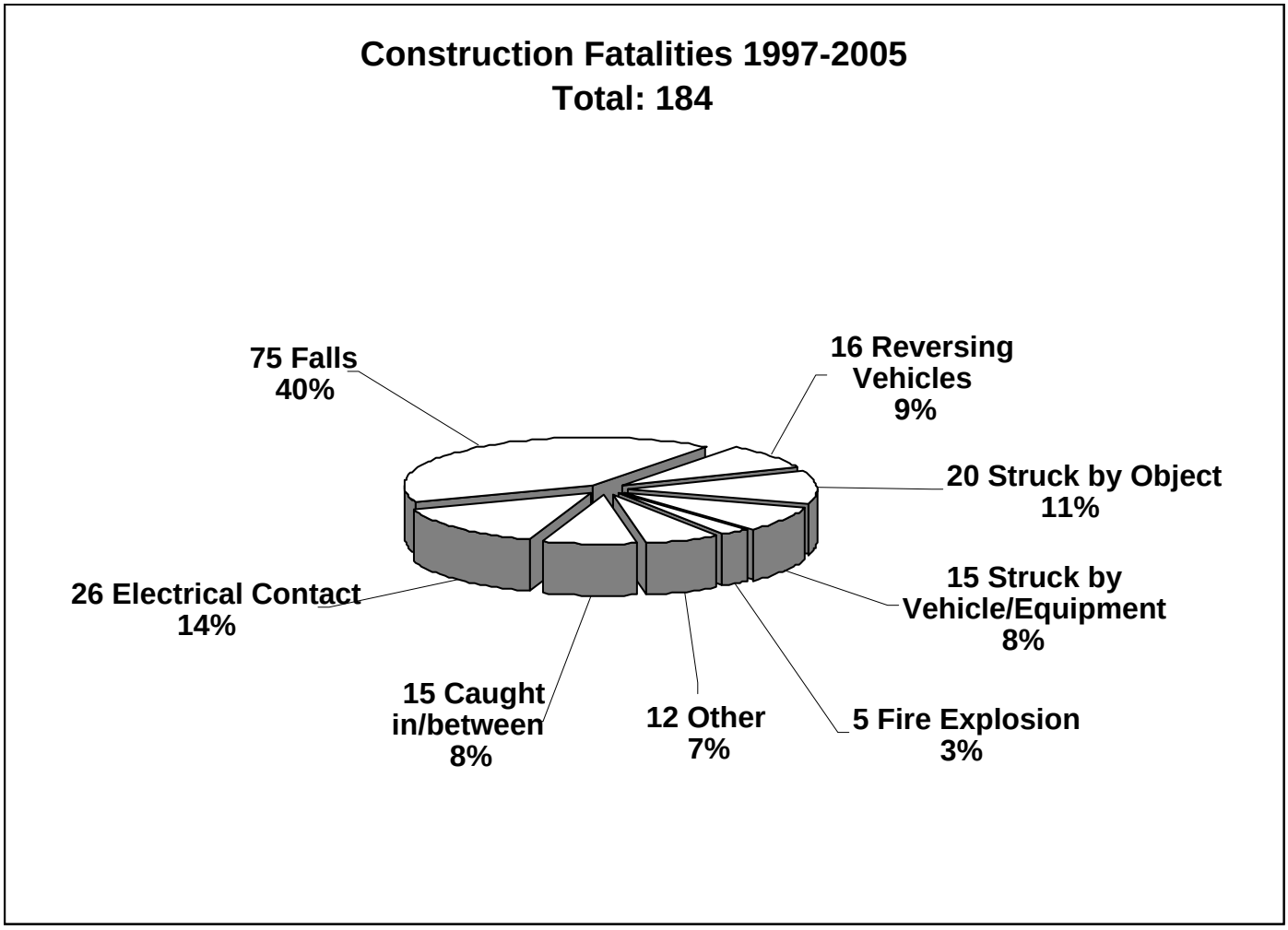
Report on fatal and non-fatal injuries in the Ontario construction industry

Prepared by the Construction Safety Association of Ontario for the Provincial Labour-Management Health and Safety Committee

January 2006



This chart shows the causes of the 184 deaths by injury from 1997 to 2005. The pie pieces show the proportion of total deaths for each cause of injury.

