

# Advanced Structural Analysis

PAFA Consulting Engineers offer an advanced analysis service using the latest industry standard linear and non-linear software in association with in-house developed programs.

We have expertise in FE modelling complex steel structures and FRP/GRP composite materials both offshore and onshore. Standard non-linear solutions are enhanced using in-house software. For example, utilisation factors for multiple laminates have been determined according to the Tsai-Wu criterion.

We perform dynamic analyses in both the spectral and time domain for fixed and floating structures. Other areas of experience include time dependent corrosion analysis and vortex induced vibration fatigue damage assessment.

Ultimate strength, collapse & pushover analyses are carried out by our experienced designers to analyse: fire, blast, seismic and impact damage, and assist in residual strength & risk assessment.

Collision and grounding loadings on bridges and caissons have been assessed and engineering designs and detailing have been performed.

Verification and audit of all structures is important from economic and safety standpoints and our engineers are also trained and experienced in this area.

PAFA Consulting Engineers have been involved in the following analyses:

- Riser arch trays
- Fixed steel platforms
- Extreme wave motion and forces
- Stresses at tubular connections
- Stiffened plate structures
- Helideck support structure
- Ramform Banff blast wall
- Floating docks
- Varg FPSO topside-hull interface
- Second river Severn crossing

## Summary

- Non-linear material behaviour
- Steel, GRP and FRP
- Dynamic spectral and time domain solutions
- Time dependent loading
- Reassessment to latest codes

## Clients include

- BP-Amoco
- Halcrow Group
- Health & Safety Executive
- Seascope 2000

## Software

- SAP2000 Offshore
- USFOS
- SACS

## For More Information, Please Contact:

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