



PORTS & HARBOURS

MARITIME

**ARCH  
HENDERSON**

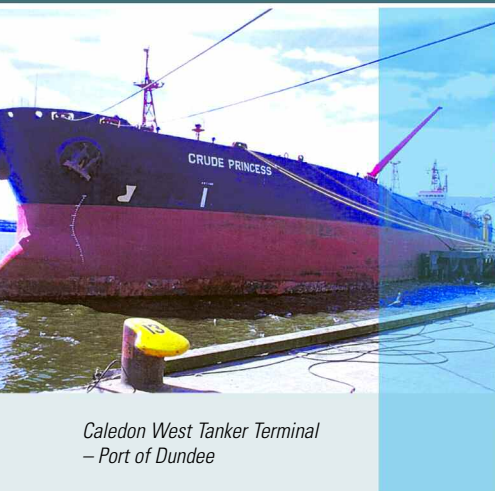
Established 1919

# ARCH HENDERSON

Established 1919

## CIVIL, STRUCTURAL, ARCHITECTURAL & ENVIRONMENTAL SERVICES

- Port Planning and Development
- Innovative Design of Maritime Structures
- Environmental Impact Studies
- Ro-Ro, Passenger and Bulk Terminals
- Container Terminals and Operations
- Dredging, Reclamation and Coastal Protection Breakwaters
- Shipyards, Dry Docks, Slipways and Shiplifts
- Dock Gates
- Small Harbours and Marinas
- Fuel Storage and Distribution Terminals
- Fish Markets and Fish Processing Factories
- Diving Inspections and Hydrographic Surveys
- Site Investigations and Geotechnical Engineering



*Caledon West Tanker Terminal  
– Port of Dundee*



*Shipbuilding Hall  
– Aberdeen Harbour*



*New linkspan and passenger walkway  
– Lerwick Port Authority*

Arch Henderson was formed in 1919 to offer engineering services in the specialised fields of harbour works, coastal protection and ship repairing facilities. The firm has expanded and diversified to become a multi disciplinary practice, with civil, structural and architectural departments procuring a wide range of projects from new docks to multi storey office developments.

With five offices from Lerwick to Clydebank, the firm provides a “local” service to clients in all areas of Scotland. The Partners consider a “local” service to be a key factor in providing a “good” service, allowing a quick response to client needs, with a knowledge of local factors, contractors and environmental considerations.

Our goal is to expand at a manageable rate, building a working relationship and trust with clients and continuity of service to mutual benefit. Our record proves that we have been successful in this respect, with a number of clients of more than 20 years’ standing. To achieve this, the Partners and Associates have developed a strong “hands on” policy, from project concept to completion, and personally supervise all design, tendering and project management.

We believe that it is essential to give clients the following:

What the client actually needs and wants, in a cost-effective manner, with the best advice and experience we can give.

A project conceived, designed, tendered and built to a defined programme and cost budget.

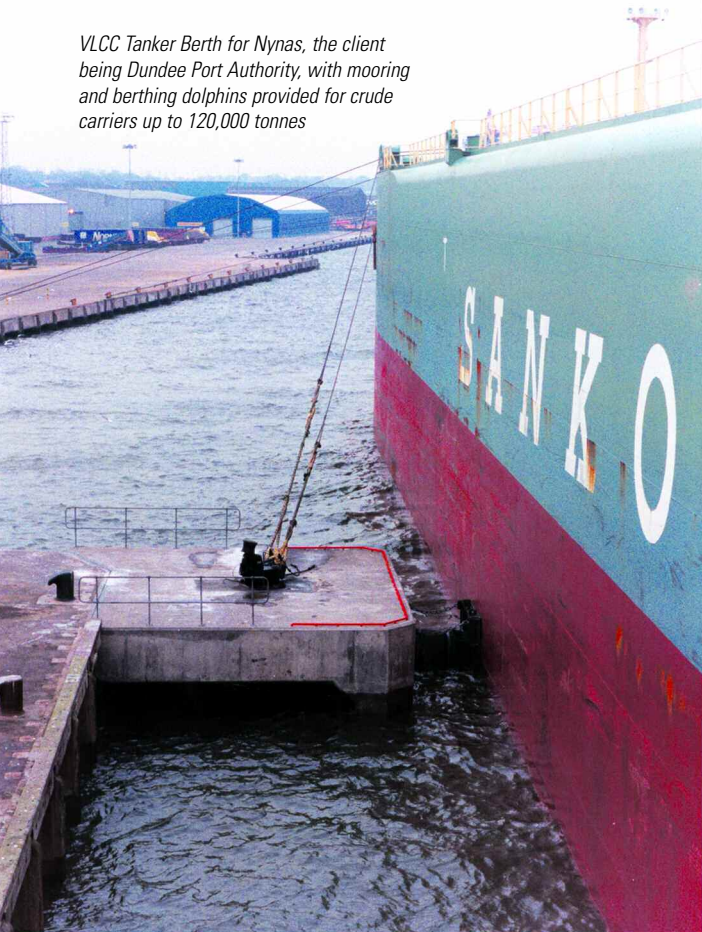
Regular consultations in developing proposals, with the client involved at each stage in meeting the requirements.

