

## CURRICULUM VITAE



**SIMON RICHARDS**

### Qualifications

BSc (Hons) Chemical Engineering, 1985.

C Eng Chartered Engineer, 1992.

Eur Ing European Engineer, 1992.

### Memberships/Associations

The Academy of Experts

American Institute of Chemical Engineers  
Energy Arbitration Club

Institution of Engineering & Technology

NEWA

Society of Petroleum Engineers

UK Register of Experts

### Sector Experience

Onshore

Offshore

### Geographic Experience

Africa

Australia

Europe

Middle East

Russia

North & South America

Central, South, & SE Asia

### Contract Experience

IChemE

Bespoke

## KEY SKILLS AND EXPERIENCE

- Expert Witness,
- Expert Determination,
- Cross-examined at arbitration and litigation,
- 38 years post-graduate chemical process engineering experience and expertise,
- Oil and gas industry.

### SUMMARY – Engineering Experience and Expertise

Simon is a Chartered Engineer specialising in chemical and process engineering. He has extensive experience throughout the world on high-profile projects with experience in project development as well as design through to commissioning. He provides expert advice and technical assessments to government agencies and energy companies.

Simon has extensive experience in a career spanning over 38 years. He works in the process industries, mainly but not exclusively in oil and gas, with experience on projects from feasibility and concept studies through to commissioning and operation. He has strong experience and expertise in engineering and design of offshore and onshore projects.

He has expertise in oil production and processing including production and flow assurance, material selection and corrosion, oil/ gas/ water 3 phase separation, oil stabilisation, oil dehydration, pumping, metering, pipelines. He has expertise in gas processing that includes gas dehydration, gas sweetening, mercury removal, cryogenic gas dewpointing, gas compression, and utilities such as fuel oil and fuel gas treatment.

He has good knowledge of offshore fixed, subsea, and floating structures used in field development such as FPSO, FSO, jacket, spar, TLP, and risers as required for shallow water, deep water, and ultra-deep-water fields.

He has good knowledge of Flow Assurance and experience with a variety of fluids including sour oil and gas, heavy oil, waxy, emulsifying oil and HPHT.

He is familiar with many national and international regulations, recommended practices, codes, and standards.

He has good experience of cost estimating as well as economic assessment during concept selection and operational asset reviews. He has specialised computer software skills with cost estimating software such as QUE\$TOR. This includes preliminary project schedules and cost phasing. He also has experience of asset valuation during Acquisition and Disposal and limited experience of portfolio modelling. He has also assessed the value of information from proposed appraisal drilling.


He is experienced in the application of project development procedures such as opportunity framing and stage-gate peer reviews and has experience of value engineering, the management of studies and small teams. He has worked on FEED studies and detailed design projects as well as plant commissioning and start-up. Simon can prepare and deliver presentations to a variety of audiences and has some good technical report writing skills.

He has a good understanding of geoscience, reservoir, production, and well engineering in field development as well as other surface engineering disciplines such as mechanical and piping encountered in production process facilities.

### SUMMARY – Technical Expert Witness and Expert Determination Experience

He has been retained by:

- Belden Advocates and Solicitors
- Brigard Urrutia
- Clyde & Co
- Curtis, Mallet-Prevost, Colt & Mosle
- DLA Piper
- Eversheds Sutherland
- Linklaters
- Pinsent Masons
- Stewart McKelvey



He has prepared several Expert Witness reports on technical issues related to the:

- construction and commissioning of an offshore platform in North America.
- construction of fuel storage tanks in the Middle East.
- construction of ancillary building services for an LNG project in Australasia.
- modifications to an offshore oil platform in Europe.
- corrosion of a gas pipeline in South America.
- supply of gas by pipeline.
- corrosion of an oil production platform offshore SE Asia.
- design of a boiler in a waste to energy plant in Europe
- heavy fuel oil processing at a power station in the Near East
- design and commissioning of a waste to energy plant in Europe.

