



SOUTHBAY CIVIL ENGINEERING LIMITED

Constructing & Maintaining Essential Marine Assets



Introduction to Southbay

PAUL STEPHENSON, MANAGING DIRECTOR



industry currently handles more than 500 million tonnes of freight as well as over 60 million passenger journey's every year. In addition to this over half of the UK's population live within 30 miles of the sea placing a greater strain on the marine structures used to protect our coast line, which in itself provides communities with an essential economic source through vital industries such as fishing and tourism. In order to cater for such demands associated assets require continuous maintenance, upgrade and expansion for which Southbay has played a vital part.

harsh, exposed environments. Delivering contracts ranging in value from £5k to £19m we have developed successful working relationships with a number of long standing clients including PD Ports, Forth Ports, Port of Tyne, Scottish Power, SABIC Petrochemicals and various local authorities across the UK. Our capabilities range from the delivery of traditional contracts, design & build, to Early Contractor Involvement. Realising the importance in constantly evolving to provide our clients with first class performance it is our objective to become the contractor of choice.

Marine civil engineering has long been held as a vital service to ensure the continued operation of the UK's ports and harbours, an industry which is the second largest in Europe. The UK's port

Across the last 15 years Southbay have developed a reputation as one of the UK's leading maritime civil engineering contractors, undertaking technically challenging contracts within

t: 0191 234 2244
e: ps@southbaycivils.co.uk

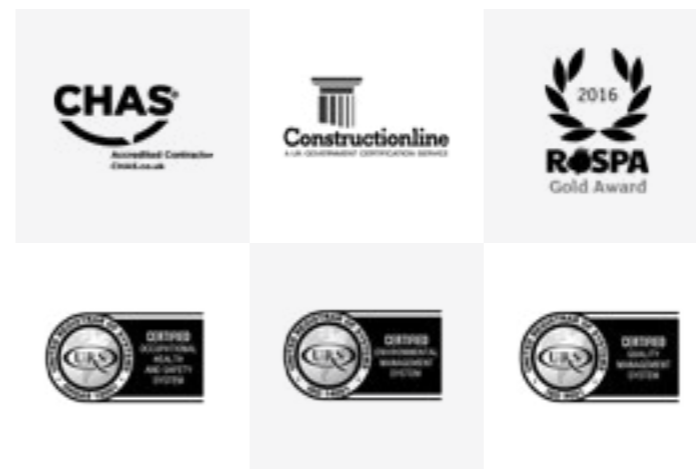
HERE TO HELP



Martin Cairns
Marketing & Tendering
Co-ordinator
0191 234 2244
martin.cairns@southbaycivils.co.uk

A first rate contractor who delivered our £5.75m project to renew North Shields Fish Quay to the highest standards, on time and within budget.

JEREMY PRITCHARD, MANAGING DIRECTOR,
NORTH SHIELDS FISH QUAY COMPANY



Specialists in Marine Civil Engineering

SOUTHBAY HAVE FORGED A REPUTATION AS SPECIALISTS IN MARINE CIVIL ENGINEERING. OUR EXPERIENCE INCLUDES COASTAL STRUCTURES, MAJOR QUAYSIDE CONSTRUCTION AS WELL AS THE UPGRADE AND MAINTENANCE OF QUAYSIDE AND JETTY FACILITIES.

Since forming in 2001 Southbay have established a successful track record in the delivery of works across all aspects of marine civil engineering, this includes the skills required in the delivery of design and build contracts. To this end we have developed successful working relationships with a number of leading design consultants. Many of our design solutions have delivered savings to clients and ensured minimal disruption to live operational environments.

Undertaking projects as either main or sub-contractor we have established a core team of highly trained and experienced staff. This resource is backed up by directly employed skilled operatives including concrete

workers, welders, formwork joiners, piling operatives and plant/ machine operators. We operate a range of in-house plant and marine craft which includes cranes, excavators, work and safety boats, concrete pumps, site accommodation and general plant. Such resources ensure we are able to maintain a greater level of control during project delivery, and ultimately a higher standard of quality.

Several of our recently delivered contracts have received industry acclaim including our North Shields Fish Quay scheme which was awarded the CECA Project of the Decade award.

COASTAL STRUCTURES

Given the vital industry and growing communities located across the UK's coastline, protection from harsh weather and resultant sea state is of increasing importance in order to minimise erosion and safeguard key assets. Southbay are experienced in the construction and repair of coastal structures including breakwaters, seawalls and pier structures.

MAJOR QUAYSIDE CONSTRUCTION

Working within both live port and river environments we have successfully delivered major quayside projects ranging in value up to £19m. Such projects have incorporated tubular piling, sheet piling, combi walls, earthworks, dredging, concrete works, drainage, services and fendering systems. Many of these projects have been awarded on a design and build basis.

QUAYSIDE AND JETTY REPAIRS

With marine structures subject to constant attack from the elements and damage from vessel movements we have been responsible for undertaking routine maintenance and repairs to increase service life. This includes quay furniture repairs, concrete repairs, timber replacement, steel repairs and cathodic protection. All works are coordinated in line with live shipping movements.



We are a leading provider of marine civil engineering solutions.

Southbay show a high degree of technical ability and strive for innovation, delivering increased value to clients.