Regular reports on progress and costs throughout the project timescale.

All the above is achieved with an experienced and enthusiastic staff, working with state-of-the-art technology in both design and software. Arch Henderson fully utilises computer-aided design and drafting facilities, along with an integrated IT library.



VLCC Tanker Berth for Nynas, the client being Dundee Port Authority, with mooring and berthing dolphins provided for crude carriers up to 120,000 tonnes



Telford Dock - Aberdeen Harbour Board



Telford Dock, view from South  
- Aberdeen Harbour Board



In 1994, Arch Henderson were commissioned by Aberdeen Harbour Board to convert the old and out-of-date shipyard, formerly operated by Hall Russell and British Shipbuilders, into the Telford Dock, a deep-water dock, capable of accommodating vessels up to 20,000 T, at five deep-water berths. The project also included a jetty, two transit sheds, 26,000 m<sup>2</sup> of heavy-duty paved open storage, with all the necessary services, roadways, heavy lift pads and dredging. Project value - £12.5m

## DOCKS



Arch Henderson in-house diving team  
with three qualified engineer-divers

Torry Quay –  
deep-water  
berth  
construction  
by sheet pile  
wall and  
relieving  
platform, for  
Aberdeen  
Harbour  
Board







*Point Law Terminal - Aberdeen Harbour*

The firm has been almost solely responsible for designing the Point Law promontory, providing consultancy services for both BP and Aberdeen Harbour Board. Arch Henderson provided all the civil, structural and project management services for the development of BP's main fuel storage and distribution terminal, and over a period of eight years re-built the quays on the north, south and east sides of Point Law for Aberdeen Harbour Board. The reconstruction of the quays has been necessary to accommodate deeper draughted vessels and heavier quay loads.



*North Harbour development with 400m of deep-water quay open work construction - Lerwick Port Authority*