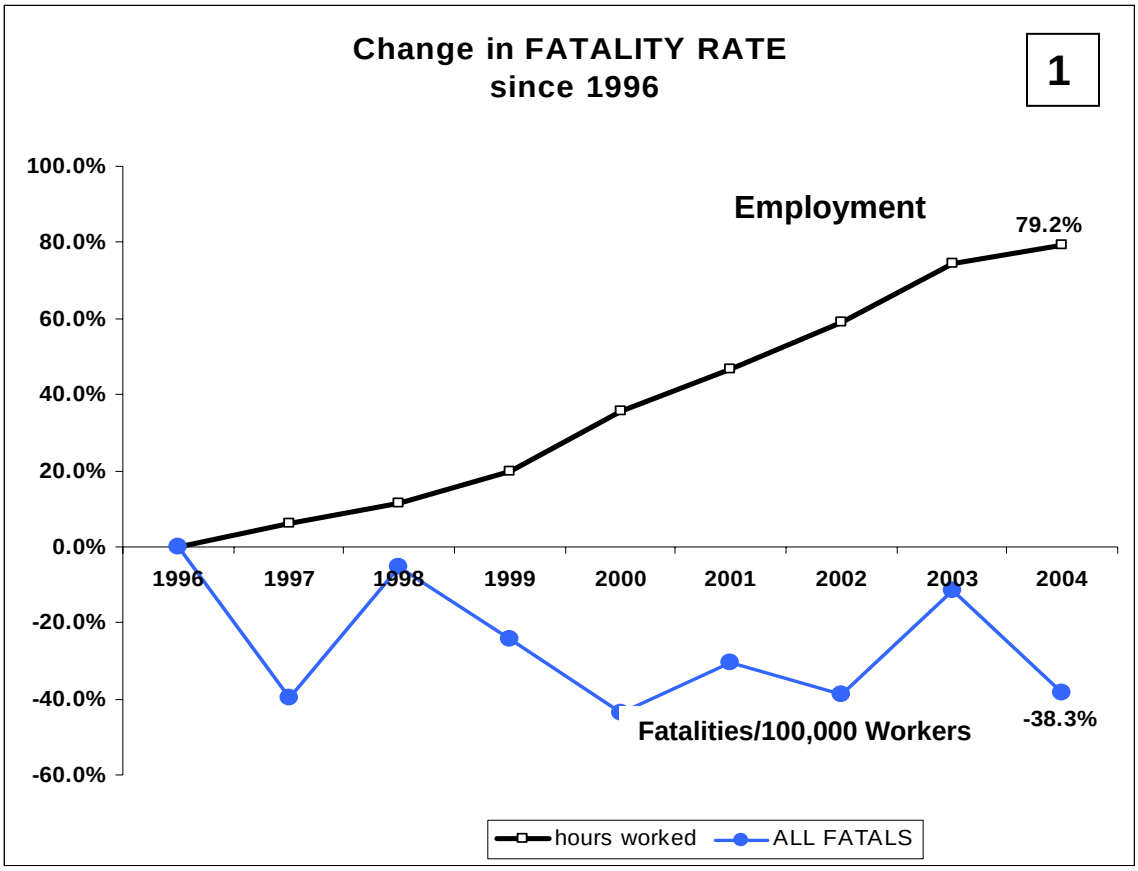


Figure 1

The blue dots show the change in the fatality rate from 1996. The black line shows the change in construction employment from 1996.

The fatality rate is the number of deaths per year divided by the number of workers, and then expressed as a number of deaths per 100,000 workers. This allows comparison between years of high and low employment.

Although the fatality rate has gone down since 1996, the pattern is erratic. Notice the spike in 2003 when there were 30 fatalities—an unusually high number. On average, the fatality rate has not shown a clear decrease or increase since 1997-1998.

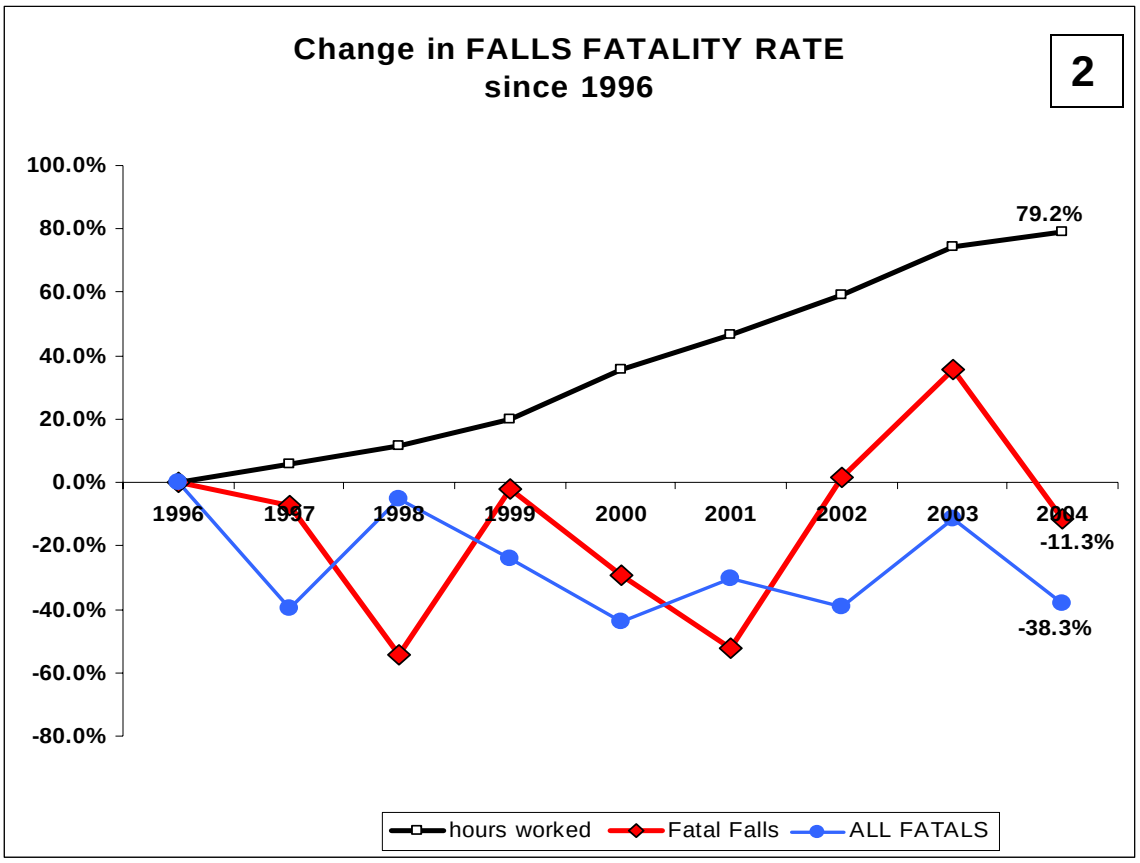


Figure 2

The rate of fatal falls (the number of fatal falls per 100,000 workers) is marked in red on top of the data from Figure 1. The trend of fatal falls is erratic, but when averaged out, the rate hasn't changed much since 1996-1998. Notice the spike in 2003 when 16 workers died from falls.