STEVE BEST, TECHNICAL DIRECTOR, FAIRHURST

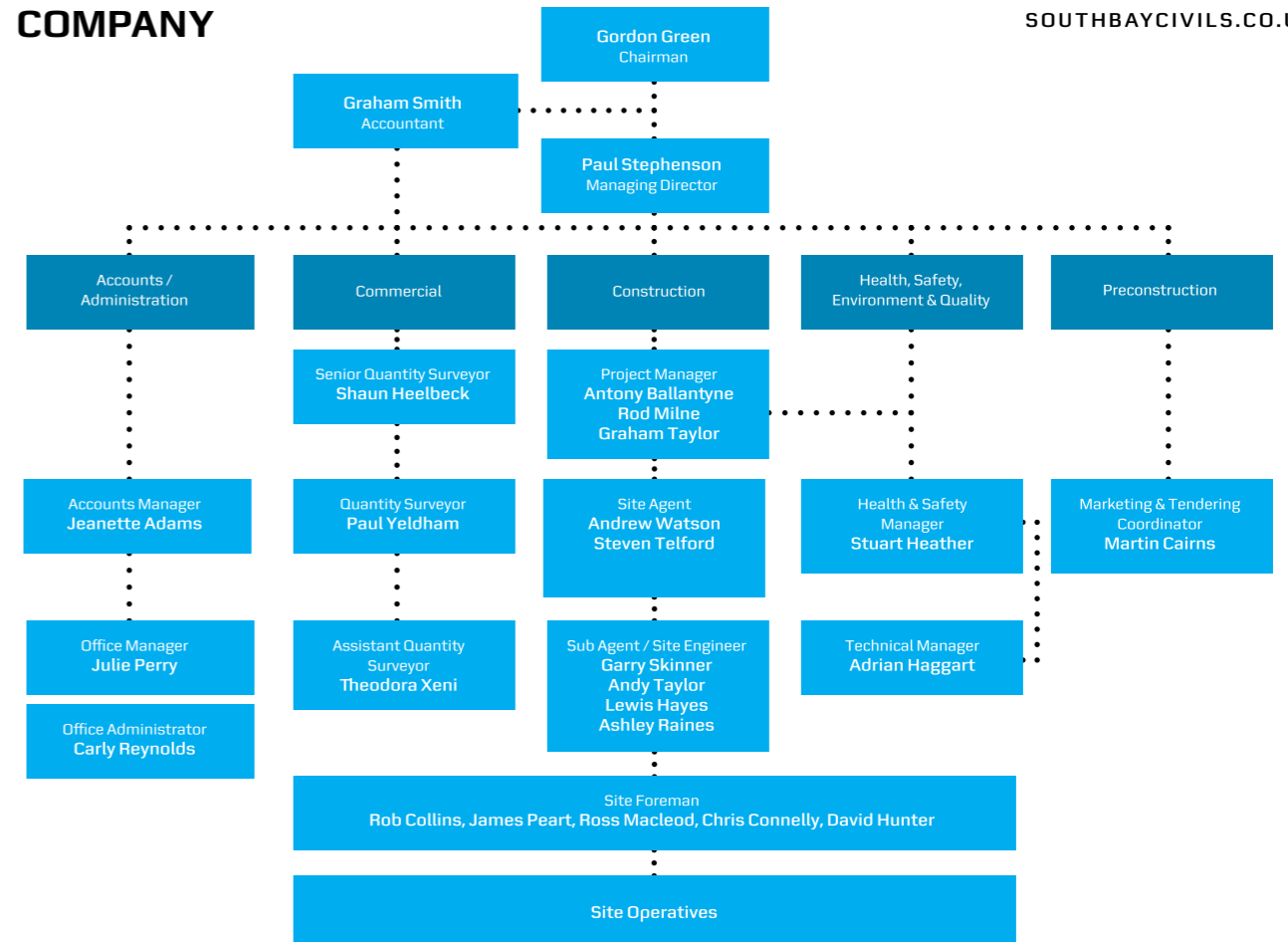
Where we work

THE GEOGRAPHICAL COVERAGE OF THE PROJECTS WE UNDERTAKE IS SPREAD FAR AND WIDE FROM THE NORTH EAST OF SCOTLAND TO AS FAR SOUTH AS THE THAMES ESTUARY.

Given the nature of the work we undertake we realise the need to maintain flexibility in terms of project delivery to which end we have the ability to ensure rapid mobilisation in line with bespoke client requirements.



COMPANY



We include within this brochure sample projects taken from the regions in which we operate including:

📍 North & East Coast of England

- Roker Pier Major Maintenance 10
- Sunderland Coastal Framework 10
- Riverside Quay Extension 16
- North Shields Fish Quay 18
- West Quay Improvements 20
- Broomhill Quay 22
- Swan Hunter Regeneration 24
- Wimbourne Quay Refurbishment 26
- Jetty 1 Upgrade 28
- Jetty 3 Upgrade 32
- Simon Storage Bollard Replacement 34
- Tyne Car Terminal Storm Bollard 34

📍 North West England

- 34 Robin Rigg Tideslides

📍 Scotland

- 10 Lossiemouth Seawall Repairs
- 12 Methil Seawall
- 14 Peterhead North Breakwater
- 30 Loch Striven Fender Repair
- 36 Princess Alexandra Wharf
- 36 Prince Charles Wharf

📍 Southern England

- Upper Lead-in Jetty Fender No9 Replacement 38
- London Gateway Fender Panel Replacement 38
- Greenwich River Wall Protection 38

Health & Safety

WE ARE COMMITTED TO ACHIEVING AN EXCELLENT STANDARD OF HEALTH AND SAFETY ACROSS ALL AREAS OF OUR BUSINESS, ELIMINATING RISK THROUGH ESTABLISHED PROCEDURES.

Health and safety is at the forefront of all that we do with nothing deemed more important than the well-being of our staff and those affected by our works. To this end we have developed an accredited Integrated Management System combining ISO 9001 (Quality), ISO 14001 (Environment) and OHSAS 18001 (Health and Safety). We are also registered and accredited with CHAS and Constructionline, for which annual reviews and assessments are undertaken. Our efforts in health and safety have received further recognition through the recent award of RoSPA Silver and Gold status.

Working predominantly within a marine environment we are experienced in the planning and management of construction activities subject to significant risk including aggressive weather conditions, tidal working, and live operational environments. We are skilled in conducting our activities in accordance with strict client protocols including bespoke permit to work systems within heavily regulated sites, most notably the petrochemical industry.

As further testament to our commitment to health & safety we hold an annual Safety Day. Organised by our safety department all staff and labour are invited to the event at which relevant health and safety issues are discussed, and speeches given by both internal and external speakers.



Managing Director Paul Stephenson receiving our RoSPA gold award.

Southbay are a competent contractor who are experienced in the delivery of marine works in both an efficient and safe manner.

STEPHEN PUGMIRE, ASSOCIATE DIRECTOR, ROYAL HASKONING

DON'T WALK BY

We maintain a proactive approach to health and safety and in accordance operate an initiative entitled 'Don't Walk By'. Employees are encouraged to point out unsafe situations and bring them to the attention of site management by filling in an observation card. Submitted cards are received in confidence and reviewed by our management team, with actions implemented to ensure potential accidents do not become reality.

INTERNAL RESOURCES

We employ an experienced Health and Safety Manager who provides support to all of our live sites, ensuring compliance to company standards. This includes undertaking regular planned site audits and delivering site specific briefing sessions. We also employ the services of Northern Counties Safety Group who provide specialist advice across all areas of health and safety, including industry best practice and changing legislation.

TRAINING

To establish staff competency we have developed a training programme for all members of staff across our business. This training programme is developed from a staff training matrix which identifies both mandatory and recommended training for all staff disciplines. A cornerstone of this matrix is the CSCS/ CPCS competency card scheme, and the 5 Days Site Management Safety Training Scheme.

Coastal Structures

SOUTHBAY BRING UNRIVALLED EXPERIENCE IN THE DELIVERY OF WORKS TO COASTAL STRUCTURES AFFECTED BY EXTREME WEATHER CONDITIONS AND COASTAL EROSION.

ROKER PIER MAJOR MAINTENANCE

CLIENT
Sunderland City Council
PROGRAMME
June to November '14
VALUE
£725,000

This granite faced, pre-cast concrete structure forms one of two breakwaters to Sunderland Harbour and at its seaward end includes a regionally iconic lighthouse. The pier a grade II listed structure stretches 800m and includes a rail track used to service a former gun battery during the second world war.

Our project work scope was broadly divided into three areas. Firstly, masonry void repairs were undertaken in the form of filling voids in the concrete foundation, and areas of undermining beneath the pier walls. Secondly, repairs were completed to masonry pier walls, namely pointing of vertical and horizontal cladding, panel and coping joints. Finally, the concrete deck slab and associated rail track was broken out, with the track refurbished and reinstalled as part of a new in-situ pattern imprinted deck slab.

SUNDERLAND COASTAL FRAMEWORK

CLIENT
Sunderland City Council
PROGRAMME
2008-2011
VALUE
£600,000

Originally awarded for a two year period this framework agreement involved delivering various coastal maintenance works including sea wall repairs, outfall works, pier repair and groyne maintenance. Due to the success of the framework our client extended its duration by a further 12 months.

The largest work package involved undertaking 350m of seawall repairs to Marine Walk, located on a busy stretch of public beach. This involved providing a new 300mm thick and 3m high concrete facing applied in 10m sections using bespoke steel form-work. To access the seawall 2m of beach material was removed daily in accordance with tidal movements. Further work packages awarded under the framework included the construction of a new access ramp, emergency repairs to an outfall pipe, groyne maintenance, and the re-pointing of copings at Roker Pier.