*Pontoon Jetty - Aberdeen Harbour Board*



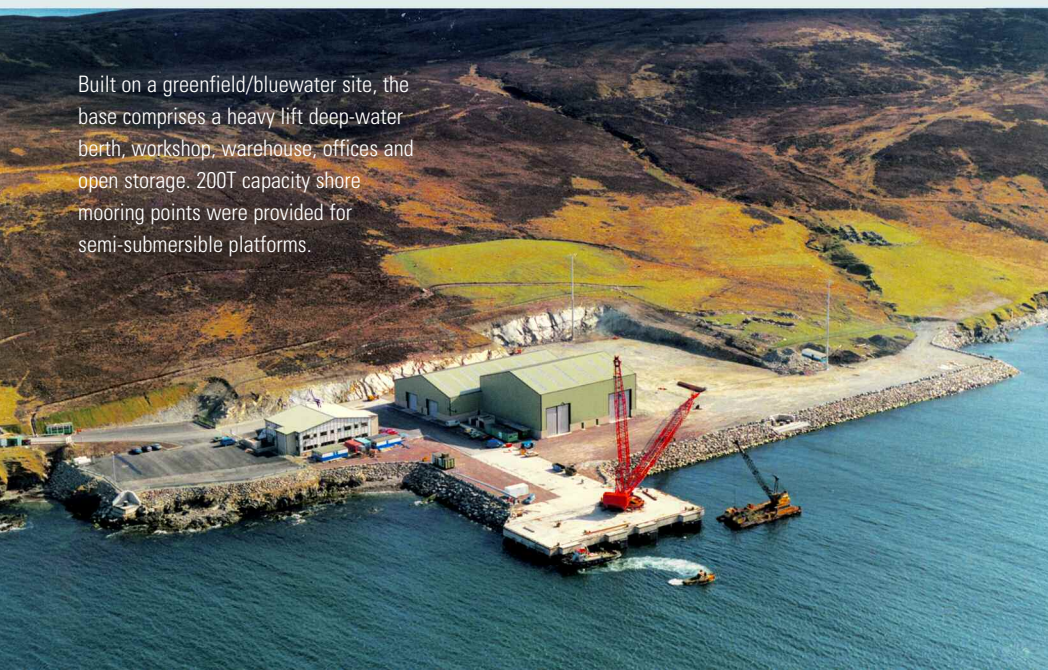
*Seawater intake, screening and pumping chambers - EPC Dock, Qatar*

## DOCKS

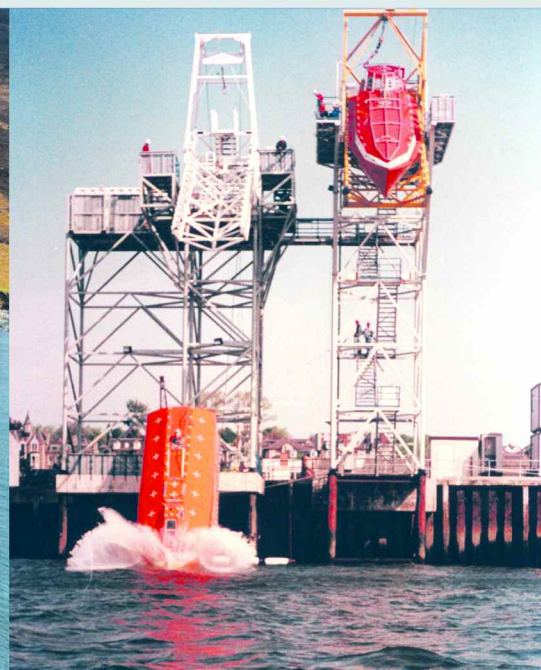
### *I.R.M. Shetland*

*Dales Voe oil rig inspection, repair and maintenance base, Shetland Islands.*

Built on a greenfield/bluewater site, the base comprises a heavy lift deep-water berth, workshop, warehouse, offices and open storage. 200T capacity shore mooring points were provided for semi-submersible platforms.



*RGIT Montrose's freefall lifeboat training towers, Dundee - design of foundations and steel towers*



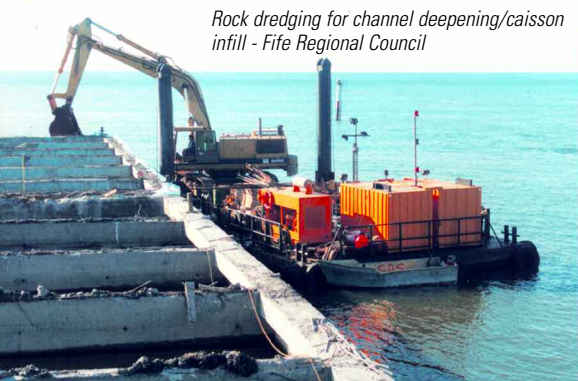


Holmsgarth development  
- Lerwick Port Authority



The Holmsgarth development at the Port of Lerwick was built over a period of approximately 10 years, commencing from the north with the Shell base to support offshore oil and gas operations, followed by the P&O Ferry Terminal and the Morrison Dock at the south end for the fishing fleet. Arch Henderson were engaged as engineers throughout all the development phases for the marine works, reclamation, warehousing, offices, ro-ro facilities and roadways.

