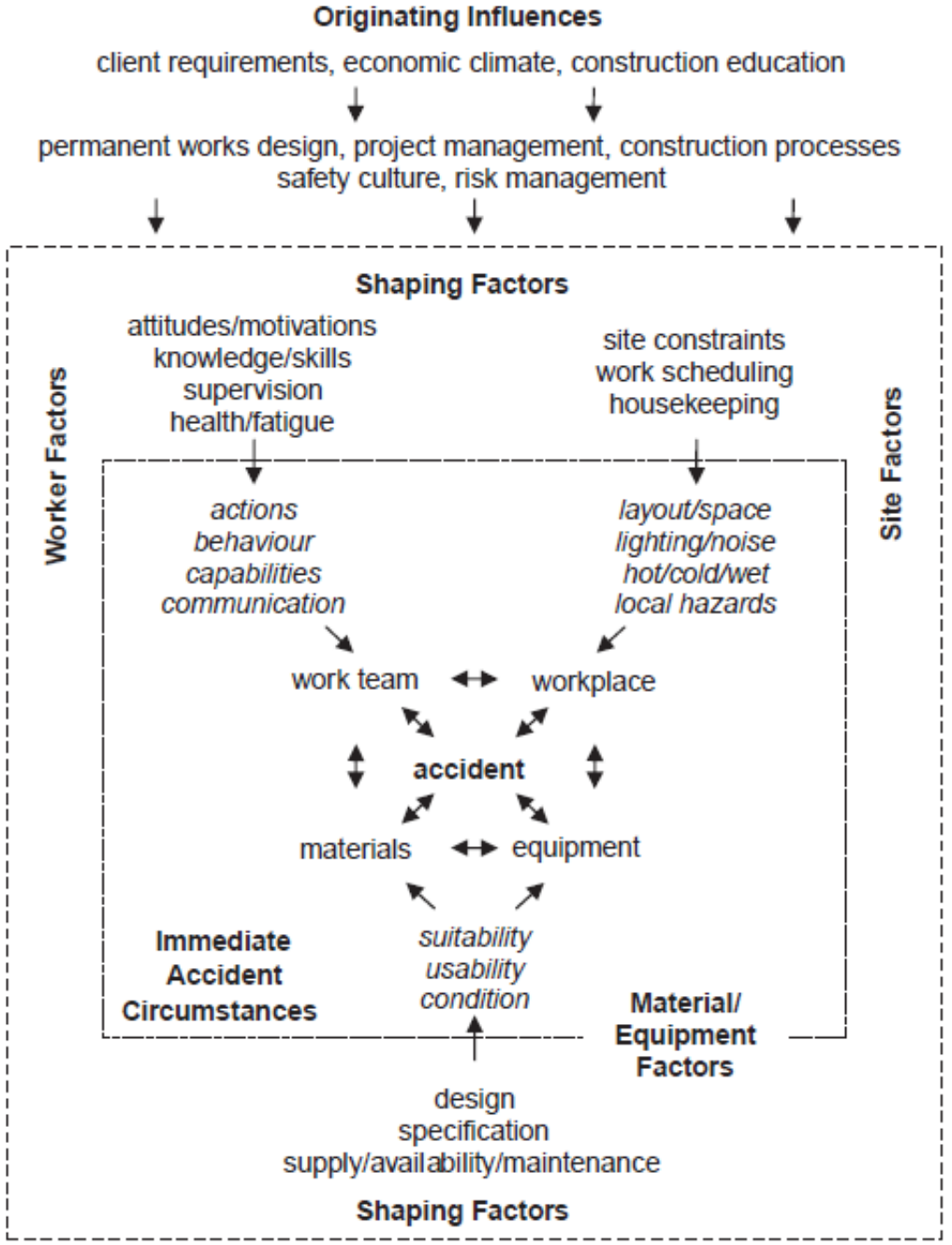


Arbeidstilsynet

Analysis of causal factors

Accident prevention begins with having a clear understanding of factors that play key roles in causation (Hinze et al., 1998)

Construction Accident Causation Model (Haslam et al., 2005)