LOSSIEMOUTH SEAWALL REPAIRS

CLIENT
Moray Council
PROGRAMME
January to May '14
VALUE
£340,000

This masonry revetment and crest wall is situated to the east side of the town of Lossiemouth on the Moray Coast, Scotland. The revetment, which is adjacent to Lossiemouth Harbour is approximately 350m in length and around 3.5m high with a crest wall rising approximately a further 3m above. In December 2012, a section of the crest wall was badly damaged during a storm, resulting in its collapse.

The scheme involved the construction of a new section of masonry clad reinforced concrete up-stand wall complete with tie in works to the existing structure at each side of the breach. This was followed by raking out and grouting of joints between individual stone blocks throughout the face of the crest wall around the collapsed section. A void at the base of the revetment was backfilled with mass concrete, and masonry fill reinstated.

They have done a great job. It will enhance the area ready for the tourist season.

MIKE MULHOLLAND, CHAIRMAN OF LOSSIEMOUTH COMMUNITY COUNCIL



CLIENT

Scottish Power

PROGRAMME

March '13 to May '14

VALUE

£3.4m

Methil Seawall

PROJECT CASE STUDY

Methil Seawall is located at East Fife, Scotland and was constructed to provide protection to vital infrastructure within a former power station, owned by our client Scottish Power. Following decommissioning of this facility in 2011 our client awarded Southbay a package of works associated with the repair of the structure in readiness to hand the site over to Forth Ports. Taking the form of a design and build contract we appointed Fairhurst who initially undertook a pre-condition survey of the seawall to determine the extent of the required repairs. Details of bespoke repairs and stand details for similar repair types were then successfully developed.

The project focussed on a 630m section of the seawall and associated revetment. Specifically, our work scope included the removal of marine growth, grout injection of the revetment to compact and fill voids, the

construction of a new 3m high toe wall to the 12m high seawall, provision of a new skim wall, the installation of 9,000 tonnes of rock armour revetment, and specialist concrete repairs. Concrete repairs consisted of the provision of 450m² of split and missing expansion joints, and 350m² of specialist repairs to spalling concrete.

The exposed location of the works provided our site team with a number of challenges not least working within an aggressive tidal environment. The location of identified repairs required the works to be programmed in line with spring tidal cycles. When undertaking works to certain areas of the structure careful consideration was given to access requirements. Measures such as constructing temporary access ramps and haul roads were adopted to access the foreshore.

A PROJECT INVOLVING SIGNIFICANT UPGRADE WORKS TO A STRETCH OF DILAPIDATED SEAWALL LOCATED ADJACENT TO THE FIRTH OF FORTH.

ENVIRONMENT

The project was delivered within a sensitive environment with the works undertaken adjacent to the Firth of Forth which acts as a habitat to an internationally important population of wetland bird species, as well as Otters, Cetaceans and Seals. The area is a designated Special Protection Area, RAMSAR Site and Site of Special Scientific Interest. This placed a number of strict environmental considerations on the project team requiring detailed liaison with various agencies.

HEALTH & SAFETY

This exposed coastal location presented a number of significant health and safety risks not least encountering Arctic winds of between 80 and 120mph. Further risks included working within a tidal range subject to high swells making access to the revetment particularly challenging. This required a phased approach and the use of innovative temporary works arrangements. Working on the beach with heavy plant also required close monitoring of the public to ensure nobody entered the works during construction.

COLLABORATION

During the works, it became evident that areas of the structure were in a significantly poorer condition than originally advised. As a result of this together with Fairhurst we developed design efficiencies which allowed us to maximise the work scope in line with the available budget. Given the challenging location of the works constant re-evaluation of our methodology was required, utilising the skills of the whole project team to mitigate risk created by working in such an environment.

PROJECT CASE STUDY

Peterhead North Breakwater

CLIENT
Peterhead Port
Authority

PROGRAMME
August '16 to
January '17

VALUE
£530,000

A PROJECT TO RECONSTRUCT THE NORTHERN BREAKWATER OF ONE OF THE UK'S LARGEST FISHING PORTS, WHICH INVOLVED WORKING WITHIN AN EXPOSED LOCATION ON SCOTLAND'S COASTLINE.

The port of Peterhead is situated in the North East of Scotland and is one of the most heavily used fishing ports in the UK. In January 2016, the port was subjected to a severe coastal storm during which a 28m section of wave wall was separated from the Northern Breakwater, breaking and dislodging mass masonry blocks from the structure in the process.

Our work scope included the repair of the damaged section of breakwater through demolishing and removing the remaining damaged block-work and concrete, followed by its reconstruction using 26no. 30 tonne pre-cast concrete blocks. Further works included the construction of a new 87m section of 1.5m high

reinforced concrete wave wall.

The pre-cast concrete blocks used to reconstruct the breakwater were constructed on-site using our directly employed workforce. In addition to reducing costs this brought the added benefit of allowing us to maintain a greater level of quality control. All pre-casting work was undertaken prior to the removal of damaged sections of the breakwater to limit its exposure to the aggressive sea conditions, preventing further damage.

PROGRAMME

Due to the location of the works, adverse weather conditions and tidal swells generated by the sea proved to be a major issue, disrupting access and limiting progress. This had a sizeable impact in relation to activities carried out to areas at low water level. A proactive approach was taken to daily planning in order to maximise resource output during favourable weather conditions which included utilising weekend working.

STAKEHOLDER LIAISON

In working within one of the UK's busiest fishing ports the project involved a significant stakeholder interface. This included ASCO, a global oil and gas supplier who conduct their North Sea operations out of the port. In addition, the Breakwater doubles up as a berthing facility on its inside face, requiring close liaison with port management to incorporate multiple vessel movements during the works.

HEALTH & SAFETY

In working within this busy operational environment, we ensured the activities of all third parties were incorporated into our safe systems of work. A bespoke traffic management plan was developed to ensure plant and vehicle movements were safely coordinated in line with stakeholder requirements. Through such detailed planning an accident frequency rate of zero was achieved upon completion.



This is one of the biggest investments we have made at the port. It will allow us to significantly increase the ports capacity to handle increased volumes of cargo.

ANDREW MOFFAT, CHIEF EXECUTIVE, PORT OF TYNE

CLIENT

Port of Tyne Authority

PROGRAMME

December '14 to February '16

VALUE

£19.2m

Riverside Quay Extension

PROJECT CASE STUDY

Delivered on behalf of the Port of Tyne Authority this major scheme involved over 300 metres of quay work including a 125m quay extension, the upgrade of 118m of existing quay and 90m of quay wall renewal. The project was required to support the increase in growth of cargo volumes being handled by the port, namely renewable fuel sources.

Working with our appointed designer Royal Haskoning we developed the scheme design in accordance with bespoke client requirements and to a demanding programme. Initial site works included importing over 125,000 tonnes of engineering fill to construct an earth bund which acted as a platform upon which a

300t crawler crane could be positioned to install piles associated with the extension.

In delivering the scheme a total of 240no. tubular piles and over 100 pairs of AZ sheet piles were installed. Due to high rock levels a large number of piles were driven to an average of 8 to 10m below the riverbed using the 'Drill Drive Drill' method. The formwork for the new concrete deck consists of 2000m³ of precast structural concrete, constructed onsite. Further work elements included dredging 110,000m³ from the river bed, 12,000 tonnes of rock armour placement, the construction of a new mooring dolphin, fendering, bollards, a crane rail system, quay ladders, ducting and drainage.

A £19M DESIGN AND BUILD SCHEME TO EXTEND AN EXISTING DEEP SEA QUAY FACILITY ON THE RIVER TYNE INCREASING BERTHING CAPACITY BY ALMOST 20%.

