

Applicant Name: Richard Banne



Engineering Occupation: Professional Engineer
(ANZSCO Code: 233999 – Engineering Professionals NEC)

1. Continuing Professional Development (CPD)

I have continuously improved my engineering knowledge and skills through formal training, workshops, seminars, and self-learning activities. These activities helped me stay aligned with modern engineering tools, safety standards, and management practices.

- Advanced AutoCAD Training – 20 Hours – Autodesk Online (March 2023)
- Workplace Safety & Risk Assessment Workshop – 12 Hours – NAU Engineering (July 2023)
- Project Management Fundamentals – 15 Hours – Coursera (Jan 2024)
- Sustainable Engineering Practices Seminar – 10 Hours – NAU University (May 2024)

These professional development activities enhanced my design accuracy, safety awareness, project coordination, and sustainable engineering approach.

2. Career Episode 1 – Solar Power System Design

Introduction

Project Title: Design and Implementation of 50kW Solar Power System

Duration: Jan 2022 – June 2022

Location: Arizona

Organization: Henderson Engineering Inc

Background

The objective of this project was to design and install a commercial solar power system to reduce grid dependency and promote renewable energy usage. The system needed to ensure energy efficiency, safety, and cost-effectiveness.

Personal Engineering Activity

I conducted a detailed load analysis to determine power requirements. I designed the layout using AutoCAD, selected appropriate panels, inverters, and batteries, and prepared cost estimations. I supervised installation and testing while ensuring

compliance with safety and electrical standards. I resolved voltage fluctuation issues by optimizing inverter configuration.

Summary

The project successfully reduced electricity costs by 40%. It strengthened my skills in system design, equipment selection, and project supervision.

3. Career Episode 2 – Structural Analysis of Multi-Storey Building

Introduction

Project Title: Structural Design of Commercial Building

Duration: Aug 2021 – Dec 2021

Location: Arizona

Organization: Entellus, Inc

Background

The project involved structural analysis and design of a multi-storey building using international building codes and safety standards.

Personal Engineering Activity

I used ETABS software for modeling and performed dead, live, and wind load calculations. I designed beams, columns, and foundations. I coordinated with architects and resolved structural instability issues by modifying column dimensions. I ensured compliance with safety codes.

Summary

The building structure was approved and executed successfully. The project enhanced my analytical, design, and teamwork skills.

4. Career Episode 3 – Industrial Automation System

Introduction

Project Title: PLC-Based Industrial Automation

Duration: March 2023 – Sept 2023

Location: Arizona

Organization: ATS Industrial Automation

Background

This project focused on automating an industrial production line using PLC systems to improve efficiency and reduce manual errors.

Personal Engineering Activity

I programmed PLC logic, configured sensors, and integrated control panels. I conducted testing and troubleshooting, reducing downtime by 30%. I ensured system safety and trained staff on operations.

Summary

The automation improved productivity and system reliability. I gained expertise in PLC programming and industrial control systems.

5. Summary Statement

This report demonstrates how I have applied engineering knowledge, problem-solving skills, and professional conduct across multiple projects.

- Applied engineering fundamentals in solar system design (CE1)
- Solved structural and stability challenges (CE2)
- Implemented automation and improved industrial efficiency (CE3)
- Maintained safety and ethical engineering practices in all projects