Causal factors (N=146)

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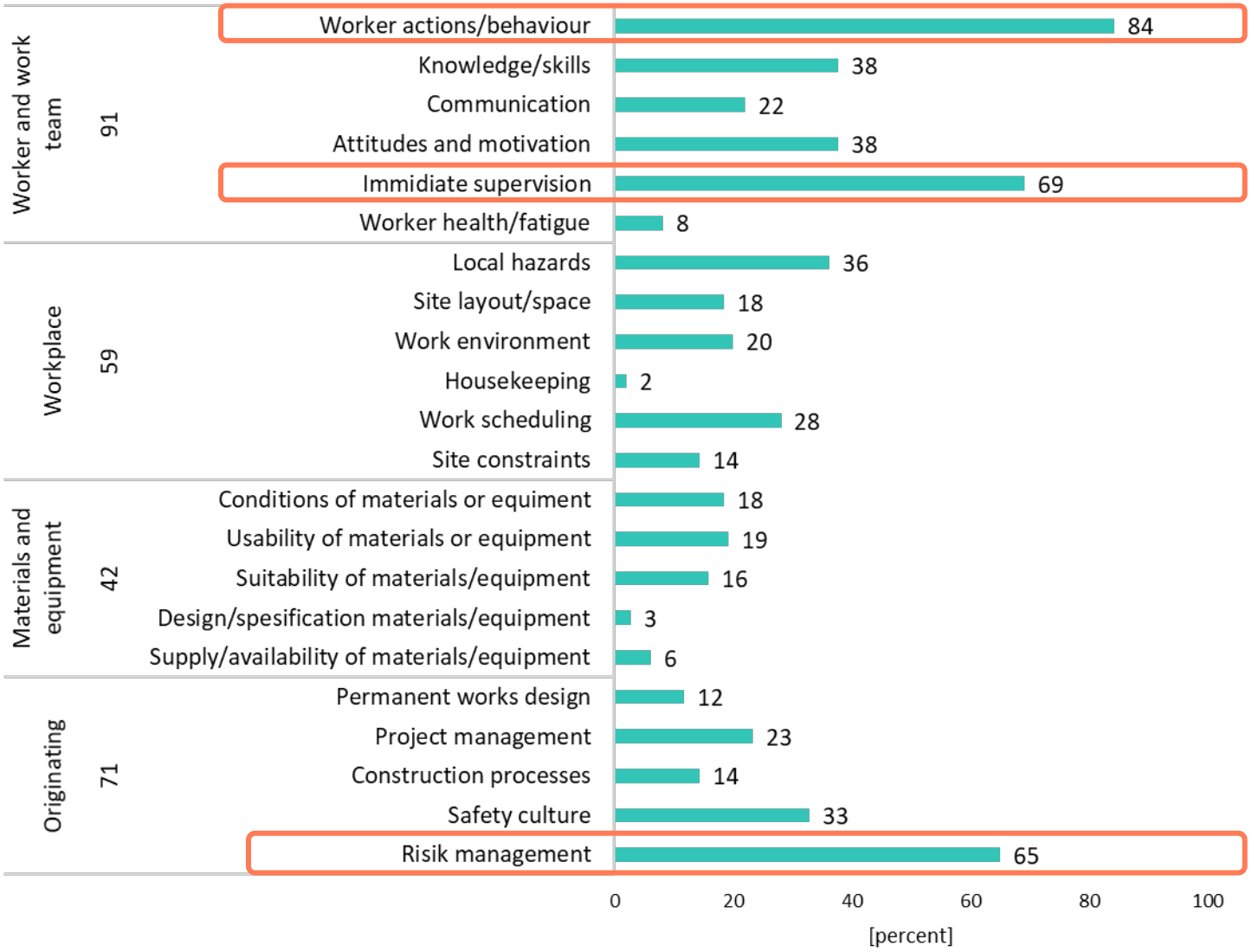


