AECOM Limited
Midpoint, Alencon Link
Basingstoke
Hampshire RG21 7PP
United Kingdom

T: +44(0)1256 310200
aecom.com

Project name:
Thurrock Flexible Power Generation Development

Project ref:
60592577

To:
Andrew Troup
Statera

CC:
Tom Dearing, RPS

Author
Diego Quiroga
Checked
Peter Neville-Jones

Approved for client comment
Graeme Cook

Date:
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Briefing Note –Thurrock Causeway Outline Design for DCO Response to Technical Comment

1. Introduction

AECOM has prepared a technical note entitled Concept Design of Causeway for Delivery of abnormal, indivisible loads (AILs) for Statera Energy, dated 11 February 2020, to demonstrate the practicality of designing and building a causeway for the transport of AILs to the Thurrock Power development site in support of the Application by Thurrock Power Limited for an Order granting Development Consent for the Thurrock Flexible Generation Plant.

AECOM have now received a document from the Port of Tilbury London Limited (PoTLL dated 17 May 2021) in response to the Application by Thurrock Power Limited for an Order granting Development Consent to construct the Thurrock Flexible Energy Generating Plant on land next to PoTLL's recently developed Tilbury2 port terminal.

The PoTLL's response includes a Technical Design Note by Hydrock, "Geotechnical Engineering Assessment of the Proposed Statera Causeway, Tilbury" Rev 2, dated 17 May 2021. This AECOM technical note provides commentary on the Hydrock Technical Design Note.

2. Response to technical comments

AECOM's response to the 14 Main Findings in the Hydrock Executive Summary are :

Comment 1 - A site investigation comprising a desk study and ground investigation has not been carried out for the proposed causeway and berthing area. A desk study and detailed ground investigation will be required to provide appropriate geotechnical and geoenvironmental parameters for the design of the causeway and berthing area. The present conceptual design provided by AECOM can only be considered as conjectural and lacks specific data to justify feasibility and allow proper engineering scrutiny.

Response

AECOM has undertaken an outline stability analysis of the causeway, based on the information available and assumptions, based on previous knowledge of similar sites including our work on the London Gateway Port project and is considered sufficient for DCO purposes, noting that as Hydrock state for the developed design a desk study and detailed ground investigation is required to provide appropriate geotechnical and geoenvironmental parameters for the detailed design of the causeway and berthing area.

Comment 2 - There is no detailed bathymetrical survey data for the causeway and berthing area. Without such a survey it may not be feasible to site the causeway and berthing area in the proposed location

Response

Sufficient bathymetric data is available from the PLA Nautical Chart 337 for this stage of design evaluation. Further stages of design require updated bathymetrical information.

Comment 3 - The current design has not accounted for flood tides, cross currents and wave loads in relation to the long-term stability of the causeway and berthing area. Without this information it is not considered that a feasible conceptual design can be undertaken for the proposed causeway and berthing area.

Response

The plan footprint of the causeway and berth are expected to remain as shown with some further refinement to ensure stability in waves and currents, as for other foreshore landings.

Comment 4 - No unexploded ordnance (UXO) survey has been undertaken for the site area. The site lies within a UXO risk area.

Response

The Zetica UXO unexploded bomb risk map for the area shows that the site location has a moderate risk of potential unexploded bombs present. As for most Thames projects, an UXO survey will be undertaken prior to construction to ensure safe working conditions.

Comments 5 - No human health or controlled waters risk assessment has been considered for the soils/groundwater and surface water for the causeway and berthing site area. A desk study comprising a preliminary contaminated land and controlled waters risk assessment should have been undertaken prior to completing the conceptual design.

Response

AECOM note clearly mentions the need to study potential soil contamination and this has been undertaken as part of the Environmental Statement submitted with the application. No significant risk to human health or controlled waters has been predicted. Sediment sampling, analysis of contamination and assessment of risk to marine environment receptors was documented in ES Chapter 17 and its appendices; and the Environment Agency has confirmed that it is satisfied by the Water Framework Directive assessment (see REP3-013). Requirement 12 of the draft DCO sets out the further sediment sampling and analysis that must be carried out prior to construction to manage the risk of contamination.

