



The Company & Programme

PRDW is an **international** group of consulting engineers practising exclusively in the specialist areas of **port and coastal engineering**. PRDW offers the **full range of consulting engineering services** from investigations, planning and feasibility studies to basic and detailed design, tender documents, supervision of construction and post construction monitoring.

PRDW provides a team of **civil, coastal, hydraulic, structural and geotechnical** engineers with specialist expertise for a wide range of marine structures; **mechanical** engineers skilled in materials handling; engineers and scientists versed in oceanography, wave conditions, coastal processes, physical and mathematical modelling; master mariners providing skills relevant to navigation and port planning studies; and quantity surveyors experienced in contracts, specifications and cost estimates.

Port and coastal engineering is an **exciting** and **challenging** field to be involved in and requires engineers who have **excellent problem solving and lateral thinking skills**. Engineers in this environment enjoy working within team environments and have a personal flair for mathematics, statistical risk analysis, engineering programming and general problem solving.

Courses in port and coastal engineering are currently available at limited tertiary institutions in South Africa at post graduate level. PRDW have therefore formulated a structured **training programme**, where undergraduates are exposed to the field of port and coastal engineering. The programme is aimed at undergraduates who have completed a minimum of two years of studying towards a BSc or BEng in **Mechanical or Mechatronics Engineering** to date. The programme runs over a **3-week period in January**, and is aimed at meeting the vacation work requirements of most South African Universities. Students on this programme will be required to carry out a **mock design project** based on an actual case study, with the assistance and guidance of experienced engineers.



The three week programme will cover the following port and coastal engineering disciplines:

1. Logistics and operations
2. Bulk material handling
3. Design development, costing and multi criteria analyses
4. Pipelines and hydraulics

The training programme will include multiple knowledge sharing sessions between students and expert practitioners. Each week will culminate with a formal presentation to an experienced panel of port and coastal engineers, where students will have the opportunity to receive feedback from the panel. In addition to the valuable experience gained through this programme, high performing participants may be invited back to PRDW for future internships and employment opportunities. We encourage you to apply if you aspire to work in a coastal environment and are looking for a **challenging and exciting career** in marine engineering.

2027

PRDW MECH+ ENGINEERING EXPERIENCE

HOW DO YOU APPLY?
Follow the easy 3 step process!!

Step 1:

Complete the application form and engineering problem (pages 2 5 of this document) and save it as a .pdf file with the following file name:

University Surname Name Application.pdf
UCT_Smith John Application.pdf (example)

Step 2:

Compile a short CV (not more than two A4 pages), include your university transcripts and a copy of your ID, and save with the following file name:

University Surname Name CV.pdf.
UCT_Smith John CV.pdf (example)

Step 3:

Email both documents through to **both** of the addresses listed below. Include the following text in the email subject, inserting your name as indicated: **PRDW Mechanical EEP 2027**

Application: Your Name

PROGRAMME DATE:

11 January to 29 January 2027

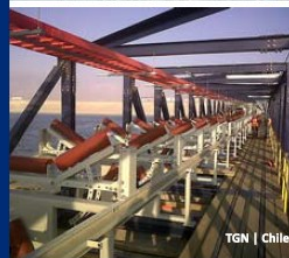
APPLICATION CLOSING DATE:

11 September 2026 at 17:00

Email:

Matthew Horrigan: mhorrigan@prdw.com
Nadiya Mahomed: nmahomed@prdw.com

You will receive a confirmation email once your application has been received.



APPLICATION FORM 2027

MECH+ ENGINEERING EXPERIENCE PROGRAMME

Complete the question in the space provided below

Considering your personal attributes and PRDW's unique field of engineering, why do you think you would be a good candidate for the PRDW MECH+ ENGINEERING EXPERIENCE PROGRAMME?

Are you willing to relocate to Cape Town following graduation?	YES
	NO

NOTE:

The document allows you to type in the spaces below. When you have completed the application form, save it as a pdf as per step 1 described above.

PERSONAL DETAILS:

NAME:

SURNAME:

ADDRESS:

TELEPHONE NUMBER:

EMAIL ADDRESS:

TERTIARY EDUCATION:

COURSE:

YEAR OF STUDY:

WHAT YEAR WILL YOU GRADUATE*:

UNIVERSITY:

ADDITIONAL QUALIFICATIONS:

BURSARY COMMITMENTS:

*The year in which you will complete your studies, **NOT** the year of your graduation ceremony.

CONTACT:

