

**Annual Report on  
Accident Statistics and Analyses for Public Works Contracts 2020**

This report summarizes the accident statistics and analysis of the accidents occurred in public works contracts in 2020.

**Accident Statistics (Appendices A to F)**

2. Some key accident statistics and their trends are summarized below –

	<b>Key Statistical Data</b>	<b>Remarks</b>
(a)	Accident rate (fatal + non-fatal)	The accident rates for 2019 and 2020 were 0.18 and 0.16 accidents per 100,000 man-hours worked (or equivalent to 6.6 and 5.7 accidents per 1,000 workers per year respectively). A decrease of about 15% was observed.
(b)	No. of reportable accidents (fatal + non-fatal)	The total numbers of reportable accidents for 2019 and 2020 were 187 and 158 respectively. A decrease of about 16% was observed. The numbers of man-hours worked for 2019 and 2020 were 101,136,311 and 100,085,717 respectively. A decrease of about 1% was observed.
(c)	Fatal accidents	Four fatal reportable accidents occurred in public works contracts in 2020. A total of 18 fatal accidents happened in the whole construction industry in 2020.

3. A brief account of the fatal accidents happened under public works contracts is given below –

<b>Date of Accident</b>	<b>Accident Nature</b>	<b>Brief Description of Accident</b>
31/3/2020	Striking against or struck by moving object	A metal worker, while carrying out metal struts installation work in an excavation of a tunnel under construction, was struck to death by a metal strut which was being lifted up by two chain blocks at one end and was suspended at its middle position by a crawler crane.  The incident happened under CEDD Contract No. NE/2015/02 – Tseung Kwan O - Lam Tin Tunnel – Road P2 and Associated Works.

<b>Date of Accident</b>	<b>Accident Nature</b>	<b>Brief Description of Accident</b>
20/7/2020	Contact with electricity or electric discharge	<p>A formworker, while pushing aside a cable of an electric arc welding machine at the basement level where foundation work was in progress, was believed to be electrocuted.</p> <p>The incident happened under ArchSD Contract No. SSF508 – Construction of Hongkong Post Headquarters Building at Wang Chin Street, Kowloon Bay.</p>
21/7/2020	Trapped by collapsing or overturning object	<p>A gang of some ten workers, while working on a reinforcement bar structure in a tunnel under construction, the structure collapsed suddenly. All workers fell with the collapsed structure onto the ground. A rigger passed away on the same day while six other workers sustained multiple bodily injuries.</p> <p>The incident happened under HyD Contract No. HY/2014/07 – Central Kowloon Route – Kai Tak West.</p>
27/10/2020	Fall of person from height	<p>A worker, while carrying out dismantling work of a disused site office, fell from 1/F onto the ground through a floor opening for about 3.25m. He passed away 4 days later.</p> <p>The incident happened under CEDD Contract No. CV/2007/03 – Development at Anderson Road – Site Formation and Associated Infrastructure Works.</p>

4. The accident rates for Works Departments in 2020 are summarized below –

<b>Works Departments</b>	<b>No. of Fatal Accident</b>	<b>Accident Rates (Fatal + Non-fatal)</b>	
		<b>No. of accidents per 100,000 man-hours worked</b>	<b>No. of accidents per 1,000 workers per year</b>
ArchSD	1	0.20	7.09
CEDD	2	0.14	5.15
DSD	0	0.17	6.08
EMSD	0	0.10	3.58
HyD	1	0.18	6.46
WSD	0	0.06	2.30
<b>Overall</b>	<b>4</b>	<b>0.16</b>	<b>5.67</b>

*Note: The limit set by DEVB with effect from 1 February 2011 is 0.60 accidents per 100,000 man-hours worked (or equivalent to 22 accidents per 1,000 workers per year).*

5. The severity rates (in terms of number of man-days lost per 100,000 man-hours worked) for 2019 and 2020 were 63.3 and 42.4 respectively. A decrease of 33% was observed.

### **Accident Analyses**

6. The accident analyses for the following aspects are given in **Appendices G to O** of this Report respectively. Key findings are summarized below.

(a) **Types of Contracts (Appendix G)**

The five types of contracts having the highest accident rates are listed below –

Types of Contracts	Accident rate (No. of accident per 1,000 workers per year)			
	2018	2019	2020	Changes between 2019 & 2020
Investigation (Ground/Marine)	5.8	10.2	14.2	4.0 (39%)
Site Formation	14.1	8.1	9.6	1.5 (19%)
Geotechnical Works	14.5	5.6	8.4	2.8 (50%)
Building	14.3	9.4	7.5	-1.9 (-20%)
Tunneling	13.9	13.3	7.1	-6.2 (-47%)

The accident rates under Investigation (Ground/Marine), Site Formation and Geotechnical Works contracts in 2020 are increased, as compared with 2019. In particular, the accident rates under Investigation (Ground/Marine) contracts have been increasing since 2018. The corresponding project teams, contract administrators and site supervisory staff are reminded to pay particular attention to the safety performance on these sites.

