





Areas of Expertise:-

- Bulk Fuel Terminals
- Tank Farms & Depots
- Distribution Systems
- Pipelines
- Ship Offloading/Bunkering
- Road Truck Loading/Unloading
- Road Car Loading/Unloading
- Fire Protection Systems
- Terminal Automation Tank Gauging
- LPG Storage & Distribution Systems
- Airport Aviation Fuel Systems

Services:-

- Feasibility Studies
- Front End Engineering Design
- Design & Cost Estimates
- Programme Planning
- Process Design - Procurement
- Construction Management
- Commissioning
- PIPework Isometric Drawings
- Turnkey/Design & Build
- Electrical / Mechanical Hazardous Area
- Industrial Installations

Trident Engineering Consultants Ltd is a private company, founded in 1987 by a group of Consulting Engineers who saw a growing market for their specific expertise in the field of Downstream Oil and Gas Storage and Distribution Development.

Trident's engineers' extensive experience, gained in both offshore / on-shore engineering and project management, enabled the Company to form a firm client base in a very competitive market place.

Trident is able to offer Clients a multi disciplinary engineering and design practice with a solid engineering heritage and a progressive approach to our clients needs.

Our engineers and designers fully appreciate that consistently high standards and commitment are required to develop customer loyalty on a mutual dependency and trust basis. We have upheld our unique position in the market place over many years, based on;

Identifying and understanding the Clients needs:

- Commitment to Clients project from conception to fruition
- Professionalism, set high standards and adhere to them
- Deliver what we promise
- Innovative design utilising the latest technological advances.
- Awareness and sensitivity to working environments
- A personal approach
- Acting with integrity at all times

With a modern approach to effective engineering, the philosophy of Trident is to achieve a cost effective solution, which does not detract from the quality of the engineering services and the end product provided.



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Facilities:

Trident's offices are located close to Glasgow International Airport and are equipped with the latest draughting & design software packages, video conferencing and associated IT infrastructure which enables Trident to provide support to our Clients, irrespective of their location worldwide.

Import/Export and Bulk Fuel Storage Facilities

Ross Chemical & Storage Company Limited,
Grangemouth Oil Complex, Scotland.

Trident successfully completed the Design and Project Management of the Plant upgrade pictured here in the foreground in 1995.

Further projects completed at this plant to date include truck bottom loading, water foam fire protection, terminal automation, additional 3 x 5000 tonne vertical tankage (1998), new ship receipt storage, truck loading and vapour balancing and Butyl Acrylate (1999).

Trident has also carried out projects for Rohm & Haas in their Chemical Storage Plant in Grangemouth.

In the background is BP's Grangemouth Refinery where Trident is pleased to have been associated with projects dating back to 1987, when the company was founded.

Inverness Terminal, BP Oil UK Limited

BP made a major investment in their Inverness Terminal. Trident successfully designed and project managed the Terminal Redevelopment, Offloading / Loading Facilities, Bottom Loading Gantries, Vapour Recovery System, New Pump Units, Product Transfer Pipework and the Installation of Electrical Metering Systems, with a combined project value of £2.5 million.



Ipswich- PACE Petroleum



Greenfield site to oil storage depot in 6 months.



BP Oil UK Terminal, Aberdeen, Scotland

Joint venture terminal redevelopment between BP and Shell.

New storage tanks, road loading facilities, multi-user additive system for BP, Shell and Esso, new water/foam fire hydrant, sprinkler and drencher systems, reposition of marine –offloading jetty for larger vessels and install new bunkering facilities.

Design, Project management, site supervision and commissioning by Trident Engineering Consultants



Redevelopment phase at BP Oils Aberdeen Terminal



Ships off loading facilities were upgraded to accommodate 6000 tonne vessels (from 3000 tonne). Trident redeveloped this Terminal installing 4 new storage tanks, truck loading facilities and fire protection in 1991. During 2003 Trident completed the design, supervision and commissioning of 2 Double Walled 4500 tonne vertical tanks.

BP Oil UK Limited, Grangemouth Terminal



Eight new bottom loading road vehicle filling gantries multi-user additive injection facilities for BP, Shell & Esso, vapour collection and meter proving returns blending system.

Design, project management, site supervision and commissioning by Trident Engineering Consultants.