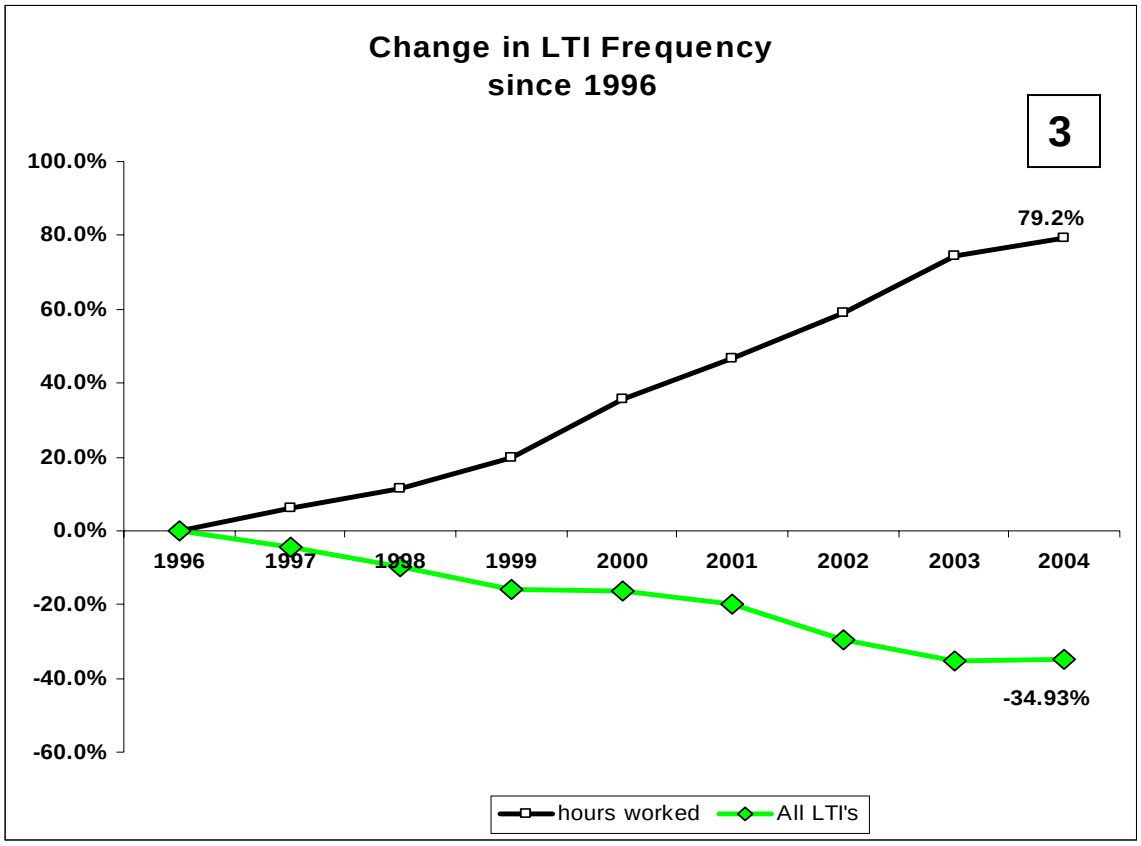


Figure 3

This graph shows a steady decline in the frequency of lost-time injuries (injuries per 100,000 workers) since 1996.

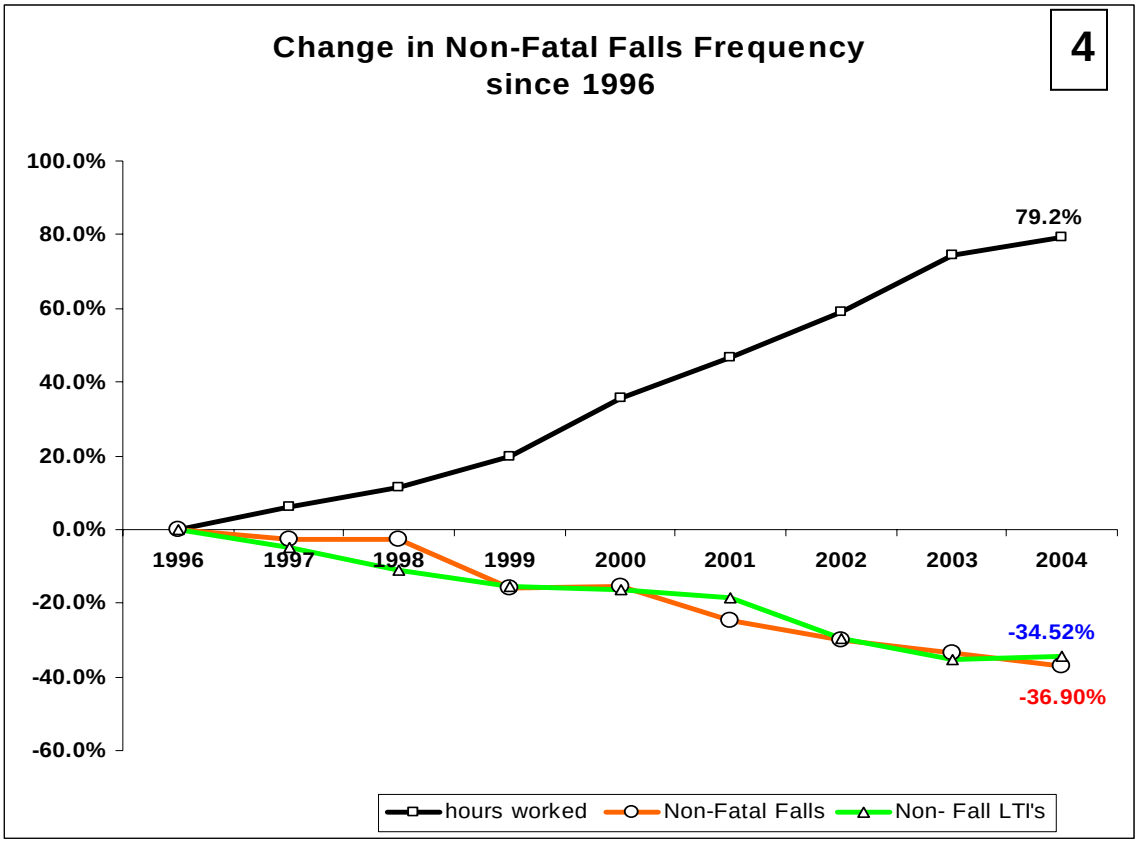


Figure 4

The red line shows a steady decline in the rate of lost-time injuries caused by falls (fall LTIs per 100,000 workers) since 1996.