Comments 6 - No temporary works design has been considered in the conceptual design report for the construction or decommissioning of the causeway and berthing area. It is anticipated that significant temporary works will be required for both the construction and decommissioning of the causeway and berthing area. The design of temporary works will be an important part of the design and construction for this project and consequential impacts.

Response

Construction aspects need to be further considered in the subsequent stages of design. As Hydrock notes, the approach to construction with a temporary working platform for construction plant being created within the area of Work 10 (causeway) is described in the application.

Comment 7 - It is clear from the conceptual design report that there is currently no understanding of the ground conditions, geotechnical properties and engineering behaviour of the intertidal and estuarine deposits. The current conceptual design can only be viewed as conjectural and lacks engineering rigour to justify the proposed design concepts.

Response

As Comment 1, AECOM has undertaken an outline stability analysis of the causeway, based on the information available and assumptions, based on previous knowledge of similar sites including our work on the London Gateway Port project and is considered sufficient for DCO purposes, noting that as Hydrock state for the developed design a desk study and detailed ground investigation will be required to provide appropriate geotechnical and geoenvironmental parameters for the design of the causeway and berthing area.

Comment 8 - It is clear from the conceptual design report that there is currently no understanding of whether ground improvement techniques will be required as part of the construction process. This reflects the lack of information on ground conditions for the site area. The construction process described in the conceptual design report is vague and no specific methodology or material specification and measures to control the long-term settlement of the causeway have been provided. It is important that the design considers the long-term performance of the causeway to ensure that cranes and vehicles intended to use the causeway can function properly and safely without the need for further remedial works.

Response

As Comment 1, noting that ground improvement may be required, but is not expected to change the footprint of the causeway. The transportation of AILs requires a level roadway, that is routinely graded during operation, such that the effects of settlement are controlled.

Comment 9 - The current assumption to construct 1:3 side slopes for the causeway is questioned by AECOM, the concept designer. There is currently no ground investigation data to justify whether these slope gradients can be constructed at all. As there is no geotechnical data available no stability analyses can be carried out to support the conceptual design of the causeway side slopes.

Response

As Comment 1, AECOM has undertaken an outline stability analysis of the causeway, based on the information available and assumptions, based on previous knowledge of similar sites including our work on the London Gateway Port project and is considered sufficient for DCO purposes, noting that as Hydrock state for the developed design a desk study and detailed ground investigation will be required to provide appropriate geotechnical and geoenvironmental parameters for the design of the causeway and berthing area.

Comment 10 - No geotechnical data or geotechnical analyses are provided in the conceptual design report to support the design of the gabion wall and crane pads to be located at the end of the causeway.

Response

As Comment 1, AECOM has undertaken an outline stability analysis of the causeway, based on the information available and assumptions, based on previous knowledge of similar sites including our work on the London Gateway Port project and is considered sufficient for DCO purposes, noting that as Hydrock state for the developed design a desk study and detailed ground investigation will be required to provide appropriate geotechnical and geoenvironmental parameters for the design of the causeway and berthing area.

Comment 11 - The design of the flood gate within the existing flood wall requires further investigation and analysis based on the provision of as-built drawings and will require agreement with the Environment Agency. Whilst the construction of this flood gate can be suitably designed to ensure the integrity of the flood defences are maintained, the introduction of a new gated access will introduce a flood risk in the event of accidental operational mis-management and/or malicious actions.

Response

AECOM agrees that the flood gate can be suitably designed to ensure that the integrity of the flood defences is maintained, as for the other similar gates along the Thames Frontage.

Comment 12 - The procedure for decommissioning the causeway and berthing area is vague within the conceptual design report and the report has not considered a number of factors which will have changed since the causeway and berthing area was first constructed. Further consideration must be given to the methodology used for decommissioning the causeway; this methodology should at least consider the factors listed in Section 5.12 of this report. In addition, appropriate working platforms and safe methods of decommissioning working will be required.