African Downstream Projects

Following approval from the World Bank, Trident designed and commissioned the replacement pipelines and leak detection system for BP Tanzania Limited to replace the 2.5km long oil and gas pipelines between the Kurasini Oil Jetty and BP / Gapco / Caltex storage terminals. Trident also carried out the redevelopment of various BP rail siding accommodating two different railway gauges with an impervious surface and drainage systems.



BP Dar Es Salaam Rail Head



BP Tanzania Moshi Depot Redevelopment

Trident were then commissioned to design the redevelopment of BP's Moshi Depot comprising new storage tanks, rail receipt, truck loading, offices, parking and drainage systems.



World Bank funded Marine Oil & Gas Pipeline Reception Facilities and Cross-country Pipelines *Project Management by BP Tanzania Design by Trident Engineering Consultants.*



World Bank funded Marine Oil & Gas Pipeline Reception Facilities and Cross-country Pipelines *Project Management by BP Tanzania Design by Trident Engineering Consultants.*

BP Tanzania, Moshi Depot Re-development



Comprising new vertical and horizontal storage tanks, road vehicle loading facilities complete with pipework, electrical and instrumentation works.



Trident carried out the design for upgrading the existing LPG Storage & Bottling Plant, fixed Fire Water Cooling System to NFPA 15 and installed a new 60 tonne LPG Storage Vessel at Kampala Terminal.



VTTI Kenya, firewater pump hose, firewater system designed to NFPA standards

VITTI Kenya, New Oil Terminal, Mombasa Kenya





VTTI Kenya, Mombasa Oil Storage Terminal Phase 1 Complete March 2012 -
Mechanical & Electrical Design by Trident



AGOL, New LPG Terminal, Mombasa Kenya



African Gas & Oil Company- New LPG storage Terminal complete with off-shore mooring and 5km subsea and cross country pipeline.

Trident Engineering Consultants – Lead Engineers responsible for project management, engineering design & procurement.

African Gas & Oil Co. Ltd, Mombasa Kenya



New LPG storage and distribution terminal receipt from off-shore CBM
Currently under construction, commissioning planned Jan 2013.



Loading gantry piping and equipment.



LPG tanks platform and handrails installation in progress.



Compressor/ pumps installed and the piping manifold in progress.



Offshore pipeline connection to the onshore pipeline complete.



African Gas & Oil co. Ltd- Mombasa, Kenya

Trident Engineering responsible as lead consultants for the design, procurement and project management for the LPG storage and distribution terminal comprising conventional buoy mooring, 5km x 12" pipeline, LPG bullets and road truck loading facilities.

PG Plant Design and Construction

Trident is responsible for installation of LPG facilities for BP Oil's UK petrol stations. Trident carries out installation and commissioning of LPG facilities in accordance with BP specifications. It provides design and development of fully buried and aboveground systems for storage of LPG at the retail forecourts. Trident also provides on site supervision and commissioning of LPG installations throughout the UK via its team of highly qualified and experienced engineers.



Trident has successfully completed the Design and Build of LPG Installations for major supermarket retail sites.



Typical aboveground installation of 3 x 1 tonne vessels to suit safety separation distances as per LPG Codes of Practice for BP Dealer Sites.



Farnborough Airport, England Design and Build New On Airport Aviation Fuel Tankfarm, Complete June 2003.

TEC have recently successfully completed the design of a fuel dispenser road vehicle test rig facility, company's own consumption (COC) refuelling facilities and vehicle service building for Air France and Kuwait Petroleum at Charles de Gaulle Airport, Paris