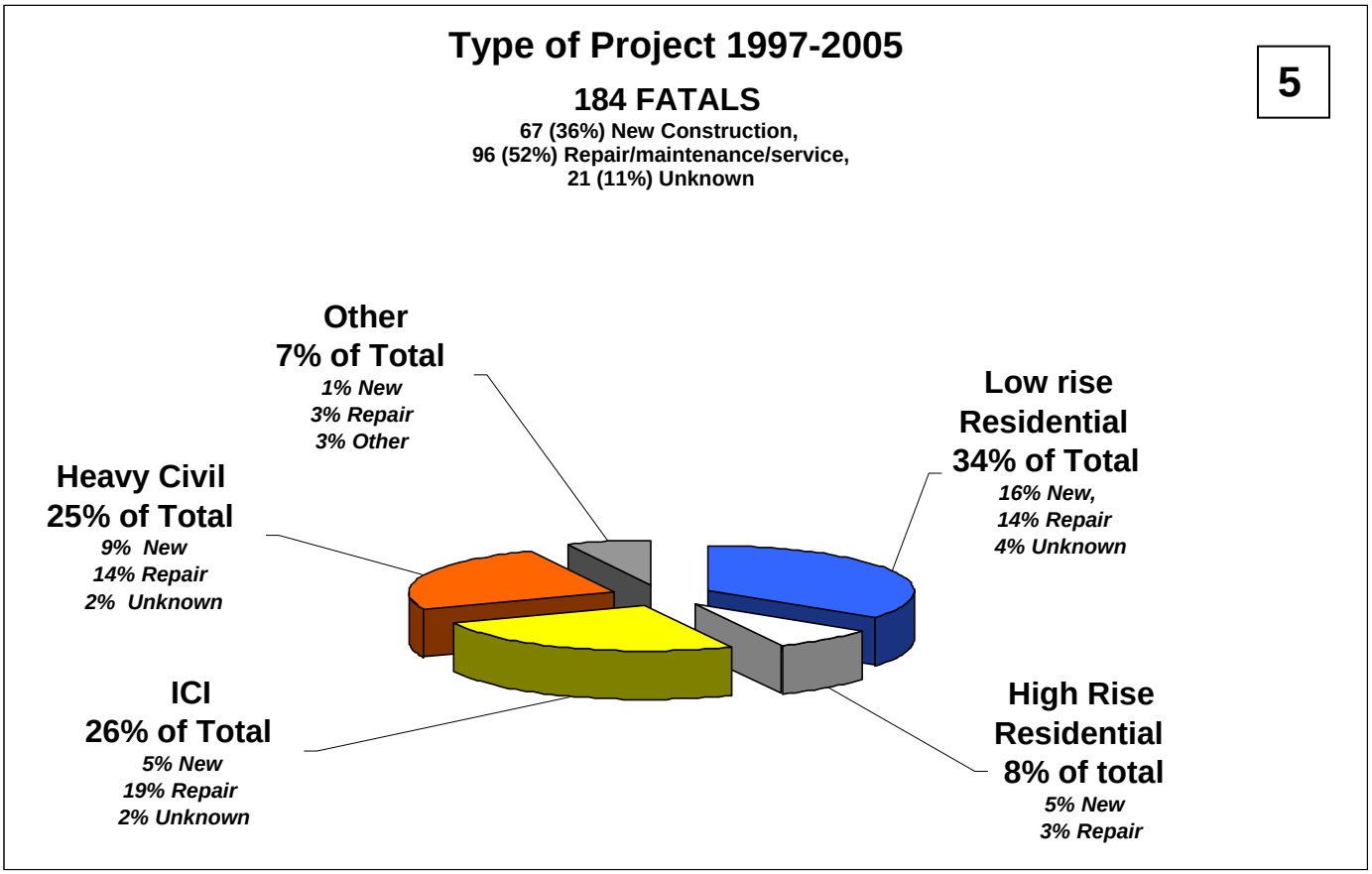


Figure 5

This chart shows the types of construction projects where the 184 deaths occurred. There are 5 types of projects: low-rise residential, high-rise residential, ICI (industrial, commercial, institutional), heavy civil, and other. Within these types, projects can be new construction, repair/maintenance/service, or unknown.

Most heavy civil and ICI fatalities occurred during repair/maintenance/service work, while low-rise residential fatalities were evenly split between new construction and repair.

