

I graduated from QUT in 2023 with an Honours degree in Mechanical Engineering and a Bachelor's degree in Business Management. I am early in my career, with engineering experience in operations at Woodside Energy and in my current position at Veolia Australia and New Zealand (ANZ).

My ambition is to become a chartered engineer who truly enjoys and values his work. What resonates with and excites me the most are difficult yet rewarding tasks, solving problems, working in a friendly environment that fosters learning, continuously progressing, and performing work that aligns with my interests.

I have linked my personal website, which highlights my personal interests, hobbies, and projects. Feel free to check it out! <https://jacobg-p.github.io/personal-website/home/home-about.html>

<b>Work Experience.....</b>	<b>2</b>
Graduate Engineer, Veolia (Sep, 2024 - Current).....	2
Rotation 2: Northern Peninsula Area Water Supply Scheme (NPAWSS) (Sep, 2024 - Current).....	2
Graduate Engineer, Veolia (Jan, 2024 - Current).....	2
Rotation 1: Northern Peninsula Area Water Supply Scheme (NPAWSS) (Jan, 2024- Sep, 2024)..	2
Cadet Engineer, Veolia ANZ (Jun, 2023 - Jan, 2024).....	3
Vacation Student, Woodside Energy (Nov, 2022 - Feb, 2023).....	4
Delivery Driver, Dominos The Gap (Jan, 2018 - Nov, 2022).....	5
<b>Education.....</b>	<b>5</b>
<b>Skills.....</b>	<b>5</b>
Software Experience(s).....	5
Additional training.....	6
<b>Personal.....</b>	<b>6</b>
Personal Projects.....	6
Electric E36 Remote Control (RC) Vehicle (In Progress).....	6
OBDII (Hold).....	6
Custom Gear Shifter (Hold).....	7
Automatic Blinds (Hold).....	7

## Work Experience

### **Graduate Engineer, Veolia (Sep, 2024 - Current)**

#### ***Rotation 2: Northern Peninsula Area Water Supply Scheme (NPAWSS) (Sep, 2024 - Current)***

I am continuing support at the NPAWSS for my second rotation. The team has several major upcoming projects, where I will be predominantly working on:

- Construction, installation, and commissioning of an emergency generator to ensure power supply to the plant in case of loss of electricity.
- Installation and commissioning of electrically actuated valves at the communities' reservoirs.
- Design and installation of ladders for the communities' reservoirs.
- Redrafting Electrical & Instrumentation drawings to accurately reflect the site.
- Restructuring asset tags and P&IDs.
- Bamaga WTP upgrade, including changes to MicroFiltration system, associated chemicals, code, process, and raw water capacity at the Jardine Pump Station.
- RTU & PLC replacement.
- Jardine generator fence installation.
- CMF Replacement Stage 1.

#### **Completed Projects:**

- Commissioning and closeout of the Bulk Flow Meter Replacement.
- Completion of the Air Compressor Replacement and Air Compressor Shed project.

### **Graduate Engineer, Veolia (Jan, 2024 - Current)**

#### ***Rotation 1: Northern Peninsula Area Water Supply Scheme (NPAWSS) (Jan, 2024-Sep, 2024)***

I transitioned into Veolia's Graduate Program, continuing support at the NPAWSS. Key experiences

and achievements include:

- Investigating the Stainless Steel Spiral Wound pipework, which causes significant downtime and inefficiencies due to leaks. The project is still in development. I obtained accurate spool piece drawings to reduce risks and costs through professional 3D modelling.
- Conducting a scheme-wide Annual Conditional Assessment with a chartered Mechanical Engineer, documenting findings that were used in the 2024-2025 Minor Capital Work (MCW) proposal to the client.
- Finalising the list of projects and securing approval for the 2024-2025 MCW Project Schedule, including funding with the client.
- Updating the Document Register and implementing the Electronic Document Management System (EDMS), utilising Python to upload Engineering Drawings to the platform.
- Leading the 170kW Solar Farm Project. Although the project was ultimately declined by the client due to the cost disadvantage for achieving the required return and internal rates to secure funding, the experience was invaluable. It enhanced my knowledge of Solar Generation, stakeholder engagement, and the commercial aspects of projects, including liaising with the Finance team to facilitate internal funding.
- Providing project support through scoping, budgeting, procurement, invoicing, and project closure.