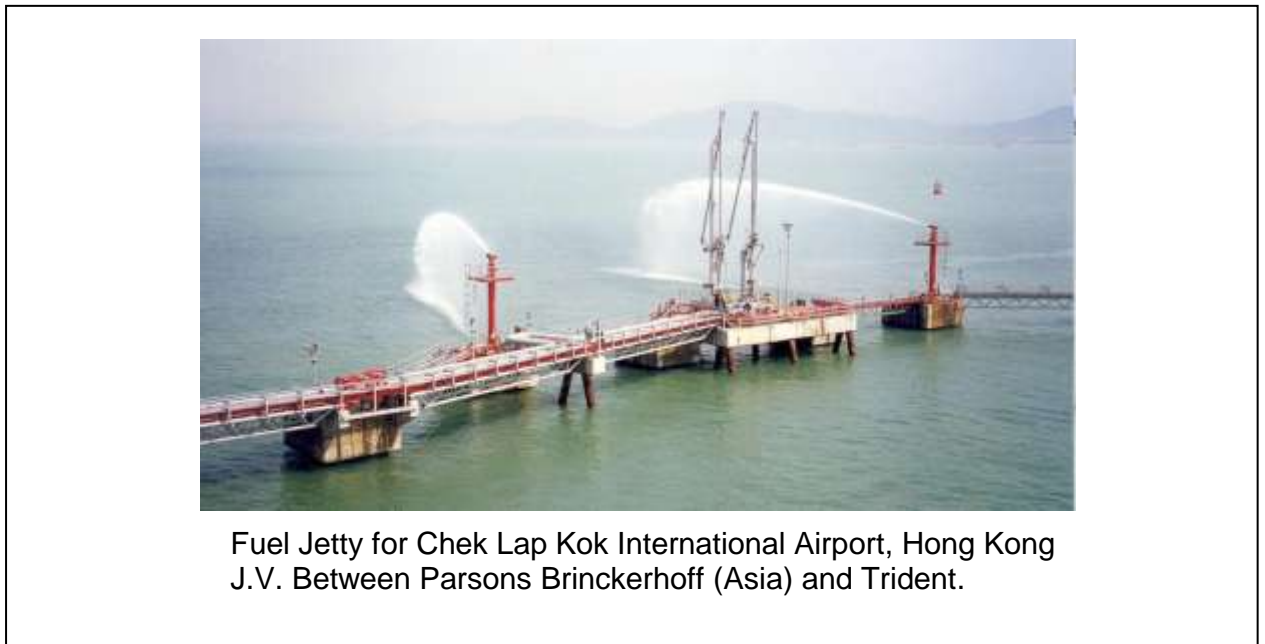


Charles De Gaulle Airport, France Air France / Kuwait Petroleum.

Marine Off-Loading Facilities



Trident has been involved with the Design of many Marine Import Facilities for Multi – Products ranging from 3000 to 80,000 Tonne Marine Vessels.



Fuel Jetty for Chek Lap Kok International Airport, Hong Kong
J.V. Between Parsons Brinckerhoff (Asia) and Trident.