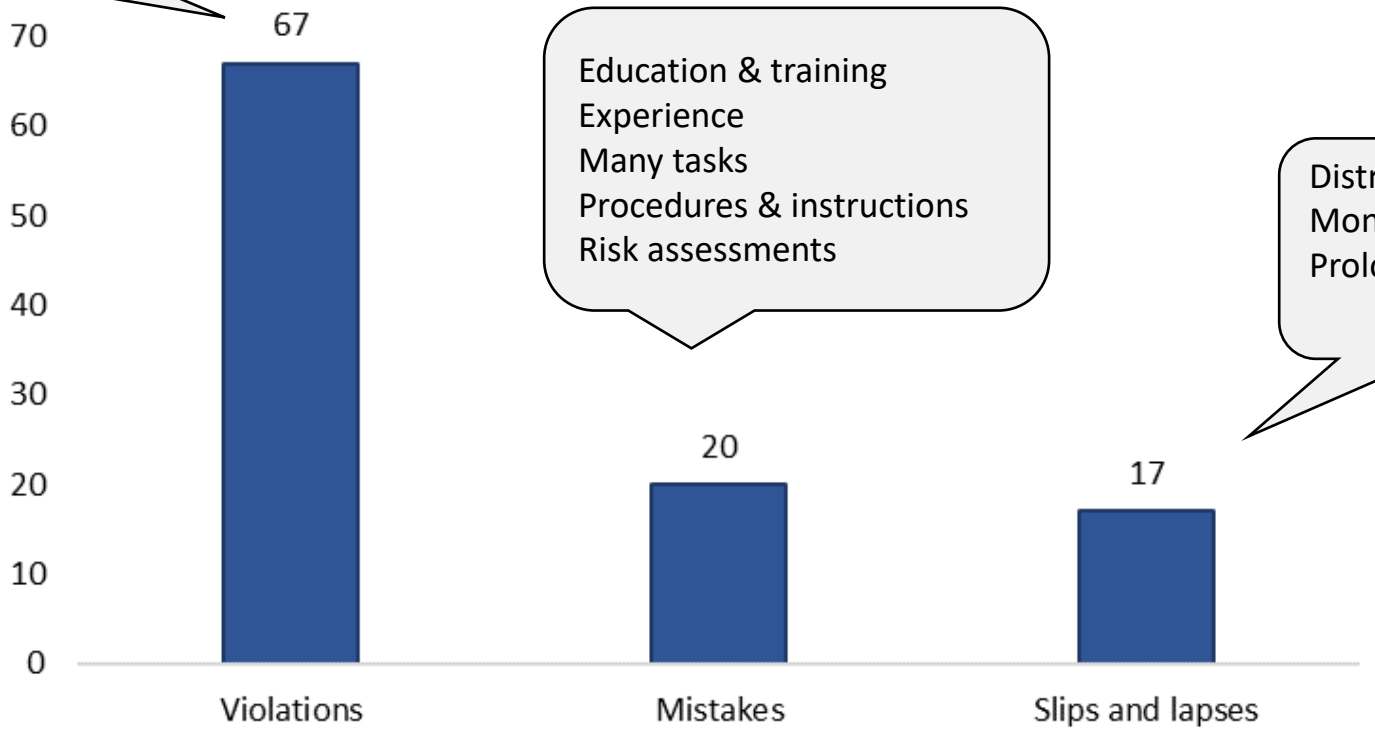
Unsafe acts

- Unsafe acts contributed to 84 % of the accidents
- Includes all acts at the ‘sharp end’ that have an impact on the accident, such as mistakes, unsafe acts, violations of procedures, taking shortcuts, etc.
- The Labour Inspectorate often find that employers blame workers for accidents
- Worker behaviour is largely a result of the system workers are part of (Reason, 1997) and symptomatic of trouble deeper within a system (Dekker, 2014).

Unsafe acts (%), causal factors and measures

Contracting and demands regarding worker-competence.
Worker recruitment.