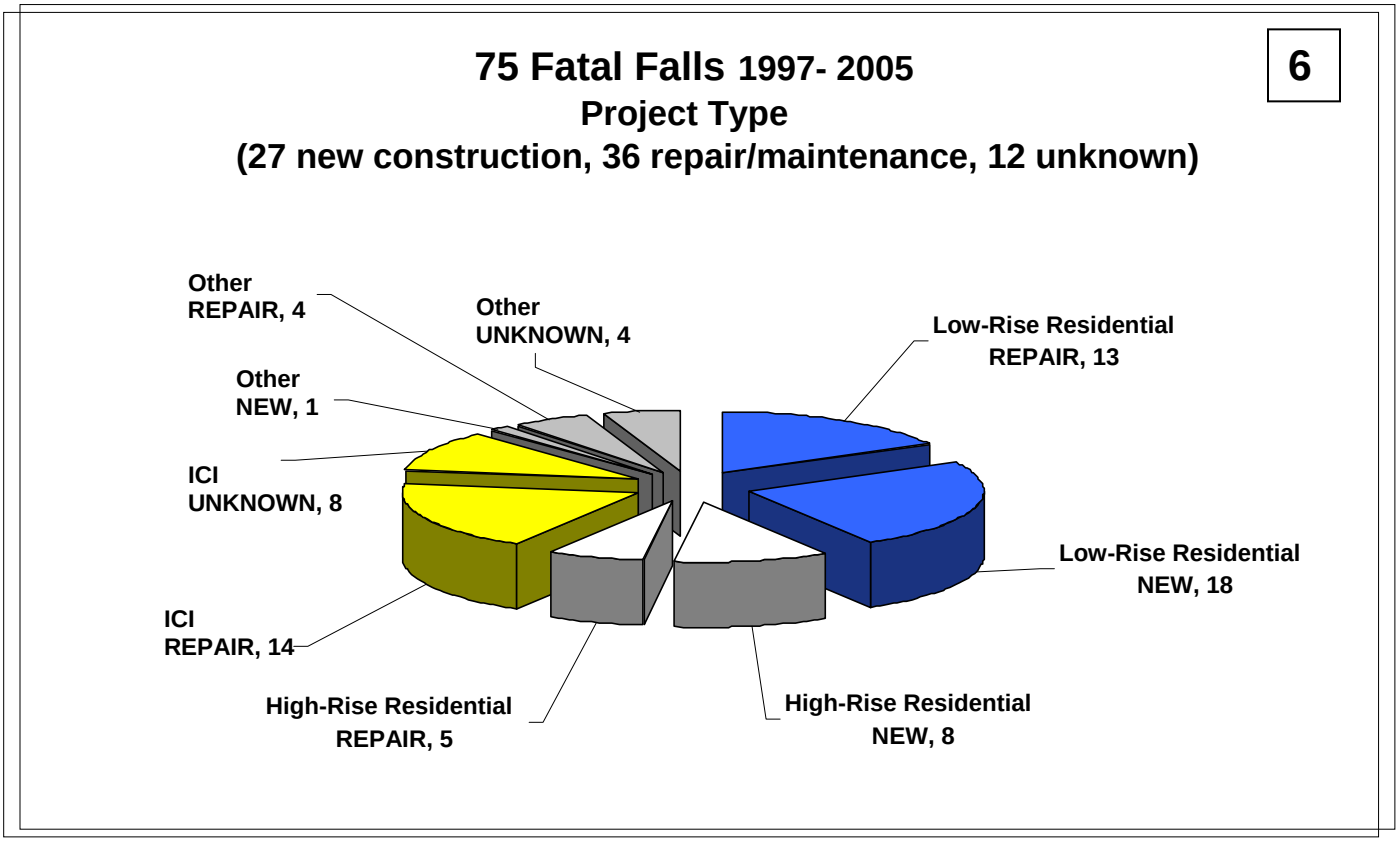


Figure 6

This chart shows the types of construction projects where the 75 fatal falls occurred between 1997 and 2005. The project types are the same as those used in Figure 5. Low-rise residential projects saw the most falls (31 out of 75), followed by ICI projects (22 out of 75).

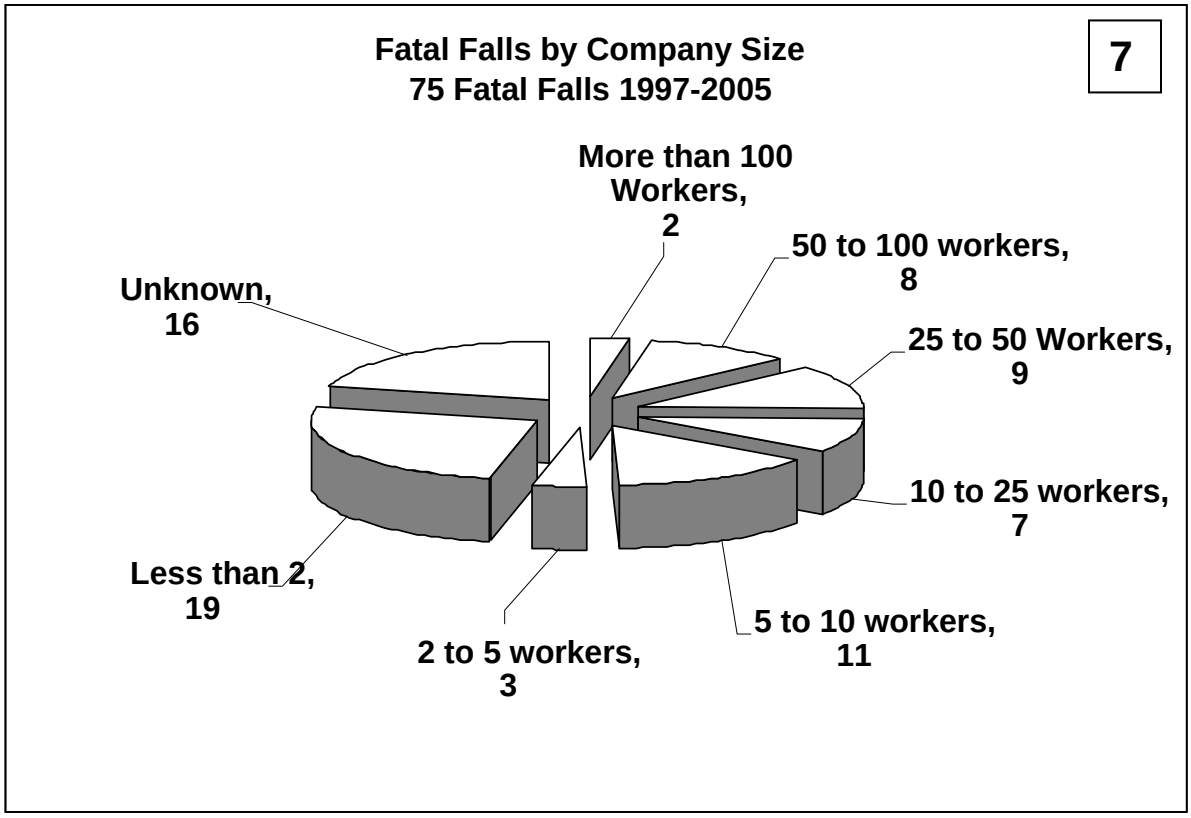


Figure 7

The 75 fatal falls are grouped according to company size. Note that two fatal falls occurred in firms having more than 100 workers, while 22 fatal falls occurred in companies of 5 workers or less.