(b) Types of Accidents (Appendix H)

The five most common types of accidents are listed below –

Types of Accidents	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Slip, Trip or Fall On Same Level	85 (22.0 %)	35 (18.7%)	35 (22.2%)	-
Struck By Moving or Falling Object	36 (9.5%)	18 (9.6%)	24 (15.2%)	6 (33%)
Injured Whilst Lifting or Carrying/ Manual Lifting/ Manual Handling/ Handling Without Machinery	57 (15.0%)	29 (15.5%)	20 (12.7%)	-9 (-31%)
Fall of Person From Height	23 (6.1%)	18 (9.6%)	11 (7.0%)	-7 (-39%)
Striking Against Moving Object	7 (1.8%)	5 (2.7%)	10 (6.3%)	5 (100%)

The above five types of accidents account for 63.4% of the total number of accidents in 2020. Works Departments are requested to devise effective and targeted measures to further reduce the number of accidents, in particular for the above five types of accidents.

(c) Trades of Workers (Appendix I)

The three most common trades involved in the accidents are listed below –

Trades of Workers	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Labourer	194 (51.1%)	84 (44.9%)	72 (45.6%)	-12 (-14%)
Carpenter (Formworker)	23 (6.1%)	13 (7.0%)	14 (8.9%)	1 (8%)
Rigger/ Metal Formwork Erector	15 (3.9%)	5 (2.7%)	13 (8.2%)	8 (160%)

As revealed in Appendix I, “Labourer” and “Carpenter (Formworker)” are the two top-ranked trades commonly involved in the accidents since 2016. More safety briefings or toolbox talks should be provided to workers, in particular the aforementioned trades, for enhancing their safety awareness. It is also noted that a number of accidents involved management or supervisory staff. Management staff and supervisory staff should be arranged to timely attend the prescribed safety training and the respective refresher courses to enhance their safety knowledge and awareness.

(d) Natures of Injury (Appendix J)

The three most common natures of injury are listed below –

Natures of Injury	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Contusion & Bruise	96 (21.9%)	46 (20.8%)	55 (30.7%)	9 (20%)
Fracture	109 (24.9%)	60 (27.1%)	42 (23.5%)	-18 (-30%)
Sprain/ Strain/ Twist	76 (17.4%)	39 (17.6%)	25 (14.0%)	-14 (-36%)
Laceration and Cut	52 (11.9%)	35 (15.8%)	22 (12.3%)	-13 (37%)

“Contusion & Bruise”, “Fracture”, “Sprain/ Strain/ Twist” and “Laceration and Cut” remained the most four common natures of injury in the past five years, which were observed in more than 70% of the total number of accidents. Work procedures and system of work should be formulated and safe working environment, suitable tools and machinery should be provided for carrying out the works, taking cognizance of the above findings.

(e) Parts of Body Injured (Appendix K)

The three most common body parts injured in the accidents are listed below –

Parts of Body Injured	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Finger	83 (18.9%)	45 (20.4%)	33 (17.4%)	-12 (-27%)
Back	54 (12.3%)	24 (10.9%)	24 (12.6%)	-
Wrist	16 (3.7%)	4 (1.8%)	16 (8.4%)	12 (300%)

“Finger” and “Back” were the most two common part of body injured for the accidents in the past five years. Proper personal protective equipment and sufficient training and instruction should be provided to workers to ensure their safety at work.

(f) Agents Involved (Appendix L)

The two most common agents involved in the accidents are listed below –

<b>Agents Involved</b>	<b>No. of Accidents (% of total no. of accidents)</b>			
	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Changes between 2019 &amp; 2020</b>
Floor, Ground, Stairs or Any Working Surface	73 (18.5%)	39 (20.4%)	31 (18.0%)	-8 (-21%)
Material / Product Being Handled or Stored	81 (20.6%)	25 (13.1%)	27 (15.7%)	2 (8%)
Portable Power or Hand Tools	36 (9.1%)	27 (14.1%)	18 (10.5%)	-9 (-33%)

“Floor, Ground, Stairs or Any Working Surface” , “Material / Product Being Handled or Stored” and “Portable Power or Hand Tools” were the three most common types of agents involved in the accidents in the past five years. Extra efforts should be spent on improving these areas.

(g) Unsafe Actions (Appendix M)

The three most common unsafe actions leading to accidents are listed below –

Unsafe Actions	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Lapse of Attention	113 (29.3%)	63 (25.2%)	49 (19.8%)	-14 (-22%)
Adopting Unsafe Position or Posture	59 (15.3%)	31 (12.4%)	30 (12.1%)	-1 (-3%)
Failure To Secure Objects	26 (6.7%)	15 (6.0%)	15 (6.1%)	-

“Lapse of Attention” and “Adopting Unsafe Position or Posture” were the two most common type of unsafe actions in the past five years. Contractors are requested to provide sufficient information and instructions to workers so that they would stay vigilant in the work place.