DESIGN INNOVATION

The design revolved around a demanding client specification, namely the tie in works to the existing quay structure, position of crane rails and the required berthing line, all of which presented a complex brief. Close co-ordination and timely delivery of key design elements was paramount to ensuring minimal disruption to programme activities and allowing the site team to achieve all sectional completion dates.

PROGRAMME

Our client set a demanding programme of 66 weeks. During the first 6 months of the scheme a total of 44 days were lost to poor weather conditions, which in addition to a number of stipulated client possessions called for a proactive approach to all aspects of planning. To mitigate against such down time, we employed 24 hour and weekend working.

HEALTH & SAFETY

An excellent standard of health and safety was maintained across a congested site on which multiple high risk activities were undertaken at any one time. The contract marked the beginning of our behavioural safety initiative 'Don't Walk By', which in part played a key role in ensuring that no reportable accidents were recorded across the contract duration which included working over 310,000 man hours incident free.

PROJECT CASE STUDY

North Shields Fish Quay

A MULTIPLE AWARD WINNING PROJECT INVOLVING THE COMPLETE REGENERATION OF AN EXISTING QUAY SITUATED IN THE HEART OF THE LOCAL FISHING AND BUSINESS COMMUNITY.

CLIENT
North Shields
Fish Quay
Company Ltd

PROGRAMME
October '09 to
November '10

VALUE
£5.75m

Southbay accommodated our requirements through embracing partnering, putting us the client first. They are by far the most professional and competent contractor we have employed.

JEREMY PRITCHARD, MANAGING DIRECTOR
NORTH SHIELDS FISH QUAY COMPANY LIMITED

This design and build contract involved providing a new 300m stretch of quay and associated frontage on the River Tyne. The structure forms an integral part of the North Shields Fish Quay which is one of the oldest fishing ports in the north of England. Upon completion, the project received the CECA project of the decade and ICE project of the year awards.

Originally constructed in 1905 the quay was suffering from significant deterioration resulting in a danger to berthing vessels and the public. Together with our appointed design partner Fairhurst we successfully developed an innovative design solution which delivered significant cost savings to our client.

Working from a crawler crane positioned on top of the existing quay a total of 300no. tubular piles were driven into the river bed. A new insitu reinforced concrete deck 300m by 15m was placed on top of the existing quay deck. Sections of the existing quay were then demolished allowing for the placement of rock armour to the adjacent revetment. We then designed and installed a new Cathodic Protection system. Further works included the provision of services, bollards, fendering, ladders, and associated M+E installations.

DESIGN INNOVATION

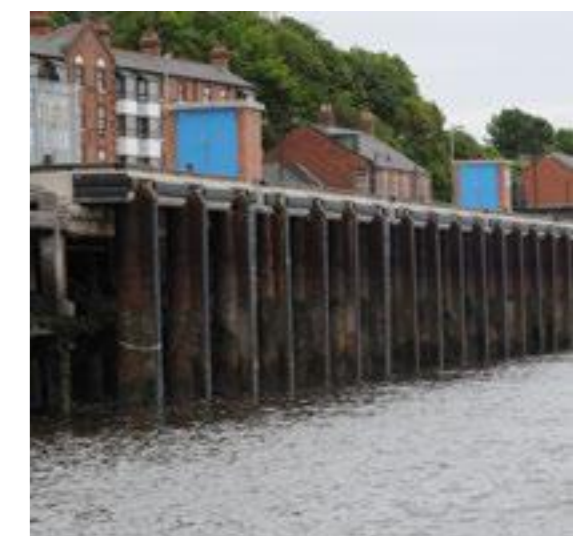
Together with our design partner Fairhurst we delivered several innovations which reduced costs. This included removing the need to demolish the existing quay before construction of the new structure, delivering savings in terms of falsework and formwork. In addition, we proposed to change the closed quay to an open structure eliminating the need to remove contaminated material which in turn reduced associated risks and hazards.

ENVIRONMENT

The site is located in close proximity to the Northumberland Shore SSSI which includes the Black Midden, an area of ornithological importance. All method statements and programme timings were submitted to and approved by Natural England prior to progressing works, minimising the potential for disruption. In eliminating the need to remove contaminated material through our alternative design the potential for pollution was greatly reduced.

STAKEHOLDER LIAISON

Located within a busy quayside environment, significant liaison was required with the harbour master, local businesses and residents. When breaking out concrete and installing tubular piles modern plant was used to minimise noise and vibration. A public notice board was erected on site hoardings with contact details and up to date progress information provided. Excellent feedback was received from our client in relation to the conduct of our activities.



CLIENT
A&P Tyne Ltd

PROGRAMME
January '10 to
September '10

VALUE
£3m

These are exciting times for the company and we now have a first class facility that will allow us to compete for work in the existing and new energy markets and grow the business for the future.

STEWART BOAK, MANAGING DIRECTOR, A&P TYNE

West Quay Improvements

PROJECT CASE STUDY

A project involving the construction of a new 100m long quay on the River Tyne on behalf of A&P, one of the UK's leading engineering and fabrication specialists in the ship building and oil & gas industries. This new heavy duty quay constructed in an operational environment incorporates a piled concrete deck with an area of 2200m², of which 1500m² is suspended. The new fully serviced quay was constructed to replace an existing timber structure which was suffering from significant deterioration.

Working from our client's design, the quay was constructed from a detailed brief including a uniformed load of 10t/m² and the need to incorporate heavy mobile cranes. The modern berth will enable the load out of ship units either with self propelled trailers or

with heavy lift cranes. This direct access to the River Tyne will allow for specialist vessels including aircraft carriers to be assembled and transported directly from the new quay on to barges and other sea going vessels.

In constructing the new quay, a total of 106no. tubular steel piles 916mm in diameter and 35m in length were driven into underlying rock along the waterfront. The new quay deck has been tied into a new concrete bearing slab positioned at the rear of the quay which covers an area of 2760m². The new quay includes fenders, bollards, ladders and services. The quay is tailor made for deep berthing so vessels can moor alongside and hook up to utility services directly from the structure.

A £3M CONTRACT TO CONSTRUCT A NEW QUAY FACILITY AS PART OF A MAJOR INVESTMENT PROGRAMME AT THE A&P TYNE SHIPBUILDING FACILITY.

PROGRAMME

A challenging programme was set by our client in accordance with future orders placed at the facility. Extensive pre-planning and buildability reviews were undertaken to ensure key sectional completion dates were achieved. Through working collaboratively with the A&P management team we ensured minimal disruption was caused to daily operations, with detailed interface plans drawn up and discussed at weekly meetings, ensuring complete coordination.

ENVIRONMENT

Strict environmental conditions were imposed by the Environment Agency with detailed consideration required when undertaking piling works. Together with our client we successfully secured the necessary consents and licenses. Method statements and programme timings were submitted to the Environment Agency for prior approval. Our methodology was developed to reduce environmental risk when working in and above the river.

HEALTH & SAFETY

An excellent standard of health and safety was maintained within this live production facility with detailed interface management plans developed to ensure clear segregation. Method statements were developed to take cognisance of daily production activities. A representative from A&P was invited to attend weekly site safety meetings to ensure accurate information was fed back to the site team relating to planned operations. An Accident Frequency Rate of zero was achieved upon completion.

PROJECT CASE STUDY

Broomhill Quay

CLIENT
Warkworth
Harbour
Commission

PROGRAMME
January '13 to
June '13

VALUE
£700,000

THE REPAIR AND RESTORATION OF AN EXISTING QUAY WHICH IS HEAVILY RELIED UPON BY THE LOCAL FISHING AND LEISURE COMMUNITY.