## EMPLOYMENT

### Bosco Xavier Ltd

Andover, England

#### Principal Consultant

August 2016 to Present

I provide process engineering and concept selection consultancy in the upstream oil and gas industry. I also take expert witness commissions from law firms in my specialist field of oil and gas. My recent work has included:

**December 2023 – present:** I develop/ select/ review surface facilities concepts for business development opportunities and provide facilities engineering input to operated assets to an independent UK E&P company.

**November 2023 – present:** Whiptail Concept Selection Process (CSP), Field Development Plan (FDP) Review, Guyana. Water Depths (1,500– 2,200m)

Acted as facilities engineer which reviewed these elements:

1. Concept Selection: the viability and appropriateness of the options considered in developing the Preferred Option that formed the basis for the FDP. Technical considerations were vetted for all Options including:
  - a. The viability of the facilities engineering solutions proposed, with an emphasis on minimised gas flaring, along with an initial assessment of their safety and environmental acceptability.
  - b. The acceptability of the proposed project costs - development and production - and the project schedule.
2. Field Development Plan: vetted in detail the FPSO proposition, that it provided sufficient basis for the development and that the plan ensured the most efficient and beneficial use of the petroleum resources, in line with the good international oil field practice:
  - a. FPSO: topsides equipment capacity, and sparing philosophy; process systems particularly the compression system; utility systems; mechanical handling; power generation; control system; material selection; marine system; quarters; hull structure; mooring systems; riser pull-in and mounting system; crude evacuation system.
  - b. Contributed to the FPSO safety assessment.
  - c. Decommissioning plan including budget.
  - d. The implementation plan and schedule.
  - e. Project costs – development and operating; also conducted a cost benchmarking study to compare the performance of the proposed solution

against other spread-moored deep-water production systems around the world.

- f. The natural gas utilization plan for the field.
  - g. The overall risk management strategy.
  - h. Operations: plan for support once the system is in production – field support and logistics
  - i. The incorporation of the lessons learnt from previous FDP reviews and related studies conducted by the Operator.
3. Defined any revisions that should be made to the FDP prior to approval and identified further assessments that should be made by the Operator to address deficiencies as legal obligations in the Petroleum Production License.

**Jun 2023 – present:** I prepared an Expert Report on heavy fuel oil processing for client in the Middle East

**Jan 2023 – Apr 2023:** Uaru Field Development Plan (FDP) Review, Guyana; Water Depths (1,450 – 1,920m)

As Facilities Engineer, I conducted an in-depth review of the FPSO component of the FDP based on international good practices and the specific conditions present in Guyana). The project was based on a subsea development in ultra-deep-water, and which included 46 wells tied back to in-field FPSO with crude off-loading to shuttle tankers.

This review included an assessment of:

1. The criteria for the choices that have been made by the Contractor (with a particular focus on cost effectiveness) and potential alternatives.
2. The proposed FPSO facilities including Topsides and Hull and Marine systems.
3. The concept selection.
4. The production availability including provision of spare equipment.
5. Gas processing and compression systems
6. Oil treatment systems
7. utilities
8. The development cost estimate.
9. The production and fiscal metering systems.

Prepared a report summarizing the opinions formed in the evaluation of the FDP, highlighting any deficiencies, unresolved issues, or areas of additional technical analysis that government should request from the Contractor before deciding on the FDP.

**2022:** - Liza Field Integration of GTE Project FDP Amendment Review, Guyana; Deep Water (1.600-1.900m)

As Facilities Engineer, I conducted an in-depth review of this FDP Amendment and supporting documents submitted. This review included an assessment of:

1. The strategy and the development model, as well as the criteria for the choices that have been made by the Operator (with a particular focus on cost effectiveness) and potential alternatives.
2. The engineering, geological and geophysical interpretations, simulations, and estimations (with a particular focus on recovery factor efficiency using natural gas injection and available natural gas for export)
3. The proposed project schedule (with a particular focus on tail end production).
4. The proposed subsea system.
5. The well & reservoir management strategy (considering the Government of Guyana's objective of maximizing the recovery of hydrocarbon resources and of no-gas flaring)
6. The proposed oil and gas surface facilities.
7. The Health, Safety, Environment and Social (HSES) impacts and proposed mitigation.
8. The Abandonment Plan.