Time pressure & production pressure
Staffing
Procedures & instructions
Education & training
Attitudes / safety culture



Education & training
Experience
Many tasks
Procedures & instructions
Risk assessments

Distractions
Monotonous work
Prolonged work

Immediate supervision

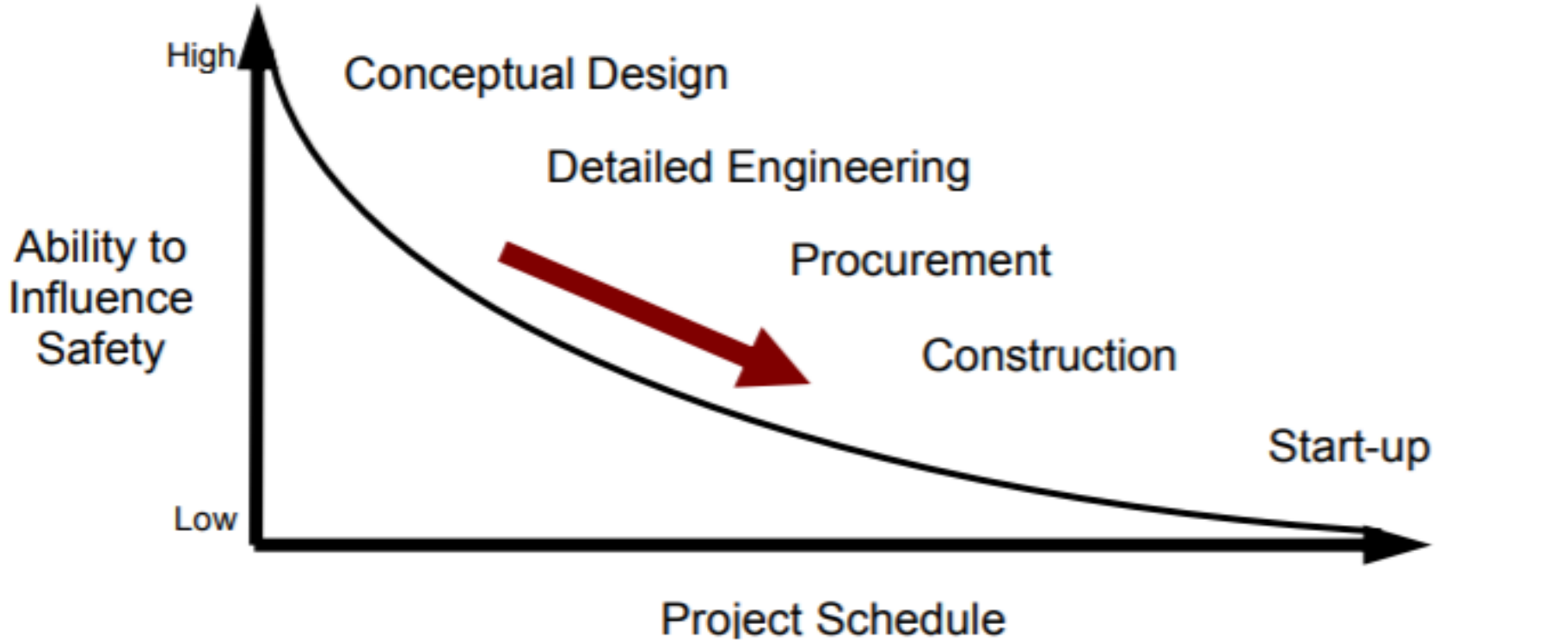
- Poor immediate supervision found in 69 % of the accidents
- Inadequacies in
  - controlling unsafe conditions and behaviour, and
  - planning the work to reduce risk
- In some accidents the supervisor was part of the poor safety culture or not present
- Immediate supervision also found to be an important factor in several other studies in construction
- The foreman is the key interface between worker and management and plays a key role in ensuring safety management