Response

With regard to decommissioning, Requirement 19 (Causeway Decommissioning Plan) specifies the provision of further detail of decommissioning works for approval at that time. The berth platform and causeway are accessible from land, which facilitates their straightforward removal, when required as explained in Section 3 below

Comment 13 - The conceptual design report does not consider the long-term specification/performance requirements of the causeway and berthing area in sufficient detail. The long-term performance of the causeway structure, mitigation measures required to maintain performance specifications and the requirements for regular monitoring of both the causeway and the berthing area need to be considered in further detail. This is a critical area of design that needs to be addressed in detail; if the long-term performance of the causeway and berthing area cannot be guaranteed, then other options for the transport of abnormal indivisible loads (AILs) will need to be considered.

Response

Final development of the design can meet the long-term performance and operational requirements of the causeway and berth.

Comment 14 - The design risk assessment included within the AECOM conceptual design report has not accounted for many of the hazards/risks in this high-level review and assessment. The Designer's Risk Assessment will therefore need to be significantly updated based on the geotechnical hazards/risks identified in this report before any decision should be made.

Response

The Hazard and Risk Matrix deals mainly with the construction and operational impacts. Further items are to be included for the final design, as noted.

3. Construction and Decommissioning

AECOM technical note has presented a possible approach for the construction of the structure in the intertidal zone. The approach draws from AECOM experience both in the development of platforms for the unloading of abnormal loads, as well as developments in the River Thames. The progressive construction from land is the most likely construction approach at this location. We believe that it will be possible to execute this whilst maintaining the level and integrity of the flood defence wall during the construction works, which of course would be monitored throughout the construction stage.

The detailing and definition of the specific design solutions will progress along with further studies, including geotechnical studies, loading assessment and marine environmental conditions studies. Specific design solutions will be developed during this review, for instance the nature of the soil improvement, scour protection or the retaining wall solutions adopted – using sheet piles instead of gabions for instance. This further definition does not change the conceptual approach proposed and will be appropriately considered in subsequent stages.

These structures are quite often temporary ones, and their design considers the decommissioning stage. It is expected that for the decommissioning of this structure the **berth platform** will be reduced using a large long reach backhoe, feeding trucks running along the causeway. Any residual material in the **berth area** is removed by grab dredger and placed in barges for use elsewhere or disposal. The **causeway** is removed by backhoe and trucks to land. The backhoe lifts the material from the toe, turns about face to fill the truck on the landside of the access that when full transports the fill to land, for subsequent use. The **flood wall** can be restored after removal of the flood gate using reinforced concrete to match the adjacent walls. The **berth pocket** will naturally in-fill with deposits of estuarine mud.

Segregation of rockfill from the gabion steel mesh and geotextiles, if needed, is carried out under good site control.

The rockfill and fill materials recovered are a resource that can be used for:

- port development
- future Thames tidal flood protection
- shore protection
- creation and protection of wetlands
- scour protection for structures in the estuary
- hardstanding and foundations on land

Attached to this note we include some of AECOM experience of similar projects. These include:

- A compilation of studies undertaken by AECOM in relation with abnormal loads and port of entries. These are projects in a variety of soil conditions and site constraints and relating to unloading of loads from 350 Te up to 1200 Te.
- A case study relating to the construction of a temporary slipway at Colintrave Ferry Terminal, where AECOM is performing the role of designer.
- The London Gateway Port project, which includes various constructions in the intertidal zone, including the reprofiling of the existing revetment to accommodate the new berth for receiving hydrocarbons, as well as the works related with the construction of 1200m of new quay wall. It is noted that access to the Shell jetty includes a flood gate. Different soil improvement approaches were applied in the construction of the works, and ample monitoring to ensure the integrity of the existing flood defence wall.
- Works related with the extension of Port of Tilbury Riverside Roll on/ Roll Off.
- Study assessing the compatibility of Counters Creek Storm Relief Sewer proposals at Cremorne Wharf.
- Planning and design relating with the redevelopment of Riverside Resource Recovery barge and tug operation and maintenance yard. The study includes ample works in the intertidal zone, including jetties and slipways to receive the barges.

4. Conclusion

In summary, the level of detail presented by AECOM in the study of February 2020 is proportional and appropriate to support the initial consideration of the design alternative for the DCO. The causeway concept, physical design, and construction techniques are considered achievable as described in the application.

A project risk register is developed alongside the design to capture the risks, resolution and mitigation covering issues including those mentioned in the Hydrock note. This live register ensures risks are actively evaluated and managed throughout the life of the project to a successful conclusion.