Prepared a report summarising the opinions formed in the evaluation of the FDP, highlighting any deficiencies, unresolved issues, or areas of additional technical analysis that government should request from the Contractor before deciding on the FDP. Vetted all costs presented in the plan.

**2022:** Responsible for the concept selection, design and cost estimating for a cluster of small gas fields offshore Mumbai, India.

**2022:** ONGC – Pre-FEED Study Cluster III, India; Ultra-Deep Water

As Process Facilities Development Engineer conducted the facilities and pipeline feasibility and concept selection for a Pre-FEED study to establish the optimum production configuration to develop this field, a gas development in 2,850m of water. When developed it will be the deepest producing gas field in the world.

The work was implemented in stages:

1. Stage 1: was a review of 14 potential options for technical, cost, schedule and economic viability stand points. Definition was developed to give a Class 5 AACE estimate - of the final installed cost; this included development and operating costs.
2. Stage 2: considered in further detail the most viable options derived from the selection process implemented in stage1. Each of these options was considered in more depth to further confirm their viability. Definition was developed to give a Class 4 AACE estimate.
3. Stage 3: detailed the preferred Option derived from stage 2. Definition was developed to give a Class 3 AACE estimate.

All aspects of the design were covered during the assessment including Pipelines; Floating Production Vessels; Topsides Facilities and Onshore Facilities.

Key aspects of the work were to:

1. To test the technical viability of the work, that in all aspects the critical measures of being able to install and operate in the 2,850m water depth were met.
2. Ensure the selected solution was cost effective and deliverable in a reasonable time frame.
3. Finally ensure the economic viability of the preferred selection; it had to meet economic selection criteria set by the Client.

**2022:** Yellowtail-Redtail Field Development Plan (FDP) Review, Guyana

As Facilities Engineer, I conducted an in-depth review of the FPSO component of the FDP based on international good practices and the specific conditions present in Guyana). The project was based on a subsea development in ultra-deep-water depth (1,885m) and which included 51 wells tied back to in field FPSO with crude off-loading to shuttle tankers.

This review included an assessment of:

- 1) The criteria for the choices that have been made by the Contractor (with a particular focus on cost effectiveness) and potential alternatives.
- 2) The proposed FPSO facilities including Topsides and Hull and Marine systems.
- 3) The concept selection.
- 4) The production availability including provision of spare equipment.
- 5) Gas processing and compression systems
- 6) Oil treatment systems
- 7) utilities
- 8) The development cost estimate.
- 9) The production and fiscal metering systems.

Prepared a report summarizing the opinions formed in the evaluation of the FDP and EIA, highlighting any deficiencies, unresolved issues, or areas of additional technical analysis that government should request from the Contractor before deciding on the FDP.

**2022:** I managed the preparation and delivery of a process engineering model for the operator of an onshore block in Nigeria.

**2021:** Expert Witness report for a dispute involving a waste to energy plant in Europe. The dispute revolves and the design and commissioning of the thermal train and the quality of the fuel.

**2020:** Payara FDP Review, Guyana

As Facilities Engineer, I conducted an in-depth review of the FPSO component of the FDP based on international good practices and the specific conditions present in Guyana). The project was based on a subsea development in ultra-deep-water depths (1,900-2,119m) and which included 41 wells tied back to in field FPSO with crude off-loading to shuttle tankers. This review included an assessment of:

1. The criteria for the choices that have been made by the Contractor (with a particular focus on cost effectiveness) and potential alternatives.
2. The proposed FPSO facilities including Topsides and Hull and Marine systems.
3. The concept selection.
4. The production availability including provision of spare equipment.
5. Gas processing and compression systems
6. Oil treatment systems
7. utilities
8. The development cost estimate.
9. The production and fiscal metering systems.

Prepared a report summarizing the opinions formed in the evaluation of the FDP and EIA, highlighting any deficiencies, unresolved issues, or areas of additional technical analysis that government should request from the Contractor before deciding on the FDP.

**2020:** Expert Witness report for a power station in the Middle East related to the quality of the fuel and the process equipment.