(h) Unsafe Conditions (Appendix N)

The three most common unsafe conditions involved in the accidents are listed below –

Unsafe Conditions	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Improper Procedure	26 (6.4%)	16 (8.0%)	18 (10.0%)	2 (13%)
Unsafe Process or Job Methods	50 (12.3%)	25 (12.4%)	16 (8.9%)	-9 (-36%)
Improper Stacking/ Storage	19 (4.7%)	8 (4.0%)	16 (8.9%)	8 (100%)

The above three types of unsafe conditions accounted for about 27.8% of the total number of accidents, which showed that the unsafe conditions involved in accidents varied substantially. Works Departments should closely monitor contractors’ performance and take prompt actions to rectify any unsafe actions or conditions observed on site. Routine safety inspections by



the project teams or site supervisory staff and surprise audits by the Departmental Safety and Environmental Advisory Units or independent teams would be the possible actions to identify the malpractice and deficiencies in the working environment and safety management system.

(i) Personal Factors (Appendix O)

The distributions of accidents arising from personal factors are given below –

Personal Factors	No. of Accidents (% of total no. of accidents)			
	2018	2019	2020	Changes between 2019 & 2020
Carelessness / Not Concentrate	228 (56.4%)	117 (56.3%)	92 (50.8%)	-25 (-21%)
Incorrect Attitude / Motive	37 (9.2%)	23 (11.1%)	23 (12.7%)	-
Unsafe Act By Another Person	12 (3.0%)	3 (1.4%)	17 (9.4%)	14 (467%)

The number of accidents associated with “Carelessness / Not Concentrate” was the highest in the past five years. More than half of the total number of accidents were arising from this personal factor. Contractors should strengthen the workers’ safety awareness and attitude through training including briefings and toolbox talks.

7. To maintain the continuous improvement in site safety, Works Departments are recommended to pay particular attention to the following aspects –

- (i) promoting workers’ safety awareness in lifting or carrying, use of hand tools, against fall from height, to prevent struck by falling or moving objects, and to prevent slip, trip and fall on same level;
- (ii) improving site cleanliness and tidiness;
- (iii) providing sufficient instruction, training and supervision to workers to ensure their safety at work in particular for working at height, lifting and confined space work;
- (iv) providing suitable fall arresting equipment e.g. safety harness, fall arrester and independent lifeline connected to a secured anchorage to workers who are at risk of falling from height;
- (v) maintaining an effective monitoring system to ensure workers and supervisory staff (both RSS and in-house staff) make full and proper use of personal protective equipment and safety equipment;

- (vi) enforcing the requirement to conduct risk assessment, and/or permit-to-work system, for all high-risk activities before commencement of the work;
- (vii) maintaining a safe system of work including proper site layout and work plan to segregate workers from construction plant and vehicles;
- (viii) tightening up the control on the use of ladders for work purpose (including straight ladders, step ladders, A-ladders, folding ladders or other ladders alike) on public works construction sites. Ladders should normally be restricted for ascending and descending purposes only;
- (ix) providing adequate safety training, briefings or toolbox talks to workers, especially sharing the lessons learnt in the serious incidents, for preventing recurrence and raising their safety awareness and working attitude;
- (x) arranging management staff and site supervisory staff of the project teams, resident site staff and contractors to timely attend the prescribed safety training and the respective refresher courses as appropriate to enhance their safety knowledge and awareness;
- (xi) providing adequate supervision, surprise check and daily review to the construction activities, especially the high-risk construction activities, to ensure the works are carried out in accordance with the approved method statement and statutory requirements;
- (xii) providing sufficient information and instruction to workers and paying particular attention to the workers' misbehaviours during safety inspection and supervision on site. Any unsafe actions or posture observed on site should be stopped immediately; and
- (xiii) checking of completeness of Independent Checking Engineer's design certificates and as-built certificates for the detailed design and method statements of temporary works before loading, and statutory form(s) for temporary works/scaffolding/working platform.

8. Apart from the analyses given in this report, Works Departments are recommended to carry out further detailed analyses of the accidents under their purview with a view to developing targeted safety measures and programme for further improvement.

**Development Bureau**  
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**Attachments:**

<u>Appendix</u>	<u>Title</u>
A	Accident Rates for Public Works Contracts and the Construction Industry from 2011 to 2020
B	Chart of Yearly Accident Rates for Public Works Contracts and the Construction Industry from 2011 to 2020
C	Chart of Monthly Average Accident Rates for Public Works Contracts from January 2011 to December 2020
D	Number of Accidents for Public Works Contracts with Breakdown by Works Departments from 2011 to 2020
E	Accident Rates for Public Works Contracts with Breakdown by Works Departments from 2011 to 2020
F	Severity for Public Works Contracts with Breakdown by Works Departments from 2016 to 2020
G	Accident Rates for Public Works Contracts from 2011 to 2020 Analyzed by Types of Contracts
H	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Types of Accident
I	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Trades of Workers
J	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Natures of Injury
K	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Parts of Body Injured in Accidents
L	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Agents Involved in Accidents
M	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Unsafe Actions Involved in Accidents
N	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Unsafe Conditions Involved in Accidents
O	No. of Accidents for Public Works Contracts from 2016 to 2020 Analyzed by Personal Factors Involved in Accidents