Broomhill Quay forms part of a small seaport within the town of Amble, which is situated on the Northumberland coast line. The harbour is located at the mouth of the River Coquet and is heavily used by the local fishing community and those accessing Amble Marina. Consisting of two main quays, Broomhill is the most heavily used facility to moor vessels.

Following significant deterioration of the quay caused in part by major flooding, the structure was closed to the public. Our team was tasked with constructing a new quay frontage in the form of a retaining wall. This consisted of installing H piles varying in length in front of the existing quay face. These piles act as king posts allowing low level sheet piles to act as a combi wall, protecting the toe from future under scour.

To retain the aesthetics of the adjacent quay bespoke pre-cast units were installed between the king posts to form a smooth concrete face. Further works included a reinforced concrete quay slab, bollards, mooring rings and provision of utilities. The works incorporated a new berthing arrangement.

KEY CHALLENGES

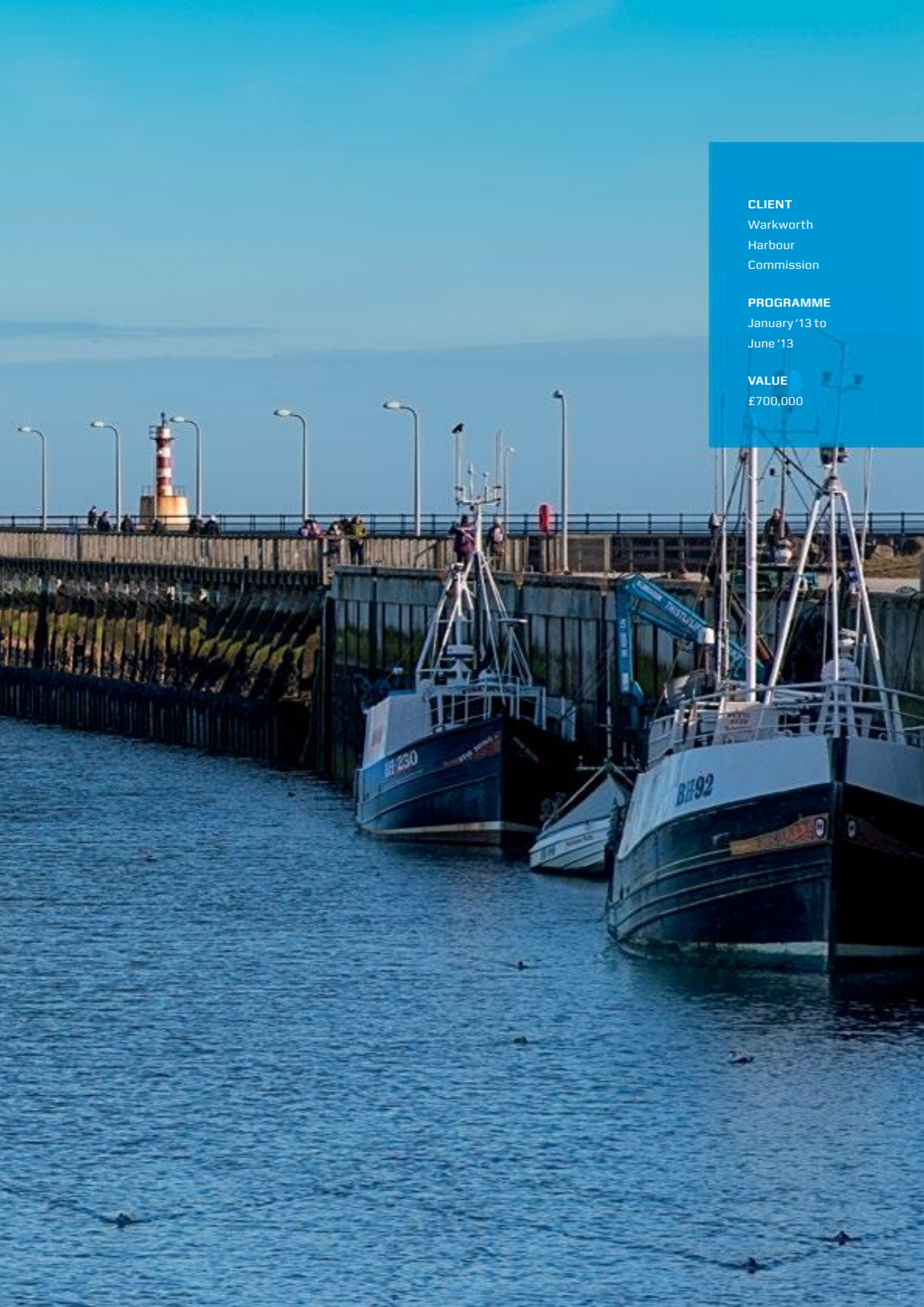
Due to the instability of the existing quay gaining the required access was particularly challenging, resulting in all craneage being set back from the quay edge to prevent collapse. Further challenges included the design level of the required sheet piles, which was below water level on even the lowest spring tides. To overcome this, we installed the piles using a combination of underwater vibro and impact piling.

ENVIRONMENT

Working closely with our client we secured the necessary MMO licence and developed a bespoke Environmental Management Plan to control associated risks. In preparing method statements significant attention was paid to the passage of migratory fish and the impact of our works on several important bird species including various tern birds. The project was delivered with no reported incidents.

STAKEHOLDER LIAISON

In addition to being in regular use by the local fishing community the area is a popular tourist attraction, with the works coinciding with the early summer months. Advanced notification was given to local businesses and residents with frequent updates provided by our Project Manager. In testament to the effort of the site team the contract was delivered 6 weeks ahead of programme despite challenging weather conditions.



The refurbished facility adds further volume to what we can offer firms looking to locate in North Tyneside and makes the site very attractive to investors.

NORMA REDFEARN, MAYOR FOR NORTH TYNESIDE

CLIENT

North Tyneside Council

PROGRAMME

December '14 to September '15

VALUE

£3m

Swan Hunter Regeneration

PROJECT CASE STUDY

Swan Hunter's shipyard is situated on the north bank of the River Tyne and has a rich history in ship building, heavy industry and structural engineering. Following several years of inactivity, the site was purchased by North Tyneside Council with the aim of generating employment from the offshore and renewable energy industries. The quay wall fronting the River Tyne was found to be showing significant age related decay across a length of 300m, resulting in the need for detailed repair.

Awarded as a design and build contract, our work scope included removal of debris from under the quay, hydro-demolition of degraded concrete, concrete repairs to structural members, replacement of existing

reinforcement, repairs to sheet pile walling, replacement of fendering, and the installation of a cathodic protection system. We appointed a specialist supplier to design and supply the Hybrid Induced Current Cathodic Protection System which was then installed by our site team.

The main challenge of the project was that of accessing works beneath the suspended quay which involved the design and installation of a proprietary staircase by our temporary works department. To ensure maximum on site productivity the works were carried out using tidal rotation shifts. An excellent relationship was maintained with our client leading to the award of £750,000 worth of additional works.

A CHALLENGING £3M CONTRACT TO RESTORE 300M OF QUAY FRONTAGE AT ONE OF THE UK'S MOST HISTORIC SHIPYARDS.

STAKEHOLDER LIAISON

At the time of construction several contractors were employed by the council across the shipyard. This required developing safe systems of work which incorporated the activities of others. Consideration was given to fellow contractors when developing traffic management plans, managing deliveries, and defining safe working boundaries. Through maintaining an integrated approach to safety, the scheme was delivered with no reported incidents.

ENVIRONMENT

We maintained a close working relationship with the Environment Agency, consulting with them in relation to programme timings and methodology in order to protect the estuary which is home to a large population of Salmonoids. When undertaking concrete repairs a fully encapsulating screen was erected around the work platform preventing contaminants from entering the water. This screen was subject to daily inspections.