Pipeline Booster Pump Stations

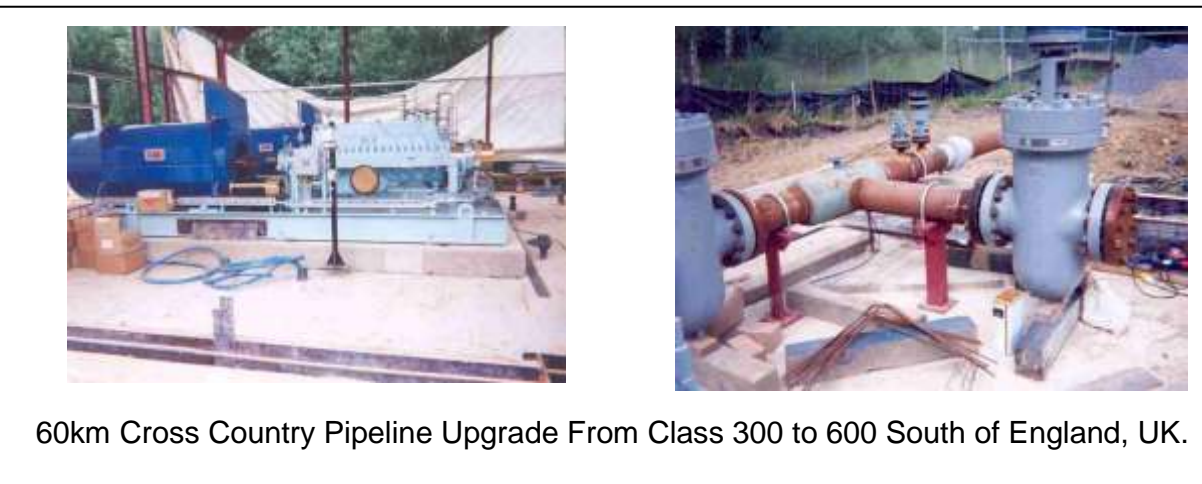


Kuwait Petroleum International



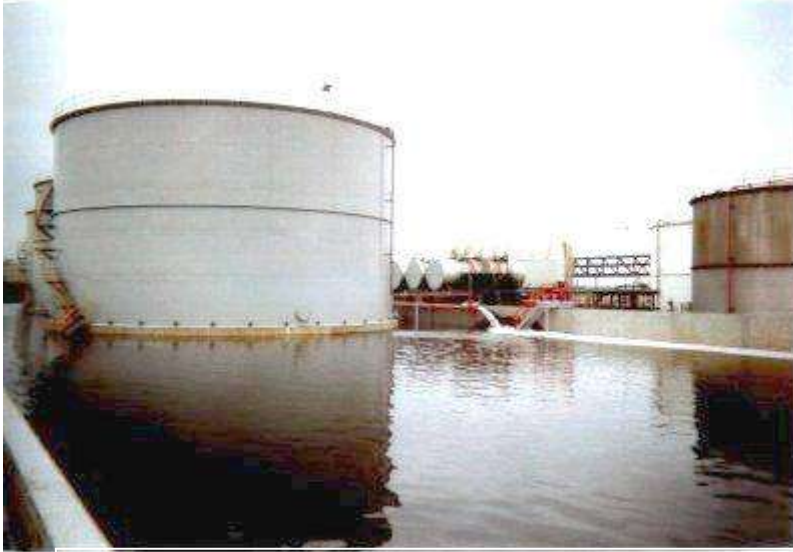
Kuwait Petroleum International
Portbury Docks, England.

Kuwait Petroleum International
Cross Country Booster Pumps.



60km Cross Country Pipeline Upgrade From Class 300 to 600 South of England, UK.