Rock dredging for channel deepening/caisson  
infill - Fife Regional Council



## DOCKS/DOCK GATES

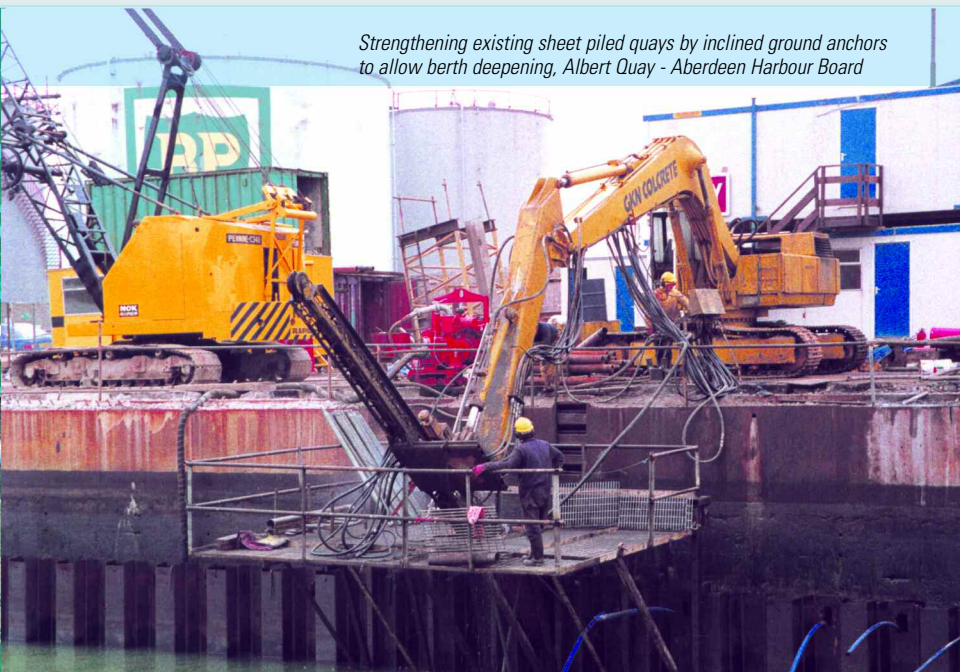
Storm gates  
at Fraserburgh  
Harbour

Impounding gate at Camperdown Dock,  
Dundee Harbour

Cutter suction head for rock dredging, Qatar



Strengthening existing sheet piled quays by inclined ground anchors  
to allow berth deepening, Albert Quay - Aberdeen Harbour Board





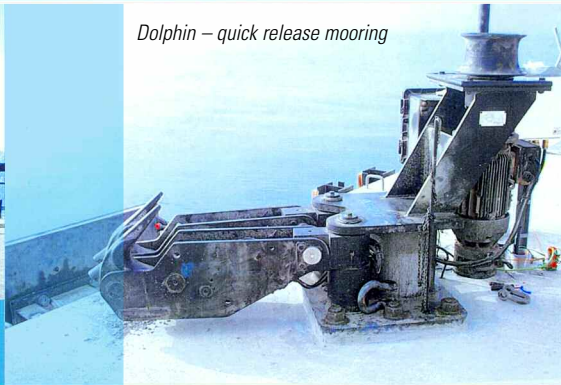
*400m long container berth,  
Kellogg Brown & Root, Doha*



Container traffic continues to grow worldwide and ports have to be continually upgrading their facilities to operate efficiently, speedily and safely. Terminals have to be planned and laid out carefully to optimise these requirements and, with our extensive experience of port operations, we are well placed to formulate economic solutions to terminal layouts, quay structures, crane rail track and all the necessary infrastructure. Arch Henderson have been involved with large sophisticated terminals with gantry cranes and also smaller ones with portal cranes and forklift trucks.



