

Improvement and field demonstration of in-house developed machinery for automation in building construction and services

Task 1: Automatic wall plastering machine

Task 2: Robotic system for high-rise exterior wall cleaning and painting

Abstract:

Task 1: Automatic wall plastering machine

Plastering work or plastering refers to the construction or ornamentation done with plaster, such as a layer of plaster on an interior wall or plaster decorative mouldings on walls. Manual procedure involves three steps: Mortar Throw, Screeding and Finishing. The construction revolution of today has made the contractors to equip their construction so as to perform the highest output with minimum construction cost. In order to have highest output, parameters like accuracy, precision, quality, and cycle time have to be optimized. This is possible either by automating the process through development of mechanized construction equipment- An automatic wall plastering system.

Task 2: Robotic system for high-rise exterior wall cleaning and painting

A robotic system for high-rise exterior wall cleaning and painting is a cutting-edge technological solution designed to automate and enhance the maintenance of tall buildings. These specialized robots are equipped with advanced

sensors, brushes, and painting equipment, allowing them to navigate vertical surfaces efficiently while cleaning dirt and grime and applying fresh coats of paint. This innovation significantly improves worker safety by reducing the need for manual labor at dangerous heights and ensures buildings remain aesthetically pleasing and well-maintained.