Tankage Projects

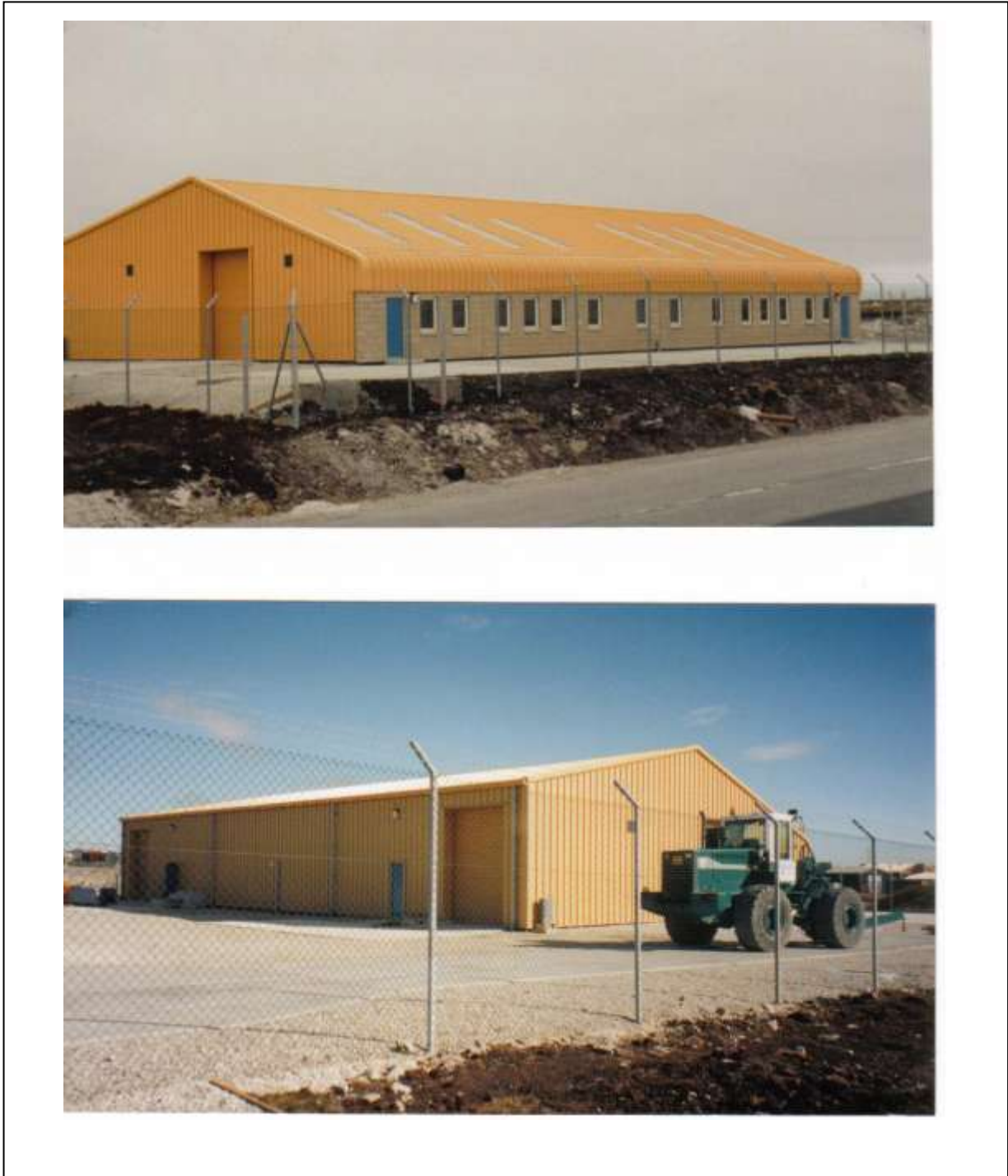


Ross Chemical & Storage – New Tank Compound
Under Hydrostatic Test.



Aberdeen Terminal, Scotland - New double walled
Tankage under Construction for BP Exploration.

Stanley Services, Stanley, Falklands
New industrial units, Stanley



Project management and site supervision by Trident Engineering Consultants.

Hambantota, Sri Lanka



Hambantota Fuel Farm under construction (2012)



Membrane being installed under new aviation fuel tanks (2012)

Shell UK, Plymouth Terminal, England



Joint venture project between Shell and BP providing new bottom loading road vehicle filling gantries, vapour collection, multi user additive injection facilities, terminal automation and environmental upgrading.

Design and project management by Trident Engineering Consultant.

Ross Chemicals & Storage Company



Modernisation and extension of the terminal comprising truck loading, vapour collection, meter proving return system, additive injection environmental upgrading and terminal automation.

Designed by Trident Engineering Consultants.

