



*Project Title:* Lift Car Brackets Installation Robot Assembly  
*Principal Investigator (PI):* Mr. LEE Hoi Yiu  
*Project ID:* CICR/03/20  
*Research Institution:* Hip Hing Engineering Co. Ltd.  
*Subject Area:* Construction Safety  
*Duration:* 24 months

## **Background**

In the concrete rectification works and installation of brackets / guide rails inside lift shafts, workers have to work in a high risk working environment exposing to the following risks: falling objects, working at height, confined working space, etc. Also, there has been a shortage of skilled workers, and this has caused delay to lift installation works, resulting in the delay of statutory submission and project completion.

## **Objectives**

- i) Develop a robotic arm mounted on a gondola platform to be installed inside a lift shaft for the concrete rectification works on the lift shaft and installation of lift guide rail brackets.
- ii) Develop two stages of robotic arms for various jobs listed below.
  - 1. Chiselling and grinding of bulging concrete surfaces;
  - 2. Grinding of step joints;
  - 3. Backfilling of tie bolt holes;
  - 4. Drilling of bracket holes; and
  - 5. Fixing of guide rail brackets.

## **Key Deliverables**

- ♦ A prototype of robotic arm for lift car bracket installation.

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