**2020:** I provided technical expertise in the assessment of Premier Oil's Sealion Field Development Plan on behalf of a potential farm-in partner.

**2018:** Liza Phase 2 FDP Review, Guyana

As Facilities Engineer, he conducted an in-depth review of the FPSO component of the FDP based on international good practices and the specific conditions present in Guyana). The project was based on a subsea development in ultra-deep-water depth (1,622m) and which included 30 wells tied back to in field FPSO with crude off-loading to shuttle tankers.

This review included an assessment of:

1. The criteria for the choices that have been made by the Contractor (with a particular focus on cost effectiveness) and potential alternatives.
2. The proposed FPSO facilities including Topsides and Hull and Marine systems.
3. The concept selection.
4. The production availability including provision of spare equipment.
5. Gas processing and compression systems
6. Oil treatment systems
7. utilities
8. The development cost estimate.
9. The production and fiscal metering systems.

Prepared a report summarizing the opinions formed in the evaluation of the FDP and EIA, highlighting any deficiencies, unresolved issues, or areas of additional

technical analysis that government should request from the Contractor before deciding on the FDP.

**2017:** I prepared a Reliability, Availability and Maintainability (RAM) report for the 1500km Tengiz (Kazakhstan) to Novorossiysk (Russia) pipeline that identified debottlenecking opportunities to increase capacity.

**2017:** I peer reviewed the conceptual design report for the proposed Alkali Surfactant Polymer (ASP) flood to increase production from the Cairn Energy (India) Mangala field.

**2017:** Strategic Assessment Study for Natural Gas Exploitation – 23 License Areas, Angola

Acted as Facilities Engineer during an evaluation of 23 license areas both onshore and offshore in Angola. The project purpose was to establish if they contained exploitable contingent natural gas resources.

Detailed technical evaluations were conducted through analysis of the available data. Where justified these initial evaluations were followed by conceptual field development planning and economic assessments to establish if exploitable contingent natural gas resources could be identified in the license areas.

Screening studies and pre-FEED conceptual studies were completed on two ultra-deep-water fields: Lianzi (900-1,500m), Negage (900-1,500m) and Lucapa (900-1,800m).

The work was conducted in accordance with the PRMS and was designed to evaluate if Angola could establish an economic gas-gathering network to feed natural gas to downstream industries including petrochemicals and domestic power generation.

**2016:** I completed a cost estimate and prepared a report for the development of the offshore sour gas field Farzad B Gas, Iran on behalf of the then Indian operator. This included offshore platforms, pipelines, and onshore gas processing plant.

**Driver Group plc**  
London, England  
**Technical Director**  
**2017 to 2020**

I worked for Diales writing CPR35 compliant Expert reports. A summary of the cases and reports I have written is presented below:

**2019:** I am retained an Arbitration regarding the corrosion of an offshore platform in SE Asia.

**2018:** I was retained in a Litigation regarding alterations and additions to an offshore oil and gas production platform in Europe.

**2018:** I am retained in an Arbitration regarding corrosion of a pipeline in South America.

**2018:** I was retained in an Arbitration regarding a gas supply contract in Central Asia.

**2017:** I was retained in an Arbitration regarding the construction of an LNG project in Australasia.



**2017:** I was retained in an Arbitration regarding the construction of a fuel storage depot in the Middle East.

**Hill International**  
London, England  
**Technical Director**  
**2012 to 2015**

**2013:** I was retained in a litigation on the installation and commissioning of an offshore platform in North America.

**2012:** I also provided technical and commercial support to Phase 2 of the Kashagan Field Development, Kazakhstan by giving expert advice for the proposed compression island CC01. I also completed a technical assessment of the possibly causes of the Kashagan sour oil and gas pipeline failures that occurred in 2013.

**Wood Group**  
Woking, England  
**Supervisory Engineer (Field Development)**  
**2011**

I reviewed the changes to the facilities conceptual design for the Kashagan oil field for the period from 2008 to 2012 including supervision of other engineers. I prepared a report to determine whether the design development changes were in accordance with good oil field international practice.