## ***Cadet Engineer, Veolia ANZ (Jun, 2023 - Jan, 2024)***

### **Northern Peninsula Area Water Supply Scheme (NPAWSS) & Western Corridor (WSC)**

I started at Veolia as a Cadet Engineer before joining the Graduate Program. Initially, I was introduced to the Western Corridor Recycled Water Scheme (WCS), but later became more involved with the Bamaga Water Treatment Plant (WTP) a part of the Northern Peninsula Area Water Supply Scheme (NPAWSS).

At the WCS, I performed tasks related to Conditional Assessments, including:

- Conducting visual inspections and assessments of assets such as FRP tanks, concrete tanks, stainless steel tanks, VSD pumps, piping, and pump stations. I gathered comprehensive findings to provide recommendations to the asset team for review and updates within the Veolia Asset Management System (VAMS).
- Collaborating with contractors to carry out inspections and remediation work, as well as

reviewing assessment reports.

I was later involved with the NPAWSS, a new and remote site in Cape York, Queensland, which had only been awarded to Veolia in 2022. The site presented numerous projects aimed at improving operations and management. With limited personnel, the environment was dynamic, offering ample opportunities for involvement in a wide range of tasks. Key experiences and achievements:

- Gained valuable experience in project management and stakeholder engagement by liaising with the client, contractors, and Veolia Subject Matter Experts (SMEs).
- Visited the Northern Peninsula Area (NPA) twice to oversee major projects, including the MicroFiltration (MF) replacement and Clear Water Tank (CWT) repair and relining.
- Created and maintained the Document Register, compiling all significant documents and engineering drawings. I implemented Veolia's numbering system to distinguish document types, allowing personnel to locate essential drawings. In doing so, I greatly developed my ability in Google Sheets and Java, creating scripts to automate tasks.
- Managed redrafts of Electrical & Instrumentation and P&ID drawings to more accurately reflect the site which was a critical risk to efficient operation, maintenance, and implementations.
- Designed and fabricated Safety Guards for the plant's High Lift Pumps, applying safety standards and FEA to address an audit item.
- Collaborated with operators to complete the Raw Water Bypass project, resolving a previous audit item and implementing a double block and bleed system to prevent contamination of raw water to the communities' supply.

## ***Vacation Student, Woodside Energy (Nov, 2022 - Feb, 2023)***

### **Pyrenees FPSO & Macedon Offshore Gas Facility**

I assisted with operations at the Pyrenees Floating Production Storage and Offloading (FPSO) facility and the Macedon Offshore Gas Facility, focusing on operational support. Key experiences and achievements include:

- **Vibration Assessment:** Addressed concerns regarding Gas Blowby during the upcoming well clean-up operation. Conducted a Vibration Support Survey in compliance with Vibration Institute standards and utilised Caesar II simulations. This work identified and resolved pipework integrity issues, including those related to associated supports.
- **Integrity Management Software Development:** Contributed significantly to the team's use of NEXUSIC by creating a location-based hierarchy. This improvement optimised planning, deployment, mobilisation, and efficiency for both planned and unplanned maintenance activities.

- **Automation of Temporary Equipment Management:** Developed a JavaScript-based solution to streamline the management of temporary equipment, reducing manual effort and team uncertainty. Overall, the Vacation Program provided an excellent introduction to the workplace environment, allowing me to strengthen soft skills, apply engineering standards, gain insight into critical operational matters, and build knowledge in the Oil and Gas field.

## ***Delivery Driver, Dominos The Gap (Jan, 2018 - Nov, 2022)***

I worked at a local Domino's, starting as an E-bike rider before becoming a Delivery Driver after obtaining my license. Following a soccer injury that resulted in a broken wrist, I returned to the role and gradually took on more responsibilities, including opening and closing the store, managing stock, preparing for audits and sales, and supervising employees.

