7.2.4 Emerging job roles dashboards

Robotic Engineer

Estimated Time Horizon: Short-term

Trends Impacting This Role

Technology trends such as BIM Technology, Digital Twin, Modular Construction, Remote Monitoring, Robots & Automation and 5G, IoT & Smart Buildings.

Other Considerations

Companies who seek to adopt and/or enhance existing robotics to alleviate labour shortage issues at construction sites, may leverage this specialize job role.

Responsibilities of the Role

The Robotic Engineer is responsible for designing and developing prototypes and models of robotic equipment for use at construction sites. The job holder also builds and tests the machines and maintains the software used to control these equipment. The job holder is involved in the development of algorithms to improve and refine the navigation techniques of the construction robotic equipment, so as to better address and resolve labour shortage issues at construction sites.

Job Tasks

- Conceptualise, design and develop prototypes and models of construction robotic equipment
- Monitor, maintain, and enhance operational safety and efficiency of construction robotic equipment
- Provide technical support, troubleshoot, configure and debug construction robotic equipment and implement any necessary modifications
- Work with clients, engineers, developers, project managers, and stakeholders to understand the requirements and demands of construction robotic equipment and keep abreast of technology trends for application
- Collaborate with academia to translate academic research into production-ready systems and models

Technical Skills and Competencies

Continuous Improvement Management	Design for Manufacturing and Assembly	Emerging Technology Synthesis	Engineering Support Management
Equipment and Systems Installation and Commissioning Management	Equipment and Systems Testing	Equipment Qualification	Integrated Digital Delivery Application
Internet of Things Management	Machine Learning Application	Programming and Coding	Project Risk Management
Quality System Management	Robotic and Automation Technology Application	Site Assessment and Analysis	Stakeholder Management
Technical Inspection	Workplace Safety and Health Culture Development	Workplace Safety and Health Framework Development and Implementation	

Critical Core Skills

Collaboration	Communication	Digital Fluency	Problem Solving
Transdisciplinary Thinking			

Note: *Skills highlighted are not exhaustive but have been preliminarily identified as potentially most pertinent to the job role and may be adjusted based on individual organisational strategy and needs.*