As identified by Hydrock and responded above, following the DCO award, development is needed to finalise the design.

The engineering challenges and constraints of constructing the causeway in the Thames will be addressed with appropriate engineering solutions. The design development informed as necessary by further site information will provide a design suitable for the successful implementation and removal of the causeway.

AECOM considers that the Technical Note titled Concept Design of Causeway for Delivery of AILs provides sufficient information about the causeway and its feasibility for a decision in the DCO application.

Appendix A Project Descriptions

Abnormal Loads & Port of Entry Studies
Various locations throughout the UK

Client
Various

Completion Date
Various

Services
Civil Engineering

Value
Various

AECOM has carried out a significant number of abnormal load route studies throughout Scotland associated with the delivery of transformers, and HVDC converters to a number of new and existing substations.

Grid Substation sites are typically in remote areas with limited access to large ports capable of accepting heavy loads, and challenging routes and road conditions to the site.

Studies commence at early design stage to ensure ports of entry, routes to the site and major constraints can be identified and mitigated. Once confirmed they are developed during the project planning process to allow agreement and construction in advance of the shipping requirements.

The following are typical services and processes adopted by AECOM for all Abnormal Load Studies:

- Schedule abnormal loads and sizes required by client (generic size assumptions can be made where details are not available).
- Select transporter options in conjunction with haulage specialist for review of route.
- Identify options for Ports of Entry (POE) and routes to site.
- Run routes in conjunction with a specialist haulage contractor. (URS typically use Allelys Heavy Haulage to provide this service.)
- Liaison with Pot Authority, Trunk Roads and Local road authorities to obtain loading and structure constraints, and agree possible mitigation requirements.
- Liaison with utility providers to establish route constraints and clearances

- Select appropriate Trailer configuration to suit load and constraints.
- Carry out detailed studies of structures and reporting on constraints on route, with check certification to owners.

- Prepare route constraints layout, schedule and mitigation report.
- Detailed Liaison with Port / Harbour Authority.
- Detailed Liaison with, Transport Scotland, Local Authority Road, and Utility Services / Providers.
- Design, detail and procure where necessary all temporary or permanent public and private road and structure improvements.
- Submission of construction details to stakeholders and agreement of Minutes of Agreement, Road Construction Consents, or Section 56 works.
- Pre and Post condition surveys of the route condition.
- Assistance with other road stakeholders (Police, and Community Liaison).
- On site attendance during load shipments.

A Selection of Route studies carried out is noted below:

Blackhillock Substation and Converter Station
Buckie Port to Blackhillock Substation (Keith) (29Km)
14 Transformers - 130 Tonnes to 300 Tonnes

Buckie Port to Rothienorman Substation (64Km)
4 Transformers - 210 Tonnes

Aberdeen to Kintore (20Km)
2 Transformers - 210 Tonnes

Peterhead Port to Bodham Substation and Convertor Station (5Km)
2 Transformers - 210 Tonnes
8 HVDC Convertors - 300 Tonnes

Invergordon Port to Cambusmore Substation (54Km)
4 Transformers - 130 Tonnes

Invergordon Port to Alness (13Km)
4 Transformers - 130 to 210 Tonnes

Wick South Port to Spittal Substation and Converter station (29Km)
4 Transformers - 130 to 210 Tonnes
4 HVDC Convertors - 300 Tonnes

Scabster Port to Connagill Substation (20Km)
1 Transformer - 220 Tonnes

Dundee Port to Tummell Substation (100km)
2 Transformers - 110 Tonnes

Greenloaning to Braco Site (5Km)
2 Transformers - 88 Tonnes

A' Chruach (Argyll)
2 Transformers - 110 Tonnes

Western Isles
Stornoway Port to Harris Substation
2 Transformers - 110 Tonnes

Stornoway Port to Stornoway Substation
2 Transformers - 170 Tonnes

Stornoway Port to Grabhair Converter Station
4 HVDC Convertors - 220 Tonnes

Shetland Islands
Lerwick Port (Gramista) to Kergord Substation and Converter Station
2 Transformers - 170 Tonnes
4 HVDC Convertors - 220 Tonnes