*Dolphin – quick release mooring*



## CONTAINER TERMINALS

*Container crane installation at  
Grangemouth - Forth Ports*



*Container crane at berth,  
EPC Dock, Qatar*





Matthews Quay Ro-Ro terminal  
and deep-water berth  
- Aberdeen Harbour Board



Eastern Wharf Ro-Ro - Port of Dundee



Ro-Ro pier and linkspan at  
Hatston - Orkney Islands  
Council under construction



Troon linkspan -  
Associated British Ports



Elevated walkway passenger access  
- Lerwick Port Authority



New linkspan and passenger  
walkway - Lerwick Port Authority

## RO-RO

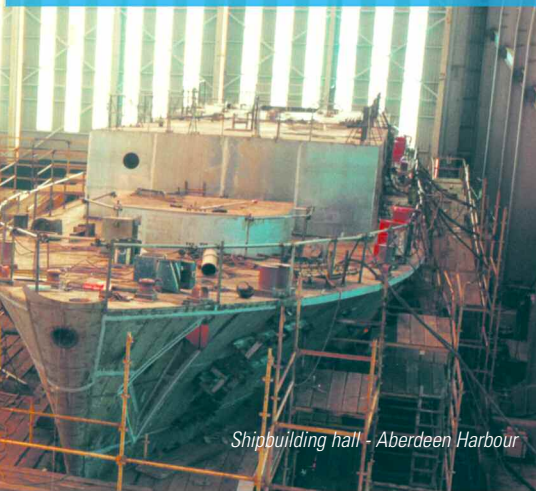
Rosyth two level Ro-Ro - Forth Ports  
(Supervising Engineers)







Slipway cradle bilge support - Macduff Shipbuilders



Shipbuilding hall - Aberdeen Harbour



Fitting-out berth  
- Ferguson Shipbuilders



Covered dry dock  
- BAE Systems



Slipway with traverser bay and side berths  
- Fraserburgh Harbour Commissioners

# SHIPYARDS



Dry dock and floor service pit  
- Craig Group Shiprepairing



Dry dock and deepening of Balaclava Basin  
- Fraserburgh Harbour Commissioners



Shiplift and covered ship repairs hall - Peterhead Harbours





Having specialised in maritime works since the firm's establishment in 1919, breakwaters and coastal protection works have constituted a large proportion of the workload. This has included a number of new breakwaters, comprising rubble mound, caisson construction, precast concrete walls with rubble infill and double walled sheet piled structures. Coastal protection works have taken a variety of forms, depending on water depth of approach, wave regime, availability and quality of local rock. Most commonly adopted has been the rip-rap rock slope, but gabions, precast concrete armour units and in-situ sea walls have also been deployed.

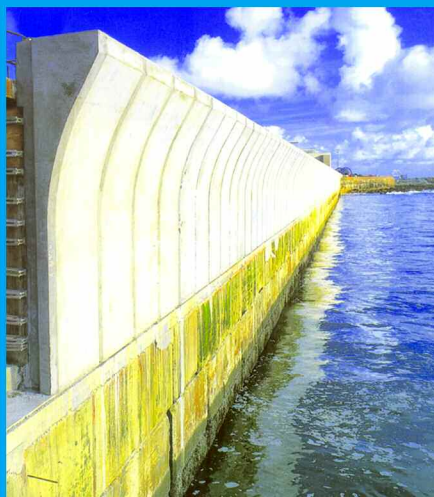
In addition to the design of breakwaters, Arch Henderson have annual commissions from a number of Port Authorities to carry out surveys and diving inspections on breakwaters and coastal structures. The repair and maintenance work which ensues gives invaluable knowledge and experience which is usefully deployed in the planning and design of new works.

