



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; a master mariner 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 Civil Engineering. The programme runs over a **4-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 four week programme will cover the following port and coastal engineering disciplines:

1. Wave theory and coastal processes
2. Port planning and navigation
3. The design of coastal structures (breakwaters, revetments etc.)
4. Design concept development, costing and multi-criteria analyses
5. Structural modeling and analysis of an exposed jetty structure
6. Pipeline hydraulics

The training programme will include knowledge sharing sessions between students and expert practitioners and will culminate with a formal presentation to and a feedback session from an experienced panel of port and coastal engineers. Students who are looking for a **challenging career** in marine engineering and who prefer coastal working environments are encouraged to apply to be on this programme. According to the performance of students on this programme, employment within the PRDW group may be considered.

PRDW ENGINEERING EXPERIENCE PROGRAMME 2025

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 one of the addresses listed below.

PROGRAMME DATE:

6 January to 31 January 2025

APPLICATION CLOSING DATE:

7 October 2024 at 17:00

Email:

Prince Mutomb: pmutomb@prdw.com
Melissa Cairns: mcairns@prdw.com

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



APPLICATION FORM 2025 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 ENGINEERING EXPERIENCE PROGRAMME?

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:

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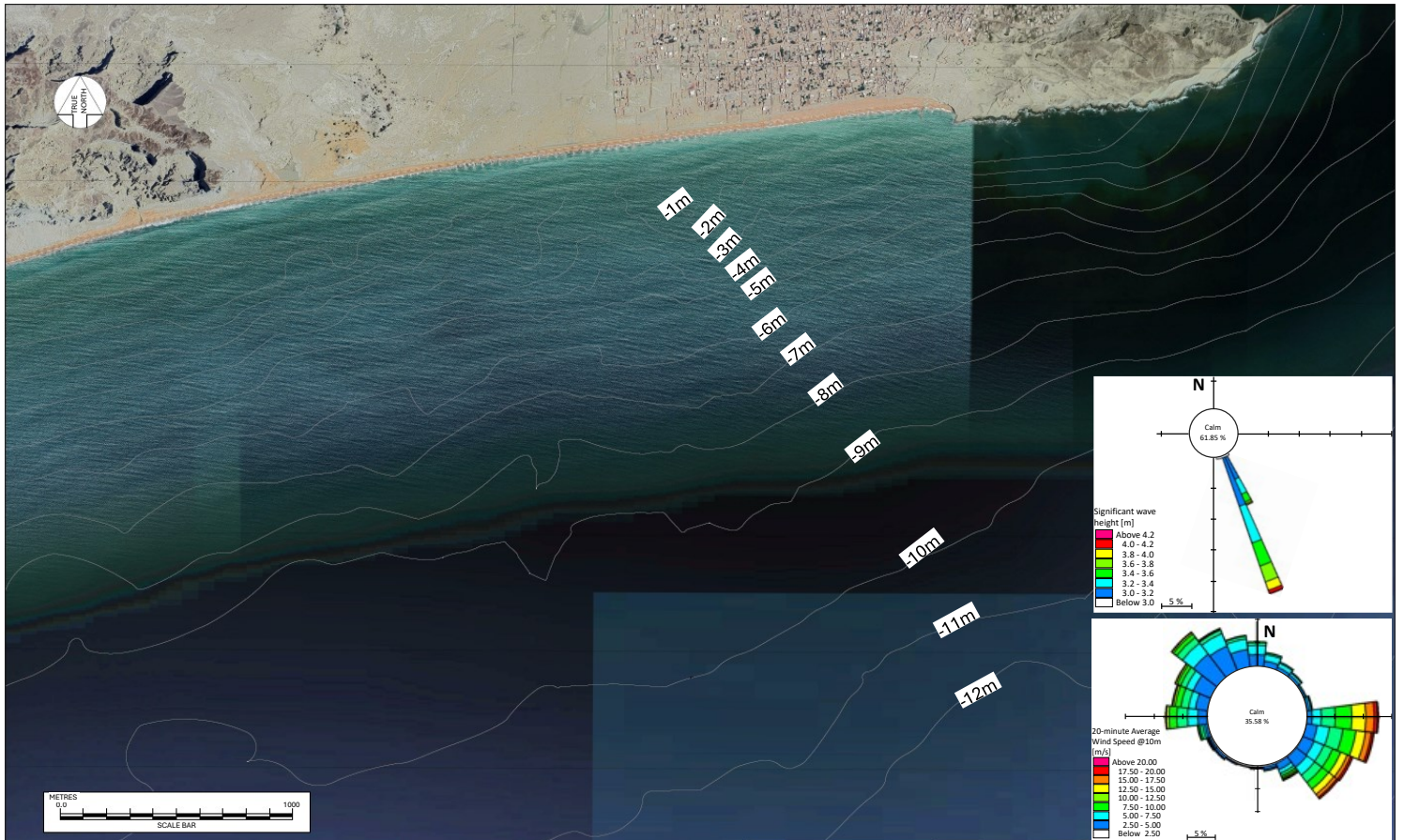
ENGINEERING PROBLEM ENGINEERING EXPERIENCE PROGRAMME

QUESTION 1:

The image below shows a site that is being considered for the construction of a marina utilizing the available area as part of an extensive urbanization project. The marina will mainly be used for small leisure craft (yachts, small fishing vessels etc.) and should accommodate 75 berthing spaces. Wind and wave roses for the site are shown at the bottom right-hand corner of the key plan.

