

7.2.1 Job Dashboards

Assistant Mechanical Engineer/Assistant Electrical Engineer/Technical Executive (Mechanical Engineering)/Technical Executive (Electrical Engineering)

Megatrends impacting the Job Role in Short to Medium-Term				
COVID-19	Multi-Skilling	Sustainable Construction/ Buildings	Value Chain Aggregation & Integration	Workforce Challenges

Impact Assessment
<p><b>MEDIUM</b> degree of change in tasks</p>

Technology Trends impacting the Job Role in Short to Medium-Term			
BIM Technology	Data Analytics & AI	Digital Twin	Remote Monitoring
VR/AR	5G, IoT & Smart Buildings	Modular Construction	

Today

This job role is responsible for supporting the planning and development of projects. Job holders assist in the development of engineering designs based on project requirements.

In the Future

This job role may **leverage technology to augment the planning and development** of projects, with tasks such as calculations and data gathering being able to be automated. Job holders may see a **shift in focus towards value adding in engineering design development tasks**, and **understanding and applying technology to ensure seamless and efficient coordination with relevant stakeholders** for successful project design execution.

Job Tasks Today	Impact at Task-level / Future view of Job Tasks	Time Horizon
Support project scoping and requirements definition	<ul style="list-style-type: none"> <li>Job holders will continue supporting feasibility studies and may <b>leverage technology to automate tasks such as data gathering and report generation of feasibility studies</b>. Job holders will thus need an understanding of the application of such digital tools and platforms.</li> <li>Job holders may see a <b>shift in focus to supporting solutions development and assisting in effective coordination</b> among relevant stakeholders.</li> </ul>	Medium-term
Assist in design development	<ul style="list-style-type: none"> <li>Data Analytics &amp; AI may automate load analyses and the calculations for equipment selection.</li> <li>Job holders will therefore be able to shift focus to other related tasks in supporting design development, assisting conduct of simulation modelling and analyses, and supporting design changes and service coordination.</li> </ul>	Short-term
	<ul style="list-style-type: none"> <li>Job holders will continue to assist in the development of engineering designs, and may need to <b>understand and leverage technology to augment the design process to be more efficient and effective</b> (e.g., programming tools to support design changes).</li> <li>Job holders may need to apply latest trends and regulations (e.g., sustainability and maintainability considerations) in assisting design development</li> </ul>	Short-term

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Job Tasks Today	Impact at Task-level / Future view of Job Tasks	Time Horizon
Assist in tendering process	<ul style="list-style-type: none"> <li>Job holders may need an <b>understanding of smart contracting technology</b> (e.g., Blockchain) to <b>support preparation of tender terms, drawing and specifications on alternative platforms.</b></li> <li>Job holders may also be expected to <b>use digital tools to enhance the efficiency of preparing baseline budgets, schedules and project success metrics.</b></li> </ul>	Medium-term
Assist in project execution	<ul style="list-style-type: none"> <li>Job holders will continue execution of testing and commissioning processes. Job holders may need an <b>understanding of digital tools and platforms</b> (e.g., BIM Technology) to <b>prepare shop drawings and handover documentation for review.</b></li> <li>Job holders may also need to <b>use digital communication technology to liaise with project stakeholders</b> for matters related to execution of project designs.</li> </ul>	Short-term
	<ul style="list-style-type: none"> <li>RPA may automate the compilation of defect reports.</li> </ul>	Medium-term

The following TSCs/CCSs have been identified as in-demand/emerging for the job role going forward:

In-demand Technical Skills and Competencies		
Analytics and Computational Modelling	Building Information Modelling Application	Computational Design
Construction Technology	Data Collection and Analysis	Design for Maintainability
Design for Manufacturing and Assembly	Green Building Strategy Implementation	Integrated Digital Delivery Application
Regulatory Submission and Clearance	Technology Application	
Emerging Technical Skills and Competencies		
Critical Thinking	Environmental Sustainability Management	Programming and Coding
Sustainable Engineering	Tunnel Engineering Management	
Emerging Critical Core Skills		
Transdisciplinary Thinking		