Picture: Skanska

Risk management in Construction

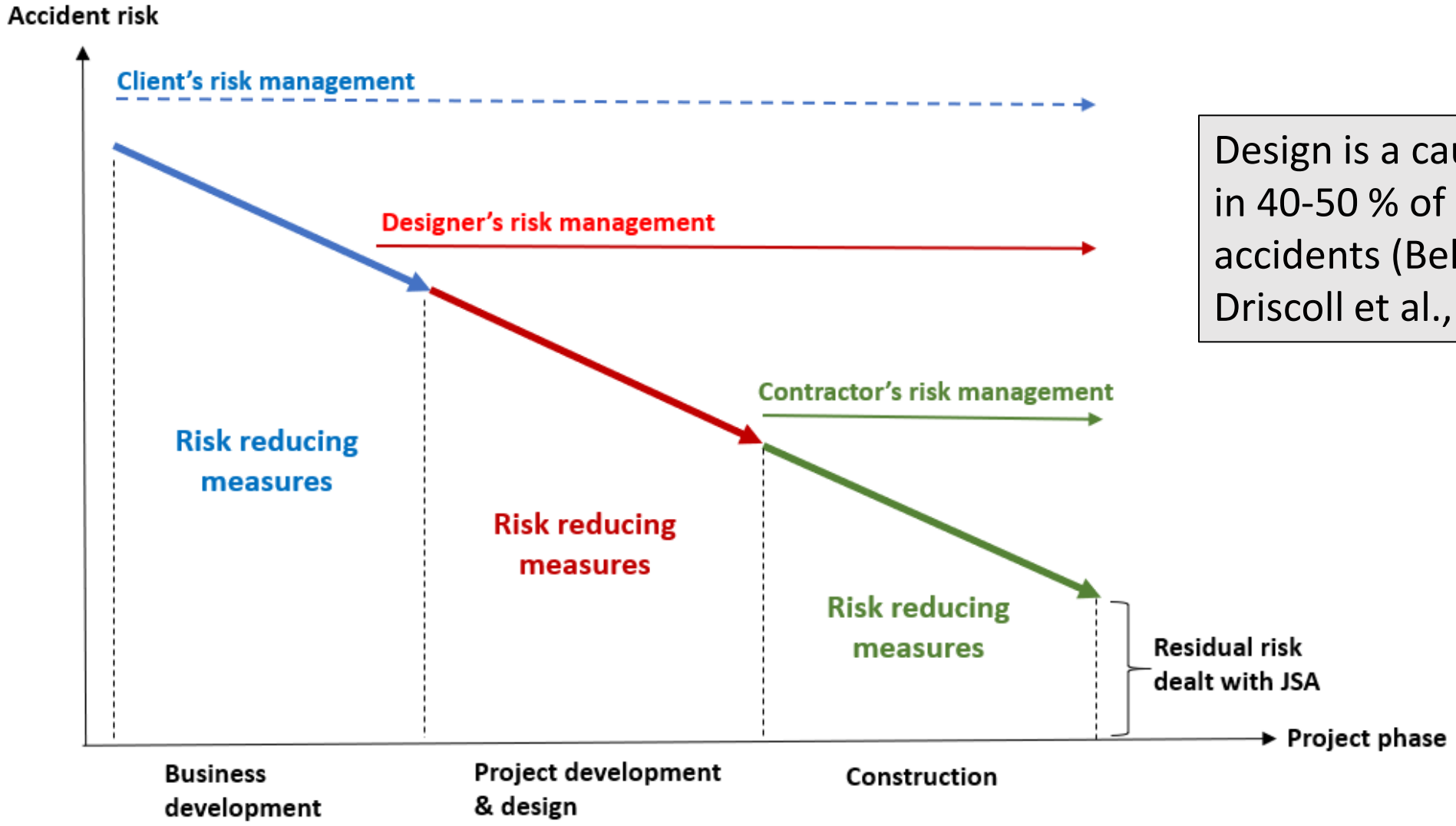
- The “nature” of construction complicates risk management
- Conventional risk management methods assume that risks can be “decomposed” into small parts (Lingaard, 2013)
- In dynamic settings, new hazards be created continuously
- It is difficult to predict all the new hazards that will be created
- Many residual risks could have been controlled earlier

Ability to influence safety at different stages



Source: Szymberski 1997

Risk management at different stages by different parties



Design is a causal factor in 40-50 % of fatal accidents (Behm, 2005; Driscoll et al., 2008).

(Ref.: RIF, 2019; Albrechtsen et al. 2019)

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Thank you for your attention