You are required to provide a plan layout of the marina and label all components clearly.

Site layout (Google Earth Image and Bathymetry)



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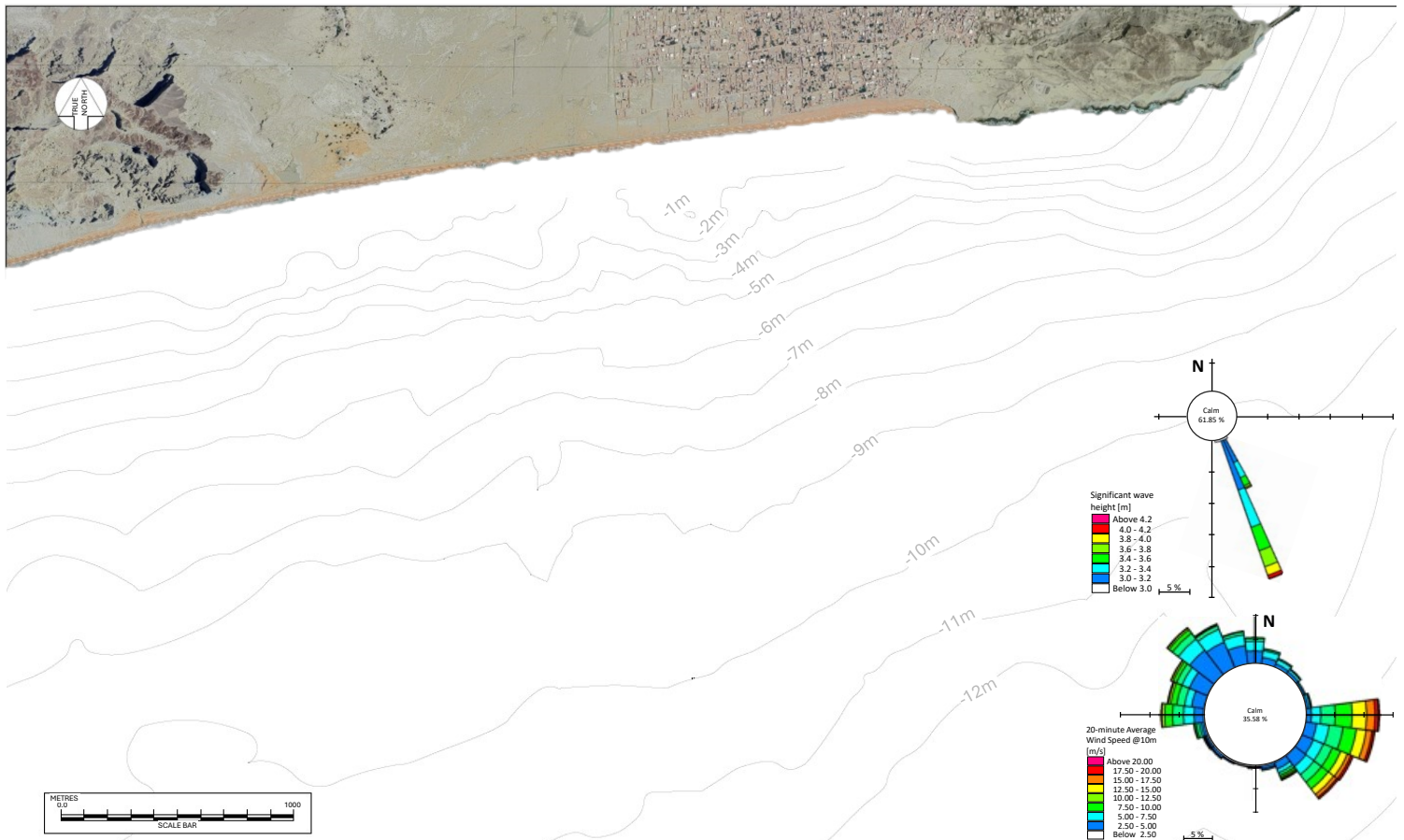
Tel: +27 21 418 3830

NOTE: Sketch your proposed solution to the marina layout exercise on the layout provided below, or on the separate engineering solution worksheet – you may do this by hand, or using appropriate *drawing software* (CAD, paint, etc.). You can either embed the drawing below, or attach separately.

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

Please take note of drawing scale when developing a solution.

Presentation is key!



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**ENGINEERING SOLUTION
ENGINEERING EXPERIENCE PROGRAMME**

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

2. List the main components incorporated in your design, and provide a brief explanation as to why they were used.

3. List the factors you considered in the: 1) marina entrance alignment, 2) orientation and layout of the jetties and 3) breakwater placement (should you decide to incorporate one).

4. What additional aspects would you consider in the design of your marina?

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