*Harbour entrance in storm conditions - Peterhead.*

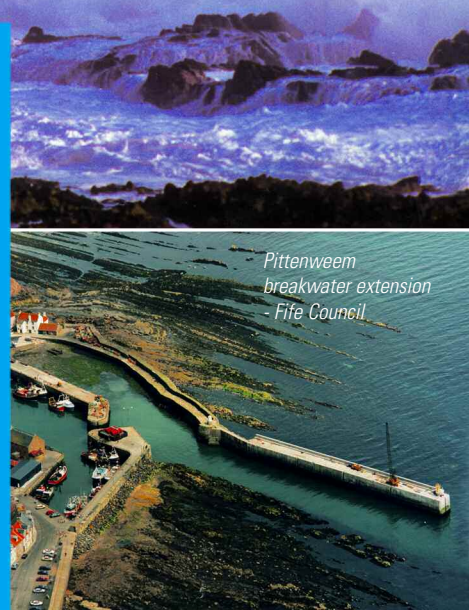
*Annual diving inspections maintenance and strengthening works.*



*North breakwater parapet wall  
- Peterhead Bay Authority*



*Supervision of sea defence works  
- Torness Nuclear Power Station*



*Pittenweem  
breakwater extension  
- Fife Council*

# COASTAL PROTECTION BREAKWATERS

*Stonehaven breakwater  
- Aberdeenshire Council*



*Breakwater quay, Symbister  
- Shetland Islands Council*

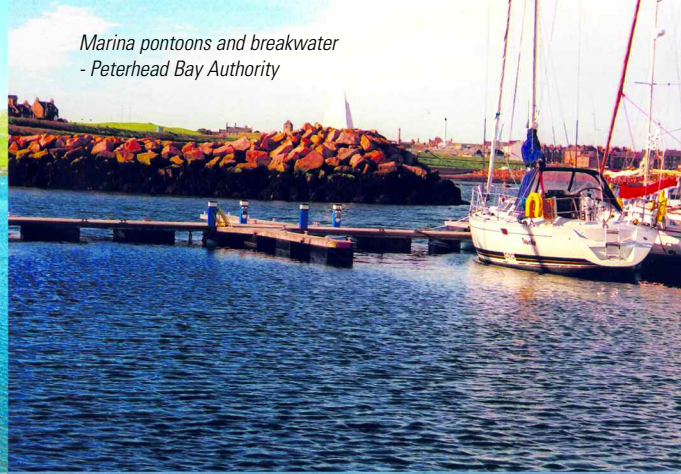




West Burrafirth Pier - Shetland Islands Council



Marina pontoons and breakwater - Peterhead Bay Authority



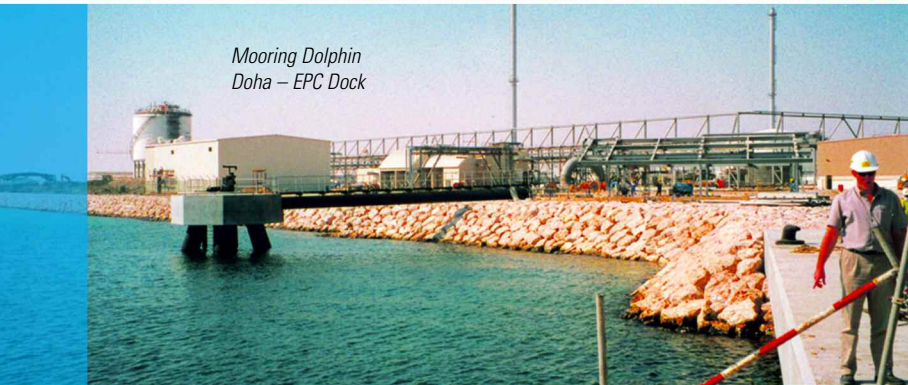
Gremista Marina - Lerwick Port Authority



