

J. HUH, S. MOON, S. KIM, D. HONG. **Development of cleaning system installed in horizontal moving system for maintenance of high-rise building.** *Gerontechnology* 2012;11(2):374; doi:10.4017/gt.2012.11.02.484.00 **Purpose** Nowadays, in modern cities many high-rise buildings are equipped with curtain-walls^{1,2}. Before the advent of robot technology, building maintenance experts maintained curtain-walls periodically. However, their work is very dangerous and there are many falls and accidents in the workplace. Because of this danger, the manual maintenance process is very expensive. In order to solve this problem, our paper suggests a full-automatic cleaning system which is installed as a built-in guide rail robot system. **Method** The built-in guide rail robot system consists of two moving systems: a vertical and a horizontal moving system. Especially important is the horizontal moving cleaning system. There are three units in the cleaning system: a roll-brushing unit, an injection unit, and a squeezing unit. These units work in a particular order. Having two moving systems extend the cleaning area, and the vertical moving system is equipped to charge necessary supply material. **Results & Discussion** The design suggested in this paper is suitable for high-rise building maintenance. Not only is this robot automatically workable, but it also saves maintain building time. Therefore, using this robot, building maintenance is safer and more efficient than using manual labor.

References

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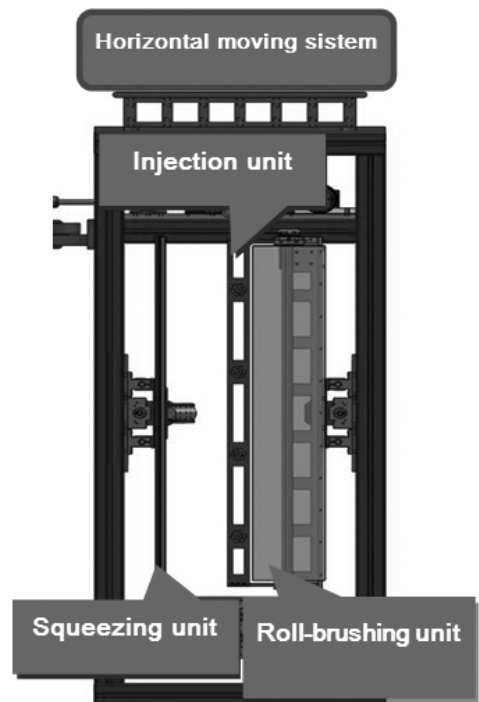


Figure 1. Design of cleaning system which is installed in horizontal moving system of built-in guide rail robot system