**Petrofac Energy Development UK**  
London, England  
**Senior Facilities Engineer**  
**2010 to 2011**

I undertook feasibility and concept selection studies to assess new business development opportunities for investment in the upstream oil and gas sector. I was responsible for opportunity framing, concept identification and selection, assessment, process engineering, flow assurance, risk analysis, CAPEX/OPEX estimating, value engineering, benchmarking, and preparation of reports and other deliverables. The potential opportunities I worked on included:

Marginal Heavy Oil Field, Gulf of Suez. This was to complete the construction and installation of facilities for an offshore project.

Marginal Oil Fields, Gulf of Thailand. This opportunity consisted of providing field development services for a Thai operator.

Marginal Oil Field Concept Selection Study, Offshore Gabon. This included an evaluation of gas disposal options.

Kraken Heavy Oil Field Feasibility Study, Offshore United Kingdom. This considered the feasibility of a rig-mounted early production system. Key challenges included separation and flow assurance of the heavy oil.

**EPCConsult Energies**  
London, England  
**Principal Consultant**  
**2007 to 2010**

I led offshore and onshore field development studies, process engineering design reviews, reliability, availability, and maintainability studies.

I also developed a novel concept for the standalone development of small heavy oil reservoirs that could also provide carbon capture and storage (CCS) for enhanced oil recovery (EOR) applications.

I provided conceptual engineering design review for Cairn India Mangala, Bhagyam and Aishwariya fields onshore fields in Rajasthan, India.

I led concept selection study for the Kingfisher oil field in Uganda. I determined the cost to be approximately \$1.3 billion. The work included optimisation of the concepts including wells; facilities (production and processing engineering, process simulation, flow assurance); power generation and transmission; oil export infrastructure (pipelines, terminals, rail and inland water transport); project schedules; cost phasing; CAPEX; and activity based OPEX estimating.

I completed a RAM study for Reliance - KG-D6 field, which is a gas-condensate development in deep water offshore India. The scope included subsea production; FPSO; and a gas export system. I used MAROS software to build a RAM model including the FPSO offloading system that accounted for weather downtime.

I completed a conceptual design study for Petrobaltic B8 marginal oil field in the Baltic Sea offshore Poland. The study optimised the field development including the wells, facilities and export. The work included optimisation of the concepts including wells; facilities (production and processing engineering, process simulation, flow assurance); oil export infrastructure (pipelines); project schedules; cost phasing; CAPEX; and activity based OPEX estimating.

I completed a process design review for the Anadarko Peregrino FPSO offshore Brazil. The fluid is a highly viscous, emulsifying 14° API heavy oil. Design changes were recommended to improve product quality and operability.

**Petro-Canada**  
Aberdeen, Scotland  
**Senior Facilities Engineer**  
**2005 to 2007**

I was the facilities engineer for UKCS developments in the Petro-Canada Aberdeen office. I worked closely with the facilities engineering team in London, the commercial teams and the subsea and subsurface teams in Aberdeen.

I was responsible for operations support, exploration and development appraisal, study management, and the development of an integrated asset modelling tool. Provided facilities engineering, pre-development and re-development input to a number of non-operated assets in the North Sea, including HPHT and heavy oil.

I assisted with the preparation of corporate standards for "gate" reviews. I prepared life of field sheets for economic assessment.

I coordinated the progression and completion of the Aberdeen University Pigasys JIP, encouraging sponsors to join and chairing the steering committee. The JIP unfortunately ended before the project completion due to internal disagreements.

I prepared a proposal for an Integrated Asset Model in the North Sea and pre-qualified capable vendors.

I co-ordinated and led several feasibility and concept selection studies for exploration and project development studies in the North Sea, including heavy oil. Used Que\$tor Offshore and Onshore with subsea tiebacks.

I provided facilities engineering input to the concept selection phase for the Perth Sour Oil and Gas Field and the Herje HPHT Offshore Oil Field, Denmark.

#### **Royal Dutch Shell plc**

Aberdeen, Scotland

#### **Senior Development Engineer**

**2002 to 2005**

Following my transfer to Shell after the takeover of Enterprise Oil, I was the conceptual design and FEED study leader for new developments and minor projects to existing platforms on UKCS working in an integrated subsurface and surface team. I also undertook development scenario planning using Petro VR software.