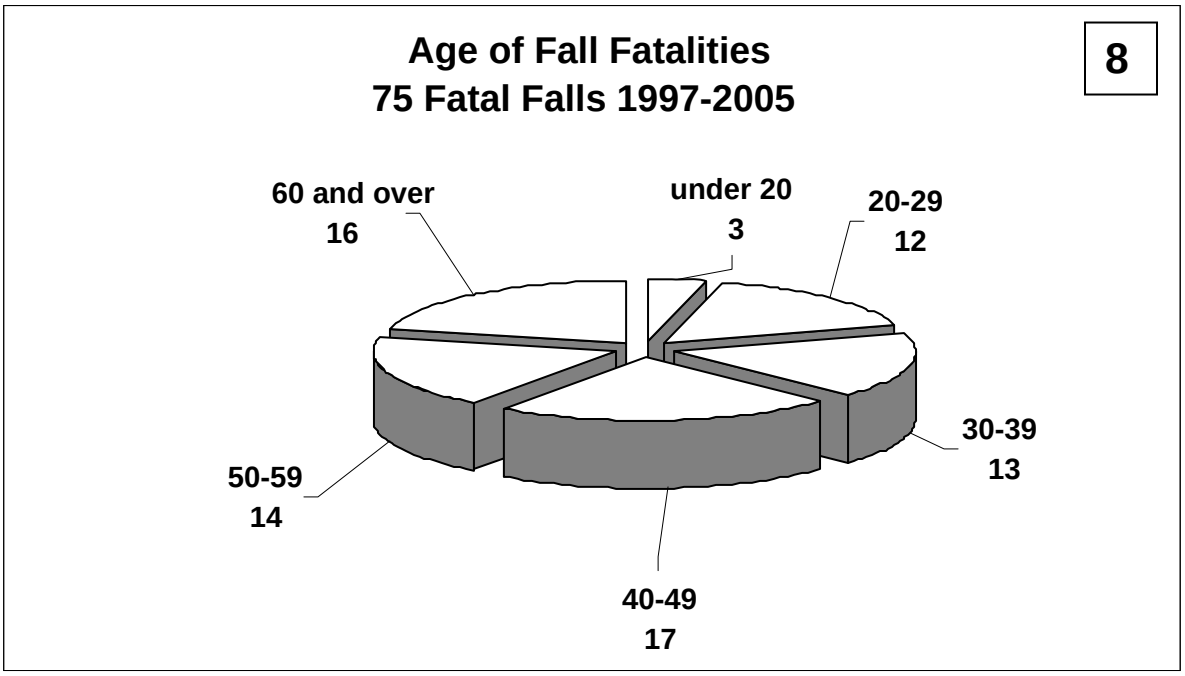


Figure 8

This chart groups the 75 fatal falls according to the workers' age class. The statistics are approximately evenly distributed among age classes. This may mislead you. You must take into account that there are fewer older workers than younger workers. This means that older workers are suffering a disproportionate amount of fatal falls. The age distribution charts (Figures 11 and 12) make this point clearly.