COLLABORATIVE WORKING

An excellent relationship was maintained with our client with structured value engineering workshops undertaken to maximise the scope of works possible through additional funding. Through a proactive approach to programming the initial duration was increased by four weeks in order to incorporate the additional works. All key sectional completion dates were achieved with the quay handed back in advance of planned dredging.

PROJECT CASE STUDY

Wimbourne Quay Refurbishment

THE REFURBISHMENT OF AN EXISTING QUAY AS PART OF A LARGER CONTRACT TO CONSTRUCT ONE OF EUROPE'S LARGEST WIND TURBINE TESTING FACILITIES.

CLIENT
Port of Blyth

PROGRAMME
September '12 to
March '13

VALUE
£880,000

The new test facility will allow both larger and a wider scope of turbines to be tested than currently available anywhere else in the world.

DAVID CLARKE, CHIEF EXECUTIVE, THE ENERGY TECHNOLOGIES INSTITUTE

Since 2010 the Port of Blyth has played an increasingly important role in the expansion of the UK's renewable energy market, with the port being used to handle large quantities of wind farm components. As part of this expansion a National Renewable Energy Centre was constructed at the port requiring the complete refurbishment of Wimbourne Quay, a load out facility used in the transportation of components.

Our work scope included the supply and installation of 34no. permanent steel piles through drilled openings in the existing quay. The existing structure was then dismantled and removed. This allowed for the placement of 18no. reinforced concrete pre-cast support beams and 52no. pre-cast slabs, providing the formwork for a new reinforced concrete deck. The new deck is 1m thick and has been designed to carry loads of up to 800 tonnes.

Further works included the strengthening of existing quay sections through the installation of 2no. steel tubular piles, and the provision of associated steelwork support.

STAKEHOLDER MANAGEMENT

In undertaking the works within a live port environment close liaison was required with the Port Authority, tenants and the main contractor of the new test facility, Shepherd Construction. Third party interface was incorporated into our Project Management Plan (PMP), with key representatives from each party invited to attend site meetings. Our programme incorporated various stakeholder requirements.

KEY CHALLENGES

Weight restrictions on the existing quay required careful consideration when sequencing activities so as to prevent collapse. In addition, challenging bed rock conditions called for the use of rock spigots where tubular piles could not be driven due to refusal. A temporary casting yard was constructed on-site which reduced vehicle movements within a confined environment whilst increasing quality control.

HEALTH & SAFETY

In delivering works on the same site as Shepherd Construction an integrated approach to health and safety was imperative. All risk assessments and method statements were submitted to and approved by Shepherd to ensure full account of ongoing activities was considered. Relevant sections of our PMP were submitted for incorporation into their corresponding document, ensuring complete coordination.



**CLIENT**

Inter Terminals

PROGRAMMEMarch '14 to
May '14**VALUE**

£1.6m

Jetty 1 Upgrade

PROJECT CASE STUDY

This design and build contract involved delivering significant upgrade works to an existing Jetty to increase its berthing capacity. We appointed Fairhurst to develop a detailed design and together delivered the scheme to a demanding programme which included an 18 day shutdown of the facility. The scheme received a commendation at the CECA Project of the Year awards 2015.

Our work scope included dismantling and removing existing redundant fenders at three berthing dolphins. These reinforced concrete (RC) dolphin structures were then subject to a series of concrete repairs. Pairs of steel tubular support piles were then driven into the river bed at each location before minor steelwork alterations

were made in order to allow for the provision of a new fendering system to each structure. A new 10m by 10m RC dolphin was then constructed on tubular piles to extend the jetty. All four structures have been supplied with a new cathodic protection system. In delivering the works a combination of land and specialist marine plant was utilised.

Early involvement of all parties was essential in delivering the works. Programme dates were agreed promptly and carried major importance due to the need for the jetty to be ready in advance of planned operations. Whilst our client had begun the process of obtaining the necessary consents and licences our team ensured these were secured ahead of programme.

A SCHEME UNDERTAKEN WITHIN A LIVE PETROCHEMICAL ENVIRONMENT TO UPGRADE THE BERTHING FACILITIES OF AN EXISTING HEAVILY USED JETTY.

HEALTH & SAFETY

In working within a live petrochemical site our project team were required to adhere to our client's strict permit to work system. An excellent standard of safety was maintained throughout the contract with an accident frequency rate of zero achieved upon completion. Across an 18 day period the site was fully operational on 24 hour basis with multiple high risk activities progressed, requiring detailed planning. Over 15000 man hours were worked incident free.

RISK MANAGEMENT

A proactive approach to risk ensured all sectional completion dates were achieved. This included undertaking a complete dive survey of the river bed with the aim of identifying all potential issues which may have impacted piling operations. Detailed dimensional surveys were also undertaken to ensure all piling, concrete and fendering materials accurately fitted together, allowing rapid installation in line with the restricted programme.

PROGRAMME

The project was successfully delivered to programme and budget. Through developing a collaborative working relationship all sectional completion dates were achieved and costs effectively controlled. Our client initially anticipated a jetty down time of 25 days, however we reduced this period down to 18 days. This in part was made possible by leasing a section of land adjacent to the site allowing pre-cast elements to be produced, reducing lead in times, whilst also increasing quality.

PROJECT CASE STUDY

Loch Striven Fender Repair

CLIENT

Oil & Pipelines
Agency

PROGRAMME

February to
March '16

VALUE

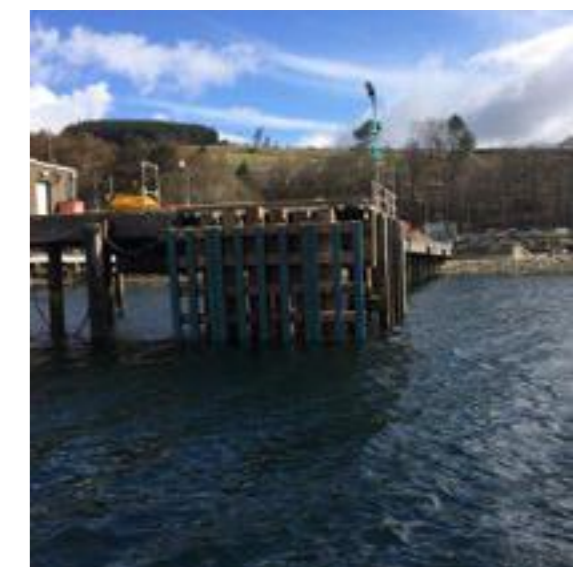
£300,000

THE REFURBISHMENT OF AN EXISTING FENDERING SYSTEM ON THE MAIN JETTY OF A FUEL DEPOT USED TO SERVICE ROYAL NAVY VESSELS.

The Oil and Pipelines Agency are a statutory public corporation sponsored by the Ministry of Defence. They are responsible for the operation, maintenance and management of six Naval fuel depots, one of which is located at Loch Striven. The fendering system to the main jetty was viewed as being of poor condition and below the required standards for modern vessels.

Specifically, our scope of works included the replacement of existing timber fendering and associated pile sections, and the demolition and re-provision of existing on-shore mooring points including mooring bollards. Underwater divers were used to assist in the removal and replacement of the fendering system.

Delivered to a demanding programme, a proactive approach was maintained by our site team with accelerated material orders placed with key suppliers. To minimise cost to our client the majority of the works were progressed using land based plant directly from the jetty, with our own marine craft used to survey and remove materials from the Loch.