I undertook Nigerian onshore/ offshore conceptual design studies, availability studies, layout studies, fluid characterisation, HAZID study, flow assurance using PIPESIM, capex estimating using CES and process modelling using HYSYS.

#### **Enterprise Oil plc**

Aberdeen, Scotland

#### **Senior Facilities Engineer**

**2001 to 2002**

UKCS licensing round prospect evaluation.

Field development planning using Que\$tor and Field Plan.

Flow assurance studies using PIPESIM.

Maintained the asset decommissioning cost database.

Asset acquisition and disposal support.

Integrated subsurface/ surface/ commercial team working.

Represented Enterprise Oil in various industry associations.

#### **Coflexip Stena Offshore**

Aberdeen, Scotland

#### **Senior Project Engineer**

**1999 to 2001**

Field development planning using Que\$tor for West Africa, UK and Ireland projects.

Flow assurance studies using PIPESIM for GOM project.

Project management co-ordinator for addition of well clean facilities to a light well intervention vessel.

Managed flow assurance study for UK and eastern Canada.

Technical and commercial review of subsea and down hole processing technologies.

Developed cost model for mini-TLP sub-structure.

Concept selection for recovery of heavy fuel oil from sunken tanker, Erika.

#### **MAI Consultants Ltd**

Epsom, England

#### **Senior Process Engineer**

**1998 to 1999**

Field development planning, capital and operating estimating using Que\$tor in the UK, West Africa and Kazakhstan including Tengiz, Karachaganak and Kashagan.

Economic evaluation using As\$et;

Upstream investment study for Kazakhstan.

Upstream 10-year investment forecast for UKCS and international.

Comparative economic study for UKCS to NW Europe and international.

Comparative international economic study for deep water and ultra-deep water.

Technical and cost audit for Elgin/ Franklin development plan.

New technology review for artificial lift, subsea processing and boosting.

Cost estimate and economic analysis for a new offshore gas compression platform.

Deep-water study for subsea equipment vendor to determine optimum layout.

Market forecasts for ROV activity and high alloy steels in the North Sea.

#### **AMEC Process & Energy**

Aberdeen, Scotland

#### **Senior Process Engineer**

**1997 to 1998**

Part of Marathon's project team for the Kingfisher development. Evaluated the impact of the Kingfisher development on the existing flare systems using Flarenet; completed an acoustic vibration study for the LP flare system; onshore process support during field commissioning.

#### **Wood Group Engineering**

Aberdeen, Scotland

#### **Senior Process Engineer**

**1993 to 1997**

Responsible for a front-end engineering design study for modifications to the BP Nigg oil terminal and a new fuel oil production plant at the site. Process Simulation with HYSIM included crude oil characterisations. Other responsibilities included preparation of all the P&ID's and PFDs for the project; preparation and checking of process datasheets and calculations; preparation of process philosophies and the process basis of design book; HAZOP & HAZID studies.

Other responsibilities involved a lead role in delegating process work to other engineers because of in depth knowledge of the project. Also detailed design experience of the Fulmar oil pipeline project. Preparation of start-up and commissioning philosophies, valve

registers, operating procedures and ESDV leak test procedures to SI-1029. Hydraulic calculations for the new and existing pipe work. Steady state simulation using Pro-11. Study of dynamic behaviour of recycle cooler using spread sheet programme.

Conducted a feasibility study to tie-back the Amerada Hess Telford field to Ivanhoe/ Rob Roy semi-sub platform on central UKCS; included optimisation study using HYSIM of the Petrojarl facilities for the Hudson field; completed a feasibility study on Ivanhoe/ Rob Roy produced water system for the installation of additional hydro-cyclones and supervised field trials; reviewed the dynamics of the closed drains system on Ivanhoe/ Rob Roy associated with the leakage of crude from the MOL pumps. Joined the Total project team and assisted with FEED studies for tie-back of Dunbar to Alwyn on north UKCS. Joined the Amoco project team and assisted with design of a gas lift system and preparation of operating procedures for Montrose on central UKCS.