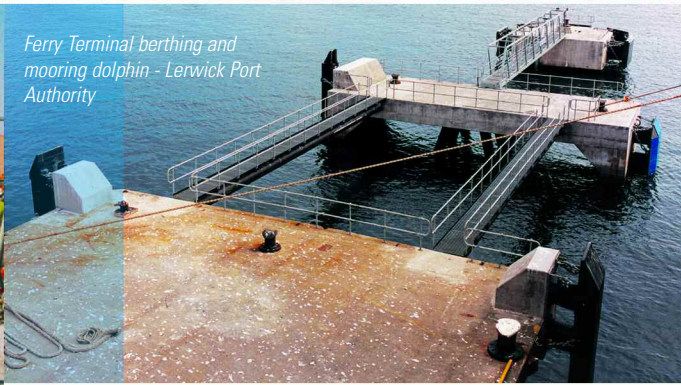
Burghead jetty - Moray Council



Mooring Dolphin  
Doha - EPC Dock



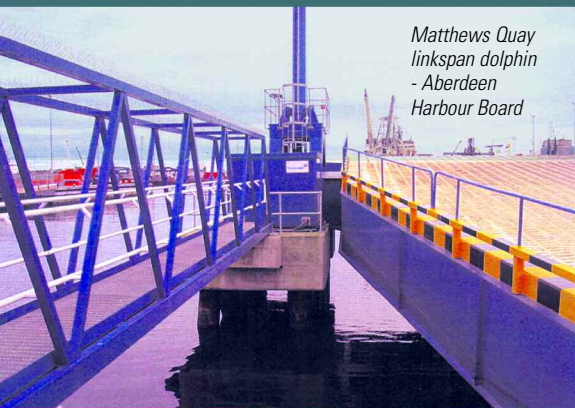
Ferry Terminal berthing and  
mooring dolphin - Lerwick Port  
Authority



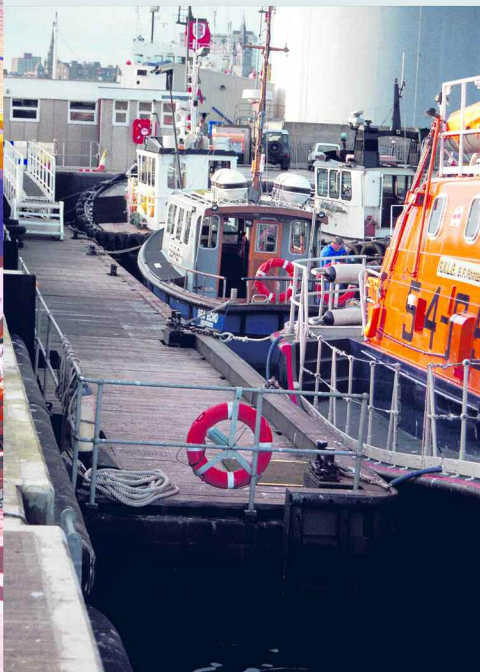
## MARINAS AND SMALL BOAT HARBOURS

## DOLPHINS FENDERS

Matthews Quay  
linkspan dolphin  
- Aberdeen  
Harbour Board



Afloat berth for Severn Class Lifeboat - RNLI



Ro-Ro berth, Rosyth - Forth Ports  
(Supervising Engineers)



Berth Fenders  
Doha - EPC Dock







*Maintenance and workshop building  
- Aberdeen Harbour Board*

To complement the civil and structural disciplines and provide clients with a ONE-STOP service, the firm developed a building and architectural services division in the late 1980's.



*Fish processing factory, cold stores, chill rooms, blast freezers - Shetland Catch*



*Ro-Ro Terminal Building - Lerwick Port Authority*



*Refrigerated fish market - Peterhead Harbours*

# PORT BUILDINGS

*Ice plant, Fraserburgh - Faithlie Ice*



*Castle Seafood Centre,  
Salloway - Shetland  
Islands Council*



*Pacific Wharf transit shed - Aberdeen Harbour Board*



## SELECT LIST OF CLIENTS

### PORTS, HARBOURS, MARINAS

Aberdeen Harbour Board  
Aberdeenshire Council  
Amcon Project Management  
Arbroath Harbour Slipway  
Associated British Ports  
Caledonian MacBrayne  
Clyde Marina  
Clydeport plc  
Cromarty Firth Port Authority  
Forth Ports Limited  
Fraserburgh Harbour Commissioners  
Lerwick Port Authority  
Lybster Harbour Society  
Montrose Port Authority  
Moray Council  
N. Ireland Fishery Harbour Authority  
Oban Yachts  
Peterhead Bay Authority  
Peterhead Harbour Trustees  
Port of Dundee Limited  
Port Of La Turballe  
Rhu Marina  
Rosyth Royal Dockyard  
RNLI  
Sandpoint Marina  
Scrabster Harbour Trust  
Stornoway Port Authority

