



CONSTRUCTION & MANUFACTURING

This sector focuses on the design, construction, and production of infrastructure and products, utilizing advanced technology and sustainable practices

KEY AREAS

Infrastructure development, product design, automation, quality control, and sustainable manufacturing

Popular Careers

Sustainable Building Engineer, Robotics Technician, Construction Robotics Operator, BIM (Building Information Modeling) Specialist, Sustainable Construction Consultant

Skills needed

Technical expertise, project management, problem-solving, knowledge of automation systems, and green building techniques

Why it matters

The sector builds the physical world around us, from homes to commercial products, directly impacting economic and social development

Future look

Increased focus on sustainable practices, digital twins, and automation in construction and manufacturing will transform these industries, requiring a tech-focused and innovative workforce

SUSTAINABLE BUILDING ENGINEER



Sustainable building engineers focus on creating environmentally-friendly buildings by integrating sustainable materials and energy-efficient designs. Their role includes evaluating the environmental impact of projects and implementing eco-friendly construction practices to reduce carbon emissions. They ensure structures are designed for minimal energy use and maximum resource efficiency

Working conditions

They often split their time between office environments and active construction sites. Site visits may involve exposure to varying weather conditions and potentially hazardous building areas

Tasks

They evaluate building materials for sustainability, analyze energy usage, and work with architects to integrate green technologies. They oversee projects to ensure adherence to eco-friendly standards, monitor resource efficiency, and make adjustments to maximize energy savings and reduce emissions

Skills

Knowledge of engineering, creativity, problem-solving, observation, adaptability, and teamwork

Education

Typically requires a degree in Civil, Environmental, or Mechanical Engineering. A master's in Sustainable Design or Green Building, along with certifications, is often beneficial

Opportunities to work in architecture, construction, and urban development, with roles in both private companies and public projects. They can work as employees or as freelance consultants, or even start their own eco-design companies

ROBOTICS TECHNICIAN



Robotics technicians work with robots in fields like manufacturing, healthcare, and logistics, handling the setup and smooth operation of robotic systems. They often perform routine maintenance, program robots for specific tasks, and ensure they meet the needs of each application area

Working conditions

Primarily work in industrial settings with long hours standing, handling heavy equipment, and managing noisy environments. There may be pressure to resolve issues quickly to avoid production delays, and it can require lifting heavy equipment

Skills

Organisation, problem solving, ICT – Digital skills, physical – manual competence, troubleshooting skills, and attention to detail

Education

An associate degree or technical certification in Robotics Technology, Mechatronics, or Engineering is standard. Some positions may value specialized certifications in robotic systems or additional experience with advanced programming

Tasks

They assemble and install robotic systems and ensure each is calibrated for precise work, like welding or product assembly. They frequently test, troubleshoot, and repair robots, updating software to keep robots efficient and up-to-date.

Opportunities

Robotics technicians have career options in manufacturing, healthcare, automotive, and tech industries, with potential roles in both private companies and government agencies. They may work as employees or independent contractors