**Brown & Root Vickers**  
Aberdeen, Scotland  
**Senior Process Engineer**  
**1992 to 1993**

Conducted as built survey of the P&ID's for the Chevron Ninian South platform on north UKCS.

Joined Conoco project team and assisted in design of modifications to Conoco's LOGGS complex on south UKCS; HAZOP experience, preparation of bases of design and operating procedures; steady-state simulation using PIPESIM and HYSIM; design of utility systems such as produced water treatment, open & closed drains, HP & LP flares, process & utility cooling medium, glycol dehydration unit, power generation and fuel gas treatment & conditioning; assisted in de-manning and maintenance reduction studies involving the identification of all redundant equipment necessary to route production directly to the host platform.

Provided operations support to Shell's Fulmar and Kittiwake Project which included process simulation with PRO-II simulation software; review of cooling water shortages during black start; review of hydrate blockage in instrument tubing on the gas dehydration plant; design of well annulus blow down system; design of new produced water treatment system; investigation of heat losses from compressors prior to start up; evaluation of existing drilling equipment; design of new mud-gas separator; simulation of HP, LP & LLP flares.

**Norwegian Contractors AS**  
Stavanger, Norway  
**Senior Process Engineer**  
**1992 to 1992**

Provided construction site support at Vats in Norway; updated the GBS P&ID's and other documents with construction modifications as necessary; conducted technical review of the interface between the platform utilities and drilling rig systems on Shell's Draugen platform.

**Aker Engineering AS**  
Stavanger, Norway  
**Senior Process Engineer**  
**1991 to 1992**

During preliminary engineering phase on Conoco's Heidrun platform; responsible for the utilities such as heating & cooling mediums, produced water treatment, waste heat boilers, fuel gas treatment and conditioning and open & closed chains; also FEED study for a subsea satellite tieback and modifications to platform systems; process simulation with HYSIM software.

**Foster Wheeler Wood Group**  
Aberdeen, Scotland  
**Senior Process Engineer**  
**1990 to 1991**

Provided process engineering input to the detailed design of the BP Forties field water system upgrade modification revamp retrofit project.

**Ewbank Preece Ltd**  
Brighton, England  
**Process Engineer**  
**1989 to 1990**

Designed offshore sour gas treatment facilities modification revamp retrofit for a North Sea platform, temporary oil storage solutions and a permanent oil products offshore loading facility in Libya.

**Costain Petrocarbon Ltd**  
Manchester, England  
**Graduate Process Engineer**  
**1985 to 1989**

Worked mainly on the design of cryogenic turbo-expander air separation and gas processing plants. Worked at site for a utilities offsite upgrade at Shell's Stanlow refinery. Worked on the design of the THORP nuclear reprocessing plant at Sellafield in Cumbria. Commissioning of an air separation plant in Bulgaria and carried out pre-commissioning checks and was responsible for the plant during the night shift. Worked on the fabrication and pre-commissioning for a truck mounted nuclear waste encapsulation facility and performed mechanical completion checks and pre-commissioning operations.

## TRAINING COURSES

2023 Expert Determination  
2021 Cross-Examination Day  
2020 Courtroom Skills Training – Expert Witness  
2020 Essential Expert Witness  
2020 Expert Essentials

## COURSE PROVIDER

Academy of Experts  
Bond Solon  
Bond Solon  
Legal Experience Training  
Expert Witness Institute



2018	Discussions Between Experts	Bond Solon
2017	Witness Familiarisation- High Court – Civil	Bond Solon
2017	Courtroom Skills Training – Expert Witness	Bond Solon
2017	Cross-Examination Day	Bond Solon
2017	Networking	Kintish
2014	Advanced Professional Award in Expert Witness Evidence Training & Assessments - Court Skills & Advanced Report Writing	Legal Experience Training
2013	Foundation Course	Academy of Experts
2012	Essential Expert Witness	Legal Experience Training
2006	Landlines in Deserts and Mountains	Trevor Jee
2004	E&P Economics Training	Shell
2003	Opportunity Framing	Shell
2002	Reservoir Engineering for Other Disciplines	Petroskills