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ENGINEERING PROBLEM

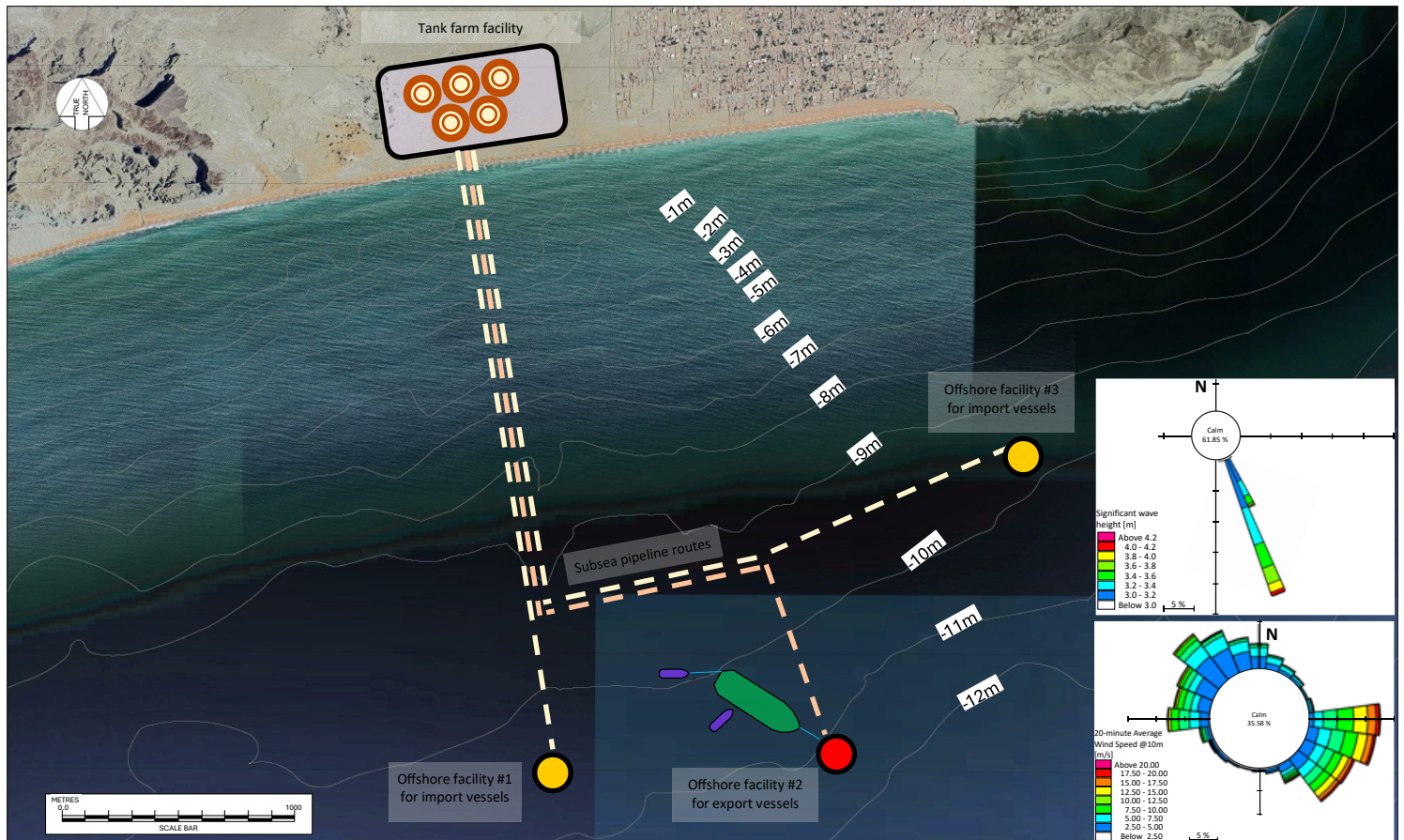
MECH+ ENGINEERING EXPERIENCE PROGRAMME

QUESTION 1:

The image below shows a green fuels port that is being considered for an extension and upgrade. A new refinery will be installed and produce four components of green fuels. The refinery receives its feed stocks and dispatches its products through offshore stations (approximately 2-3 km offshore). These stations are connected to offshore and onshore pipelines, up to tanks located in the tank farm area, within the refinery premises.

You are required to provide an operations plan for the marine operation handling the export product, indicating the interfaces with the pipeline routing between the port and the offshore site. Label all components clearly.

Use the space on the next page for your operations flow chart/logic diagram. Feel free to use any flow chart/logic/electrical software or you own process blocks with a legend included.



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ENGINEERING SOLUTION
MECH+ ENGINEERING EXPERIENCE
PROGRAMME

NOTE: Sketch your proposed operations solution to the facility on the space provided below, or on the separate engineering solution worksheet – you may do this by hand, or using appropriate *logic/flow chart software*. You can either embed the diagram below, or attach separately.

HINT: Be creative, think outside the box and do some research on what typical elements are required for these facilities. Add in any additional features to make the facility more sustainable, cost effective and functional, should you wish to do so.

Presentation is key!

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ENGINEERING SOLUTION MECH+ ENGINEERING EXPERIENCE PROGRAMME

Answer the questions in **bullet format** in the space provided below

2. The facility is forecast to have an annual throughput of 650 000 tonnes and can load vessels at rates up to 800 tph, working 24 hour days, 365 days a year. Propose the size of vessels (product capacity, vessel draft etc.) that should be used at the offshore sites by researching tanker fleets and noting the seabed depth at the proposed offshore sites the layout provided. Explain how frequently these vessels need to be loaded in order to reach the annual throughout and show your calculations.

3. List the main components incorporated in your operations plan, and provide a brief explanation as to why they were used. List the factors you considered in the: 1) vessel export operations and the type of material being handled 2) pipeline interfacing (with the offshore facilities and the tank farm etc.) and 3) weather and environmental factors.

4. How easily can the landside, pipelines and offshore components of the facility be expanded/upgraded? What additional aspects would you consider in the current design of your facility to accommodate future expansions?

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