**PROGRAMME**

Our client set the project team a demanding programme of 5 weeks due to the strategic importance of the jetty to the Royal Navy. The facility was to be returned fully operational by the 21st of March in readiness for a refuelling vessel. Instrumental to awarding the contract to Southbay was our ability to offer an alternative programme which reduced the shutdown duration.

HEALTH & SAFETY

The works were undertaken within an Upper Tier CoMAH site with our client employing a strict permit to work system. Risk Assessments and Method Statements were developed in consultation with our client and were submitted in advance of the works. Whilst the jetty was shut down for the duration of the scheme the site received ongoing fuel deliveries throughout, requiring close coordination.

COLLABORATIVE WORKING

Due to the demanding programme and the strict permit to work system operated, maintaining a collaborative relationship between the client and project team was imperative. Following award, early contractor involvement began a full 3 weeks before on-site operations. During this period, we were able to develop the most efficient programme and ensure the control of all risk.

CLIENT

Sabic UK
Petrochemicals

PROGRAMME

March '12 to
April '12

VALUE

£570,000

Jetty 3 Upgrade

PROJECT CASE STUDY

This £570,000 contract involved upgrading an existing jetty within a live petrochemical site. The jetty in question is used as part of the Ethylene production and export process from which it is transported to various destinations across Europe. The jetty end fenders were showing significant deterioration and had reached the end of their design life resulting in the need for replacement.

Specifically, our work scope included removing the existing fendering system using a floating barge before breaking all components down for recycling. New fender piles each 16m in length were driven over existing piles using an impact hammer, before placing and bolting prefabricated steel fendering to the jetty. To provide

increased stability to the structure concrete was placed between the existing and new piles. Greenheart timbers were fixed to the steel fender frame acting as a cushion to vessels.

In order to preserve the life span of the new fendering system a cathodic protection system has been provided which was installed using underwater divers. All works were completed across a four week period in which the jetty was shut down. In accordance with the restricted jetty access, all plant and materials were loaded onto a barge at the Port of Sunderland and shipped to the River Tees.

A PROJECT INVOLVING THE REPLACEMENT OF A FENDERING SYSTEM ON A HEAVILY USED JETTY LOCATED ON THE RIVER TEES. THIS INCLUDED A FOUR WEEK SHUT DOWN OF THE FACILITY WHICH IS USED TO TRANSPORT ETHYLENE.

HEALTH & SAFETY

A strict permit to work system was agreed with our client prior to the commencement of on-site works. In working within this live petrochemical site consideration of daily operations was built into all method statements which were issued to our client for approval. All deliveries and vehicle movements were closely monitored with prior notice of traffic routes issued to fellow contractors. Upon completion, an accident frequency rate of zero was achieved.

ENVIRONMENT

Prior to commencing on site, we worked closely with our client Sabic to secure the necessary MMO licence. In line with licensing conditions only one piling rig was permitted for use at any one time. Throughout the piling works an INCA trained 'Mammal Observer' was present to identify seals or similar species in close proximity to the site. An Environmental Management Plan was prepared which identified all necessary control measures.

PROGRAMME

A major factor in securing the contract was our ability to deliver the works within a 4 week window during which time the jetty was fully shut down. In anticipation for this period and in accordance with the restrictions imposed by the MMO licence a number of preparatory activities were undertaken including loading of the barge and placing advanced material orders. Weekly programmes were produced to maintain control in line with key milestones.



Mooring & Berthing

IN ADDITION TO THEIR INCLUSION WITHIN LARGER CONTRACTS SOUTHBAY HAVE AN ESTABLISHED REPUTATION FOR THE PROVISION OF BESPOKE MOORING AND BERTHING FACILITIES ON AN INDIVIDUAL CONTRACT BASIS.

SIMON STORAGE BOLLARD REPLACEMENTS

CLIENT
Port of Tyne Authority
PROGRAMME
February '12 to March '12
VALUE
£77,000

The design and construction of 4no. bollard bases at the Simon Storage facility, located within the Port of Tyne. Each of these new bases measure 8m x 8m x 1.2m deep. Reinforcement, formwork and holding down bolts were installed, with each base poured to include a brush and border finish. New bollards with a 50t capacity were secured and torqued down onto the bases.

Working on the banks of the River Tyne meant all excavations were affected by the tide. Old timber piled walls and tie rods were exposed following excavation. These exposed structural elements were left undisturbed in order to maintain the structural integrity of the quay. An existing land drain which runs alongside two of the bases was excavated and successfully diverted.

TYNE CAR TERMINAL STORM BOLLARD

CLIENT
Port of Tyne Authority
PROGRAMME
April to June '13
VALUE
£230,000

The contract involved the replacement of an existing storm bollard at one of the most heavily used car terminals in the north of England. This challenging contract involved excavating between multiple underground services including high voltage cables. The new 200t bollard has been fixed to a piled base consisting of 12no. Raked Piles, driven to a depth of 30m.

When installing the new bollard two existing walkways were realigned to access the newly constructed base. This required the construction of a new central pier which was positioned on 2no. 405mm diameter tubular piles. The piles were installed using a land based 250t crawler crane. The works were successfully progressed within a live terminal environment.

ROBIN RIGG TIDESLIDES

CLIENT
Eon Climate & Renewables
PROGRAMME
May to September '13
VALUE
£250,000

The project comprised of installing new mooring facilities at multiple locations on an existing jetty within the Port of Workington. The new facilities will allow work boats to moor outside of the port on a 24 hour basis without requiring attendance from pilot boats.

A total of four new tideslides were provided which required 8no. caisson clamps with a diameter of 4m to be drilled into the existing caisson. Between the clamps 12no. new horizontal beams were installed at low level, upon which the tide slides were attached. A total of 10no. new timber fenders with associated PE facing pads were then provided. Final works included modifying and re-attaching 2no. existing ladders. The works were completed within a challenging environment which included a narrow jetty with strict weight restrictions imposed.

Southbay have successfully completed contracts providing excellent value for money through both knowledge and professional application.

KEVIN EMMETT, PORT DEVELOPMENT ENGINEER,
PORT OF TYNE AUTHORITY



Cathodic Protection

SOUTHBAY BRING SPECIALIST EXPERIENCE IN THE DESIGN, SUPPLY AND INSTALLATION OF CATHODIC PROTECTION SYSTEMS, ENHANCING THE OPERATIONAL LIFE OF MARINE STRUCTURES.

PRINCESS ALEXANDRA WHARF

CLIENT
Port of Dundee
PROGRAMME
October to December '14
VALUE
£360,000

Princess Alexandra Wharf is a heavily used quay facility located within the Port of Dundee. The contract awarded to Southbay involved undertaking significant concrete and pile repairs associated with age related decay and accelerated low water corrosion. This included the design, supply and installation of a new Cathodic Protection system which will protect the quay for a period of 25 years.

Cathodic protection works included the lowering, locating and installation of 324 no. galvanic anodes to tubular piles located beneath the quay, welded by underwater divers. Our dive team were supported by two work boats which were used to transport the materials and guide the anodes into position. Meticulous planning ensured no disruption was caused to live vessel movements.

JETTY 1 UPGRADE

CLIENT
Inter Terminals
PROGRAMME
March to May '14
VALUE
£1.6m

As part of our contract to upgrade berthing facilities at Jetty 1 of the Simon Storage fuel depot we were required to design, supply and install a cathodic protection system to tubular piles. This system was designed by our appointed consultant Fairhurst and will protect steel berthing elements from future corrosion within the tidal zone.