Lerwick Depot, Scotland
Scottish fuels

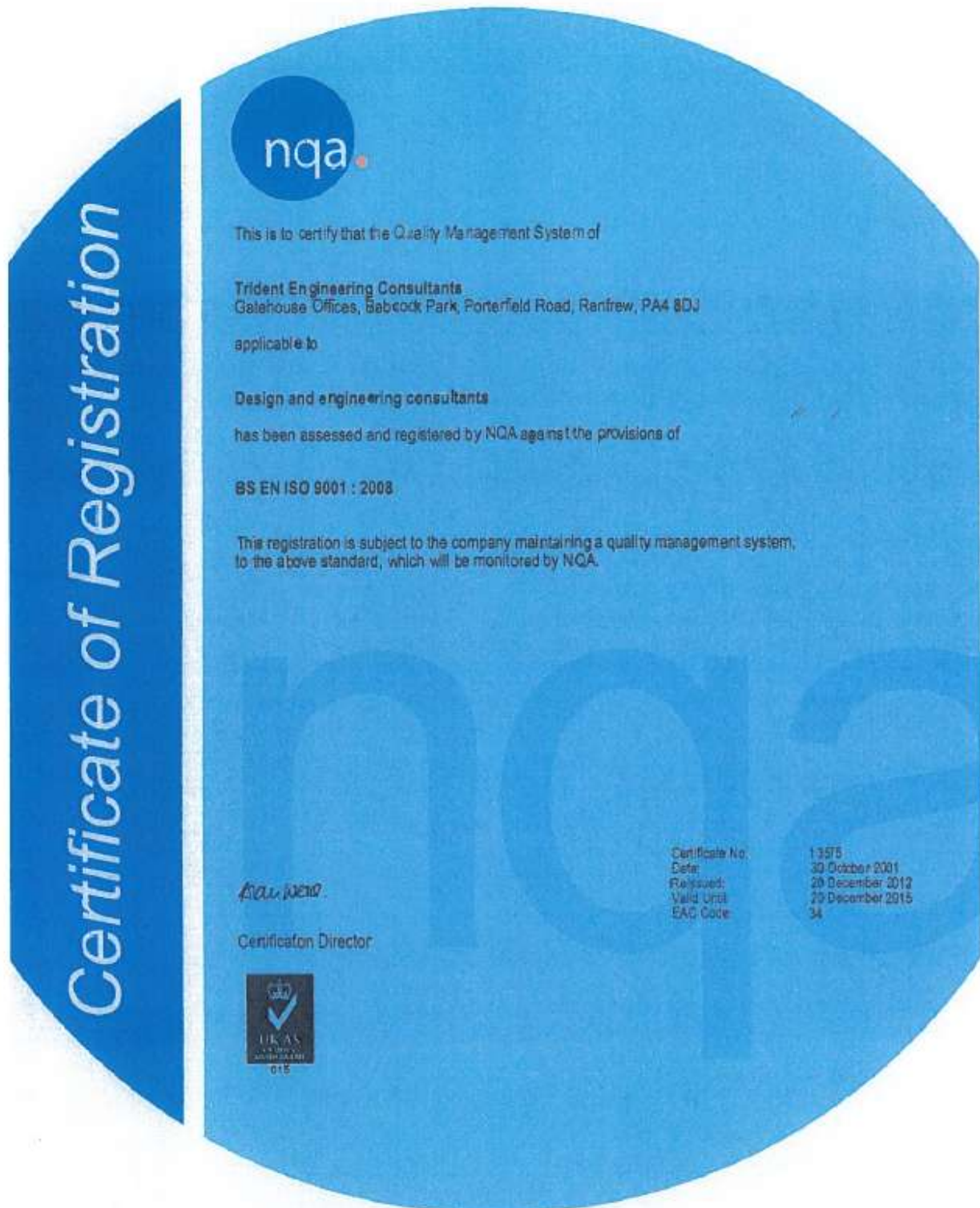


Replacing storage tank (2012)



New tank under construction within Lerwick Depot bund

Quality Management System



The use of the UKAS Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 015 held by NQA. NQA is a trading division of Assurance Group Ltd, Registration No. 02913482, Registered Office, Yarnold House, Houghton Hall Park, Houghton Regis, Dunstable, Bedfordshire LU6 6ZK. This certificate is the property of NQA and must be returned on request.

Professional Development

Tridents policy of continuing professional development to meet our Clients requirements, allows us to provide all aspects of Project Design and Implementation. Through its commitment to quality Trident has become a member of various professional associations a list of which can be viewed here.



Client list

- AECOM Asia
- African Gas & Oil Co (Kenya)
- Air BP
- Air France
- Arqiva
- Avin Oil (Greece)
- Bayford Oils
- BP Bovis
- BP International
- BP LPG
- BP Oil UK
- BP Marine
- BP Oil Europe Distribution
- BP Exploration
- BP Tanzania
- Briggs Oil
- Bristol Ports Company
- Brogan Fuels
- Caledonian Oil
- Carlton Fuels
- Certas Energy / GB Oils
- Channoil Consultants
- Channel Islands Fuels
- Daniel Industries
- Davy Offshore
- Edmund Nuttall ELF Oil (UK)
- EMO Oils
- ESSO Petroleum ExxonMobil
- Gammon Construction (Asia)
- Gleaner Oils
- Gulf Oil
- Honeywell Enraf
- James Fisher Defence
- Kurrent Technologies Ltd (Kenya)
- Kuwait Petroleum
- Leightons Asia
- Manx Petroleum
- Mobil Oil Company
- Motherwell Bridge Services
- Lubrizol
- Nynas
- Pace Fuelcare
- Parsons Brinckerhoff (Asia)
- Pemed Limited
- Rohm & Hass
- Ross Chemicals & Storage Co.
- Rubis
- Sahara Group, Nigeria
- Scottish Fuels
- Shell Aviation
- Shell Marine
- Shell Oil Products
- Shell Uganda
- Stanley Services (Falkland Islands)
- Tag Aviation
- TCIL (Channel Islands)
- Texaco
- Topaz Energy Group
- Total UK
- Turner Facilities Management
- UK Construction
- United Distillers & Vinters
- VTTI
- VIVO Energy
- World Bank
- Wood MacKenzie