Construction Safety Involving Working at Height for Residential Building Repair and Maintenance


Research project jointly funded by CII-HK and The Hong Kong Polytechnic University

Background

Urban decay, premature ageing of buildings and poor living environment have been a growing concern in Hong Kong for a long time. About one third of the housing blocks in Hong Kong have been completed for more than 20 years. There is an increasing demand on repair and proper maintenance of existing housing stocks. Although the number of industrial accidents in the construction industry has decreased from 11,925 in 2000 to 3,833 in 2004, which represents an encouraging drop of almost 68% (Labour Department, 2006), construction safety for repair and maintenance of existing housing stocks requires extra attention because this sector employs a large number of unskilful labour and is not subject to the same stringent safety regulations as in new construction.

There have been many incidents of workers being seriously injured or killed by fall of person from height. Fall of person from height always represents a large proportion of the fatal accidents in repair and maintenance works that was 55% of the total number of fatal accidents in repair and maintenance works from 2002 to 2004 (Labour Department, 2006).

The percentage of fatality due to fall of person from height is disturbingly high (Table 1). From 2000 to 2004 there were a total of 123 fatal accidents in the construction industry in which 54 of these accidents were a result of fall of person from height, almost 50% of the fatal accidents. During the same period the total number of repair and maintenance fatal accidents were 40. Amongst these 22 were resulted from fall from height that was over half of the fatal accidents. Out of the 54 fatal fall-from-height accidents, 22 (over 40%) occurred during repair and maintenance works. The statistics show that the proportion of fatal accidents due to fall from height remains high.

Table 1: Fatal accidents due to fall of person from height from 2000 to 2004 (Labour Department, 2006)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2001</td>
</tr>
<tr>
<td>In repair and maintenance works</td>
<td>4</td>
</tr>
<tr>
<td>In the construction industry</td>
<td>13</td>
</tr>
</tbody>
</table>
Compounding to these distressing figures is the inherent difficulties in maintaining the ageing building stock in Hong Kong. More than 10,000 housing blocks out of the total 38,400 private multi-storey buildings do not have owners’ corporations and are not served by property management companies (Housing Planning and Lands Bureau, 2003). Construction safety for repair and maintenance of existing housing stocks requires extra attention because this sector employs a large number of unskilful labours and is not subject to the same stringent safety regulations as in new construction. The need to address these alarming issues is all the while more urgent. This research is launched to improve construction safety involving working at height for repair and maintenance works in residential buildings.

**Significance of the Project**
The construction industry has been identified as one of the most hazardous industries (Labour Department, 2005). As discussed earlier in this paper the percentage of fatality due to fall of person from height in repair and maintenance works is disturbingly high. Although there are many safety measures and techniques available in the market, they have been proved to be insufficient to reduce the number of fatalities due to accidents related to fall from height. The proposed study can critically review all these problems and provide economical, social, legal, and technological solutions to preventing the recurrence of similar accidents in residential building repair and maintenance. In addition, there is no previous study performed to look into the situation of fall from height during repair and maintenance works in Hong Kong. Hence, this study is original and demanding.

**Aims and Objectives**
The study aims at improving construction safety involved in working at heights for residential building repair refitting and maintenance works. It sets out to identify situations where such works are necessary and to investigate the causes of any associated accidents and problems. The objectives of the study include:

- To conduct a full scale investigation to identify situations where working at height are necessary in residential building repair and maintenance and to establish data on the scale of their significance in quantitative terms;
To investigate the causes of these accidents;
To recommend practical, cost-effective and user-friendly technological solution to the problems;
To recommend precautionary measures so as to prevent from occurrence of the problems;
To propose a viable regulatory framework to address the legal, economic, and social aspects of the problems.

Outcome and Deliverables
The proposed deliverables of this study include the following items:
- A comprehensive database of the types of fall of person from height accidents associated with ageing buildings, both technological and otherwise, and their scale.
- Provision of safety practice notes for activities involving working at height for building repair and maintenance, where practicable, and discussion of the issues where not practicable.
- Proposals for viable approaches to address the economic, social and legal issues involved in implementing technological solutions and proposals for preventing the occurrence of similar accidents in residential building repair and maintenance.

Benefits to Community / Government
In Hong Kong the number of fall accidents related to repair and maintenance works has been increasing. The present study aims to seek solution to the current situation. The findings from this study will benefit the industry by proposing relevant tailor-made techniques, practices and measures to reduce fall accidents. No other studies have touched on reducing fall accidents related to repair and maintenance works in Hong Kong. The findings will serve as resourceful information to local practitioners.

References