### SHIP AND BOAT YARDS

A. Noble & Sons  
Ailsa Troon  
BAE Systems Marine (YSL) Limited  
Buckie Shipyard  
Craig Group Shiprepairing  
Ferguson Shipbuilders  
Great Grimsby Slipway  
Kvaerner Govan Limited  
Macduff Shipyards Ltd  
Malakoff & Wm. Moore Ltd  
McGruiers Boatyard  
Miller of Crail  
Rosyth Royal Dockyard  
Timbcraft Ltd  
UIE (Scotland) Limited

### FISH PROCESSING Etc

Faithlie Ice Company  
Hugh Simpson Ltd  
Norfrost Caithness  
Peterhead Ice Company  
Salmac Sales Ltd  
Scrabster Harbour Ice Plant  
Shetland Catch  
Shetland Fishermen's Co-Op  
Shetland Islands Council  
Wick Ice Plant

### INDUSTRIAL and COMMERCIAL

Celtic Regeneration  
Cockenzie Power Station  
Consafe (Burntisland)  
DTEO  
Enterprise Engineering  
Esso Petroleum  
Fentek  
Laing Management (Railtrack)  
Methil Power Station  
Morrison Homes Limited  
Orange PCSL  
Tullis Russell

### OIL RELATED

Asco Oils Ltd  
Baroid Ltd Services  
BJ Services Company (UK) Ltd  
BJS Oilfield Technology  
BP Oil Ltd  
BP Petroleum Development Ltd  
Esso Petroleum  
Inchcape Inspection & Testing  
Magcobar Osca  
MI Swaco  
Mobil Aberdeen  
NI Baroid  
O.I.L.  
Osca UK  
Petrofina Aberdeen  
R.G.I.T. Montrose  
Seaforth Maritime Ltd  
Shell UK Exploration  
Tetra Drilling Fluids  
Texaco Ltd  
Texaco North Sea UK Company  
Transocean

### CONTRACTORS

Atlas Marine  
Barry D Trentham  
CHAP Construction  
Charles Brand  
Donald Harper Engineering  
Donarm (Construction) Limited  
F P M Henderson  
Farran  
Fentek  
George Leslie  
Gilchrist Steels  
Hall & Tawse  
Hunter Construction  
Inverclyde Land & Marine  
Lanarkshire Welding  
Linkflote Engineering  
Morrison Construction  
Edmund Nuttall Ltd  
Nuttall John Martin  
Pennant

### PUBLIC SECTOR

Aberdeenshire Council  
Angus Council  
Argyll And Bute Council  
Caithness District Council  
Comhairle nan Eilean Siar  
Common Services Agency  
Dunbartonshire Enterprise  
East Of Scotland Water  
Fife Council  
Fife Enterprise  
Fife Healthcare  
Grampian Health Care  
Highland Council  
Highlands and Islands Enterprise  
Hydro Board  
Inverclyde District Council  
Kirkcaldy Acute Hospitals  
Moray Council  
North East Fife District Council  
Northern Joint Police Committee  
Orkney Islands Council  
Scottish Enterprise  
Scottish Enterprise Tayside  
Scottish Health Service  
Shetland Islands Council  
Tayside Council  
U.K. Atomic Energy Authority  
West of Scotland Water

### COASTAL ENGINEERING/RECLAMATION

Peterhead Bay Authority  
Moray Council  
Aberdeenshire Council  
Fife Regional Council  
Shetland Islands Council  
Lerwick Port Authority  
Railtrack Special Projects  
Clyde Marina

### ENVIRONMENTAL MANAGEMENT

Transco  
Penspen  
Entrepose Industrial Services  
Environmental Resource Management  
Shetland Offshore Environmental Services  
Burgess & Garrick  
Scottish Natural Heritage

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[www.arch-henderson.co.uk](http://www.arch-henderson.co.uk)

# ARCH HENDERSON

Established 1919

Member of the Association for Consulting and Engineering

Associate Member of the Association of Diving Contractors

Member of the Association for Project Safety