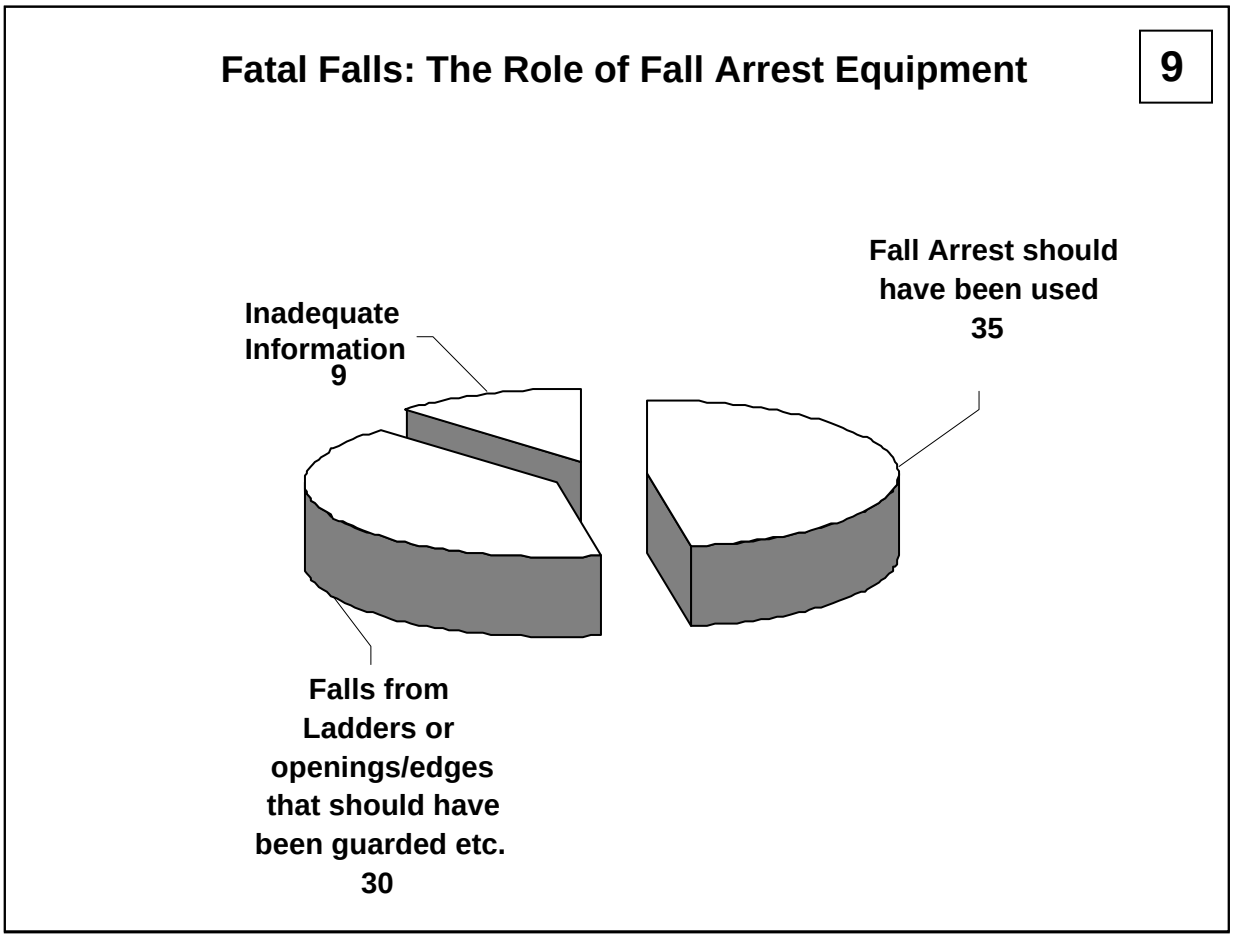


Figure 9

This chart shows that out of the 75 fatal falls from 1997 to 2005, roughly half could have been prevented by fall-arrest equipment. Thirty of the falls occurred in contexts where the worker would not normally have worn fall-arrest equipment—falls from ladders or from levels where guardrails should have been installed, etc.

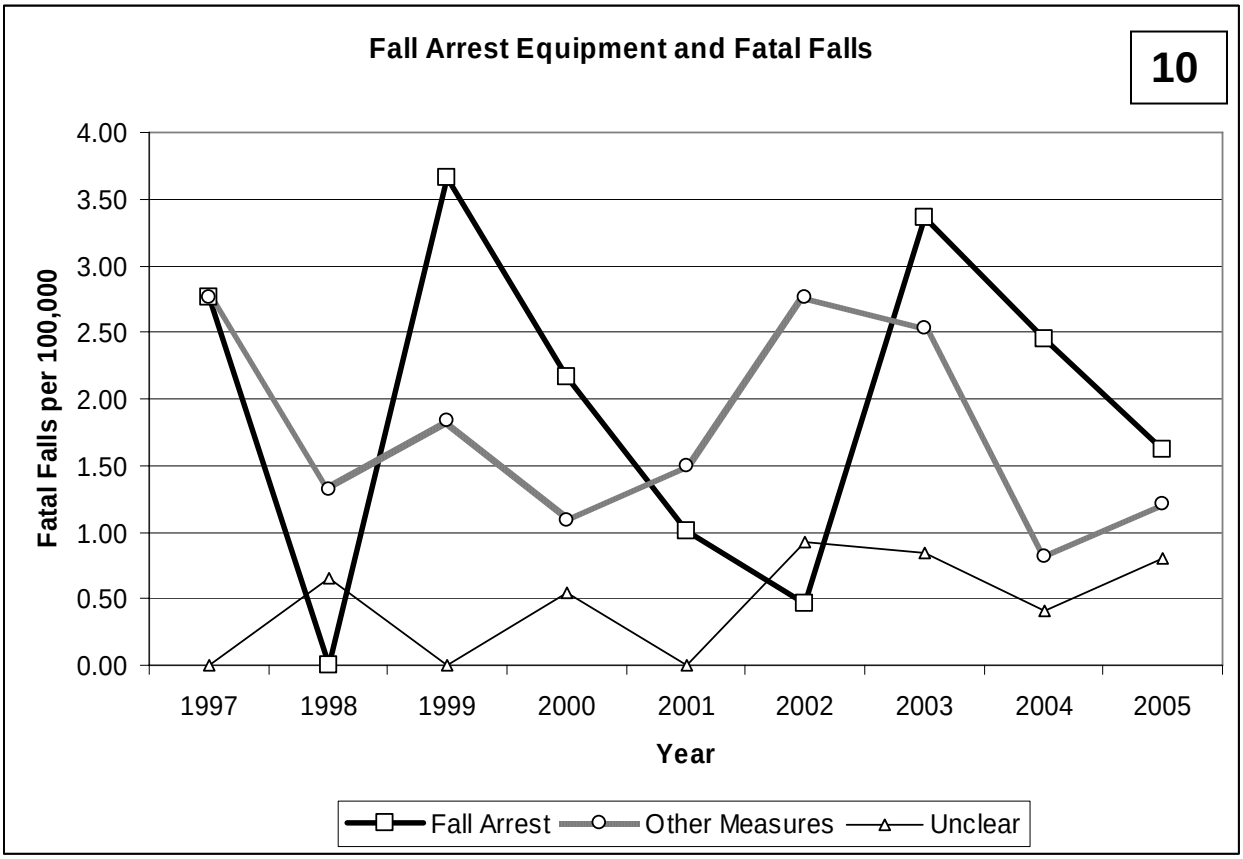


Figure 10

This graph plots

- the rate of fatal falls which could have been prevented by fall arrest equipment
- the falls where fall arrest would not normally be used ("Other Measures")
- the falls where the appropriateness of fall arrest is unclear.

Although the lines are erratic, we can average the values. The averages suggest that falls preventable by fall arrest and falls where fall arrest would not normally be worn occurred at about the same rate.