## ***Education***

Bachelor Degree in Mechanical Engineer (Honours) & Business Management QUT (2017-2023)

<b>GPA</b>	5.5
<b>Class</b>	IIA Honours
<b>Thesis</b>	Cornering Numerical Aerodynamic Analysis for QUT Motorsport, EV4

## ***Skills***

### ***Software Experience(s)***

Computational Aided Design (CAD)		Computational Fluid Dynamics (CFD)		Languages	
<i>SolidWorks</i>	★★★★☆	<i>Ansys CFD</i>	★★★★★	<i>Python</i>	★★★★☆☆
<i>Fusion 360</i>	★★★★★	<i>Ansys CFX</i>	★★★★☆	<i>Java</i>	★★★★☆☆
<i>AutoCad</i>	★★★★☆	<i>Autodesk CFD</i>	★★★★☆☆	<i>Bash</i>	★★☆☆☆☆
<i>Plant 3D</i>	★★★★☆	<i>Simscale</i>	★★★★☆☆	<i>Arduino (C++ Variant)</i>	★★★★☆☆

<b>Finite Element Analysis (FEA)</b>		<i>Simworks</i>	★★★★☆	<i>HTML</i>	★★★★☆
<i>Ansys FEA</i>	★★★★★	<b>General</b>		<b>MathWork</b>	
<i>Caesar II</i>	★★★★☆	<i>Microsoft Programs</i>	★★★★★	<i>Matlab</i>	★★★★☆
<i>Fusion 360 FEA</i>	★★★★☆	<i>Google Programs</i>	★★★★★		

## *Additional training*

<b>Vendor</b>	<b>Training</b>	<b>Year</b>
Pinnacle	Work Safely at Height	2023
Pinnacle	Confined Space Worker	2023
Bulldog	Queensland Construction Induction Card	2023
ERGT	Tropical Basic Offshore Safety Induction and emergency Training (TBOSIET) with Compressed Air Emergency Breathing Systems (CA-EBS)	2023

## *Personal*

My favorite thing to do is create and make things. With the new age of 3D printing readily available, the sky's the limit. I enjoy working on and around cars and motorbikes. I like getting involved in sports. I was primarily a soccer and futsal player, but I also enjoy basketball and recently got into golf.

## *Personal Projects*

### *Electric E36 Remote Control (RC) Vehicle (In Progress)*

I originally got into 3D printing with the sole intention of creating a remote-control replica of my 1992 E36 318iS, instead upgraded to an M3. The project began in May 2023 and is still ongoing, primarily because I want to create as much as possible on my own while implementing as many features and functions as I can. The E36 and controller have gone through numerous versions, iterating on previous mistakes and making improvements.

### *OBDII (Hold)*

I am eager to get back into the OBDII project when time permits. The project aims to connect an on-board diagnostic tool to my E36 and other vehicles, communicating via Bluetooth with an Arduino ESP and

displaying results on an interactive LCD. I have created the code with functions that I want the ESP to call to receive data from the OBD.

The idea is to connect a touch LCD screen and create an interface that allows the user to easily navigate and select performance indicators to view. I have purchased most of the components and am waiting for some downtime to start rolling out and fine-tuning the project, setting up the interface, etc.

### *Custom Gear Shifter (Hold)*

A related project that has been set aside is the custom gear shifter. While I've made some progress, implementing the feature to read and display the gear number has proven more difficult than expected. The shifter has been prototyped and includes an ESP, a smartwatch LCD, and a battery pack, remaining relatively tidy despite its thickness.

I'm also developing a mechanism to gauge the gear stick's position using an accelerometer. While effective for measuring acceleration, integrating it for positioning is challenging due to its sensitivity. I need to refine the logic and implement calibration to address offsets and drifts.

### *Automatic Blinds (Hold)*

Although a bit unconventional, I've long wanted to create automatic blinds that open in the morning based on sunlight to help me become a morning person.

The project is currently on hold while I await parts, but I have developed preliminary designs and completed testing to procure the necessary components. The system will be mains-powered through a laptop charger and will use a suitable RC motor controlled by an ESC, all managed by an Arduino Nano. It will feature manual buttons and a joystick housed near the motor, as well as a remote control, with the ability to open automatically based on sunlight.