The installation of the Cathodic Protection system was undertaken using underwater divers, assisted by both a land based crane and barge, which was mounted with cranes to sling, lift and lower individual components into position before fixing to selected piles. Our underwater dive team were responsible for cleaning pile face sections before welding in place over 150 no. galvanic aluminium anodes.

PRINCE CHARLES WHARF

CLIENT
Port of Dundee
PROGRAMME
January to July '16
VALUE
£550,000

The Prince Charles Wharf quay facility is located within the Port of Dundee, providing berthing and land side areas to various industries. Southbay were awarded a contract to refurbish sections of the quay which in addition to concrete and pile repairs included the design, supply and installation of a new cathodic protection system.

Designed and supplied by our specialist supply chain partner the new cathodic protection system comprises of 328 no. sacrificial anodes which were fixed to steel frames before being secured to identified tubular piles using temporary lifting lugs and metal work boats. The anodes were secured in accordance with the tide in order to access the different pile levels. All works were successfully programmed around live shipping movements.



Thames Estuary

OUR EXPERIENCE INCLUDES SUCCESSFULLY DELIVERING CONTRACTS ACROSS THE THAMES ESTUARY INCLUDING THE PORT OF TILBURY LONDON WHICH IS THE CITY'S LARGEST MULTI MODAL PORT FACILITY.

UPPER LEAD-IN JETTY, FENDER NO 9 REPLACEMENT

CLIENT
Port of Tilbury London

PROGRAMME
June to August '14

VALUE
£146,000

Undertaken within London's largest multi modal port facility the project involved replacing an existing 'V' fender and associated piles. The fender which forms part of the main lead in jetty suffered significant damage following vessel collision. The project was delivered across a 4 week duration, and required coordinating works around daily shipping movements.

Specifically, our work scope included removing the existing V fender and steelwork before extracting 32m long fender piles and removing redundant material. Using conventional piling techniques, a piling gate assisted the installation of 2no. UC Section piles each 32m long. The new fendering system including facing timbers was then secured to the jetty, with associated fixing chains reattached. All works were completed using land based plant and equipment.

FENDER PANEL REPLACEMENT

CLIENT
DP London Gateway

PROGRAMME
Oct to Nov '16

VALUE
£35,000

London Gateway is a deep-water port located on the north bank of the River Thames at Stanfords-le-Hope, Essex. The port which includes three main berths has the capacity to handle some of the world's largest container ships, and consists of an onsite logistics park connected to the rest of the UK via a direct rail link.

Specifically, this maintenance contract involved replacing in situ a number of UHMW-PE wear pads on the existing fendering system, welding of new fixing studs where necessary, and repairing paint damage where the pads were missing or damaged. An initial survey was undertaken to determine the full extent of repairs. In line with the port's short vessel turnaround times, all works were programmed in accordance with multiple operational requirements.

STONE PROTECTION TO GREENWICH RIVER WALL

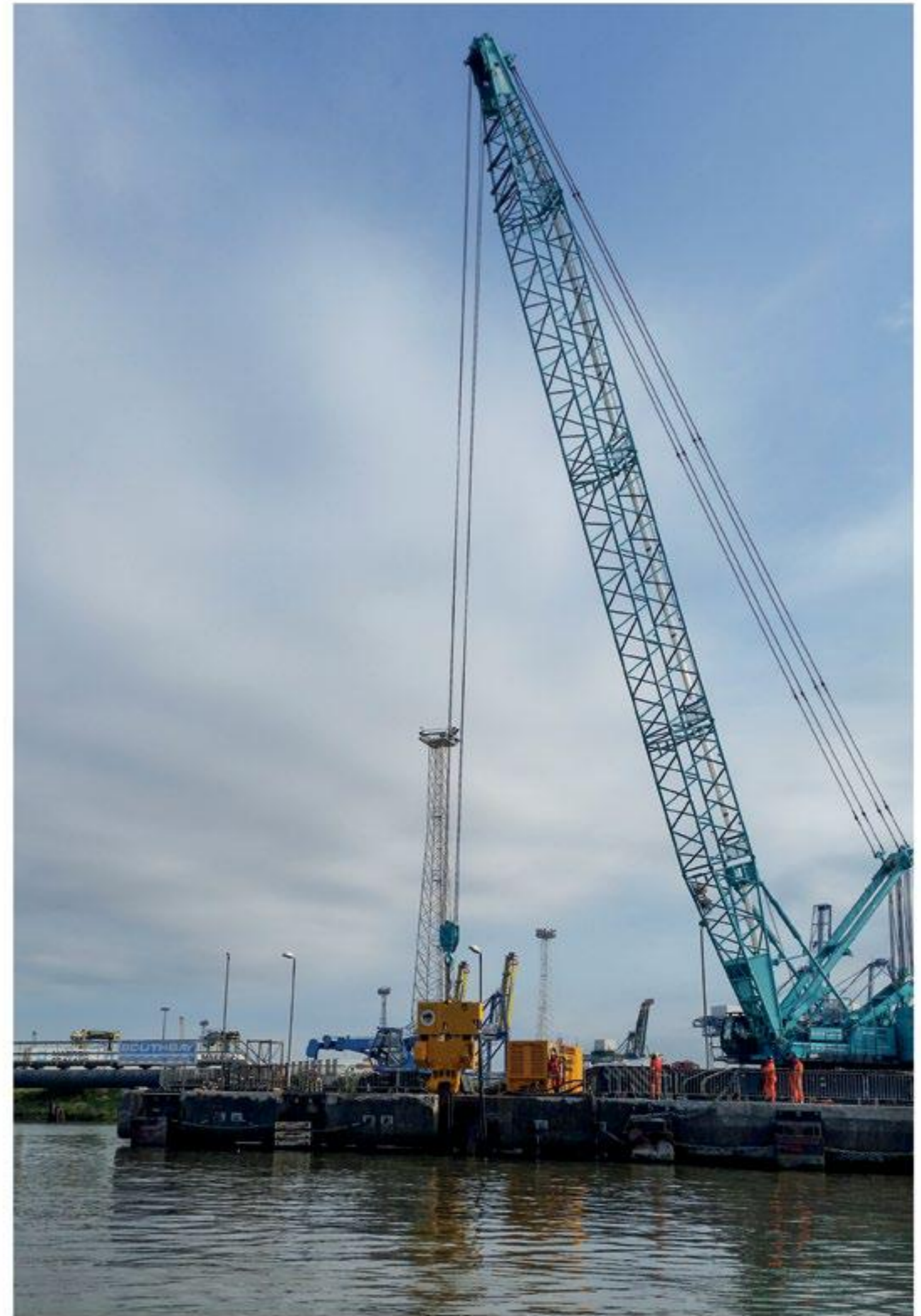
CLIENT
Old Royal Naval College

PROGRAMME
December '16

VALUE
£110,000

A contract which involved works to an area of the River Thames foreshore directly in front of the Old Royal Naval College Greenwich, a designated World Heritage Site. The area has suffered from significant erosion through vessel scour and tidal current. The erosion has reduced the level of the riverbank to a point at which any further movement would compromise the River Wall.

In order to mitigate against the continued erosion, we successfully installed Scour Protection Mattresses filled with locally sourced stone onto the foreshore. Placed onto a geotextile membrane the mattresses take the form of Kyowa Filter Units, an environmentally friendly marine product which allows fish and plants to live within inter-spaces. Prior to the main works timber pile caps located within the area dating back to the Tudors were protected.





HERE TO HELP

Paul Stephenson
Managing Director

Southbay Civil Engineering Ltd
The Bailey
Cumberland Road
North Shields
NE29 8RD

0191 234 2244
ps@southbaycivils.co.uk
southbaycivils.co.uk