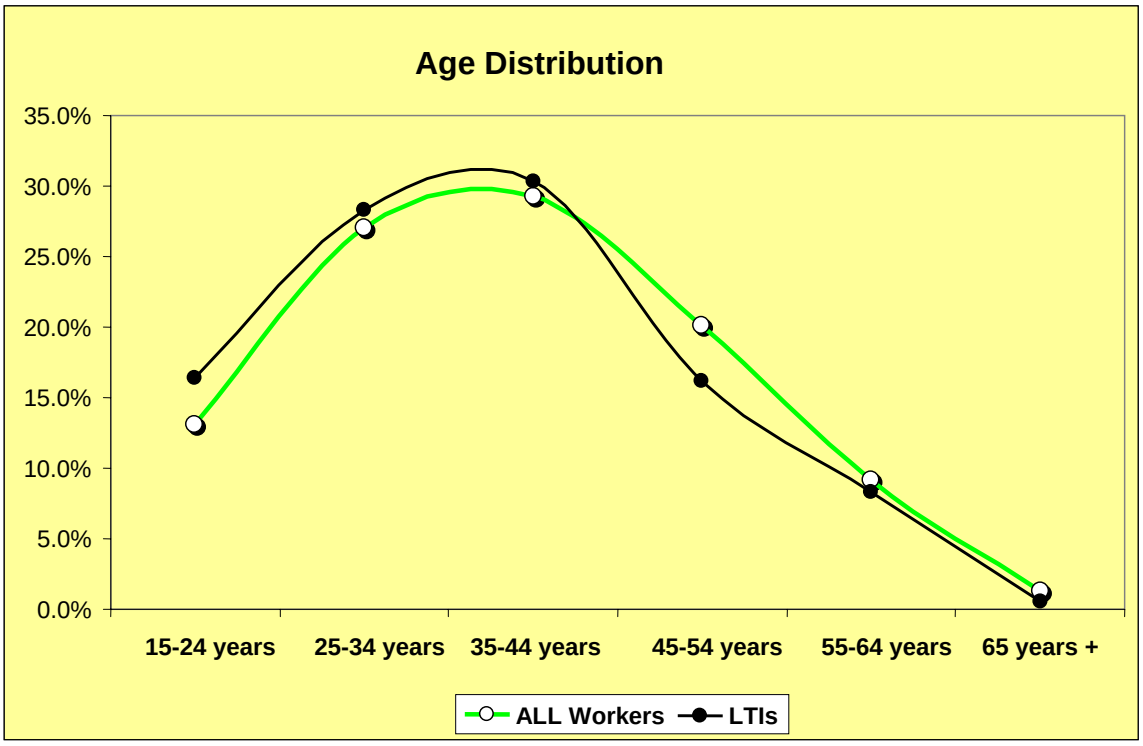


Figure 11

The green line shows the age distribution of construction workers in Ontario. The black line shows the age distribution of workers suffering lost-time injuries. The curves are similar, meaning that each age class suffers an amount of lost-time injuries proportional to its numbers in the construction workforce.

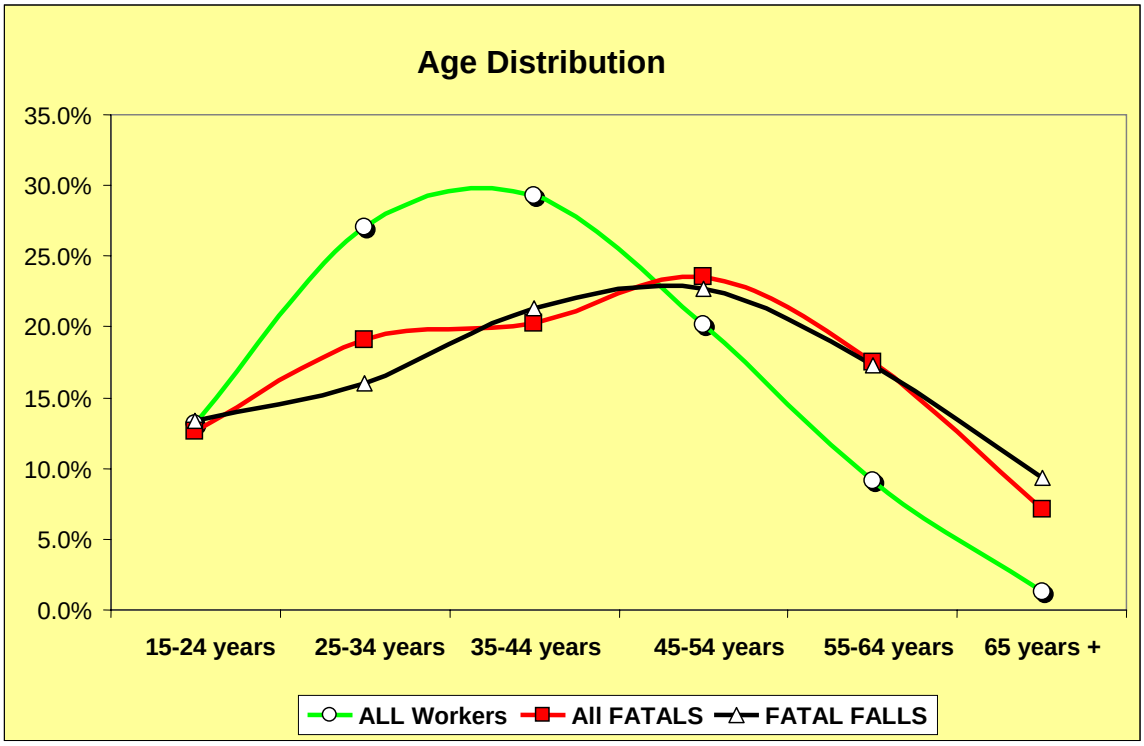


Figure 12

The green line shows the age distribution of construction workers in Ontario, the red line shows the age distribution of all fatal injuries, and the black line shows the distribution of fatal fall injuries. Although workers from 25 to 44 years make up close to 30% of the construction workforce, they suffer about 20% of fatalities. In contrast, workers older than 45 years suffer more fatalities than their proportion in the workforce. This means that older workers are more likely than younger workers to die on construction sites.

References

Fatality Data: CSAO Construction Fatality Database (CSAO/MoL data)
Non-Fatal Lost Time Injury Data: WSIB Enterprise Information Warehouse (EIW)
Employment Data: WSIB EIW and StatsCanada Employed Workforce Survey Data