Port and Beach Landing Facilities

Sizewell C BLF (Osprey)

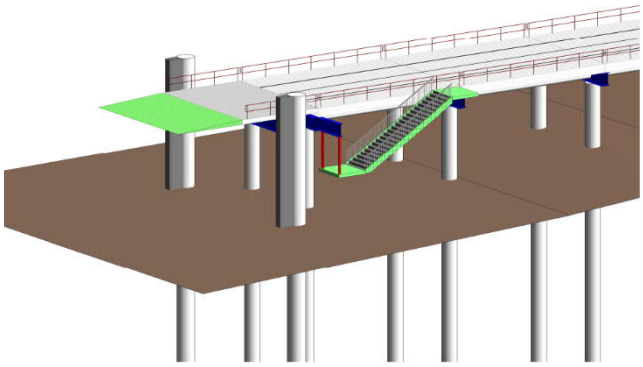
Removable inshore jetty design for berthing various barges for construction and future maintenance of the Nuclear Power Station
The jetty was capable of accommodating loads of 500Te offloading on SPMTs for direct shipping to the power station site
The study included offshore barge routing and tidal delivery windows over a prolonged campaign

Combwich Wharf (Osprey)

Study of existing wharf (currently being refurbished) for offloading barges
The existing bed was concrete with deep mud which required regular dredging
The objective was to site a barge on the base and deck delivery barges on top to avoid wet RoRo
Delivery loads circa 400Te

Drax Power Station (Allely's Heavy Haulage Ltd)
Cold Box Delivery programme

Offload facility check from existing RoRo jetty on the river Ouse and delivery of loads to the power station
Loads up to 800Te sections 70m long 10m high and 8m wide
Optional design included a crane pad for a 1200Te Crane with superlift over the jetty onto SPMT bogies



Avonmouth Port (Osprey)

Review to various berths and capacities available in the port for RoRo and superlift cranage.
Design of temporary ramp for SMPT access into storage for 500Te components

Keadby (Allely's Heavy Haulage Ltd)
Study of existing disused wharfs for offloading gas turbines from vessels to Girder trailers using 1000Te crane in superlift configuration.
Delivery loads circa 350Te
Project included design of suitable trailers and liaison with roads authority and design checks of various public bridges on the route

Ramsgate (Allely's Heavy Haulage Ltd)
Study of existing RoRo loaders and alternative offload berth options for the delivery of Super Grid Tranformers

Caledonian Canal (Inverness Locks)
Study of delivery options for large Hydro Electric construction components using port delivery and trans-shipment to barge and delivery to a temporary jetty on Loch Ness

Load Bridging Design

Stalybridge, Manchester (Allely's Heavy Haulage Ltd)

Overbridging design for existing 2 span concrete bridge for delivery of various components

Spalding
Design check on various bridges and over bridging design for delivery of 350Te Gas Turbine

Ipswich (Allely's Heavy Haulage Ltd)

Bridge design checks on route for delivery of super grid transformers.
Overbridging design on single span bridge (28m)

SPI PILING
A E YATES GROUP

CASE STUDY

COLINTRAIVE SLIPWAY
ISLE OF BUTE

Ports and Harbours

CLIENT
RAYNESWAY CONSTRUCTION LTD

CONTRACT NO.
C21222

PROCESS
2 PHASES / ABI TM 20M TELESCOPIC LEADER RIG

SPI Piling Ltd Installed steel pile tubes to form the foundations for the temporary slipway at Colintraive Ferry Terminal.
The installation was carried out to tie in with the tide levels, with a 7 to 9 hour working window to enable the piles to be installed before high tide covers the stone platform.

Installation of 20nr 610/17.5mm tubes installed in 2nr sections to form the foundations for the temporary slipway at Colintraive Ferry Terminal.
The installation will be carried out to tie in with the tide levels, it is anticipated that there will be a 7 to 9 hour working window to enable the piles to be installed before high tide covers the stone platform.

Phase 1
The tubes will be offloaded and pitched using a telescopic 100t crawler crane.
The 20m leader rig will install 20nr 18.3m long 610/17.5mm steel tubes. The piles will be installed from a stone platform formed at a level of 2.0mCD. The piles will be driven to a level of 3.0mOD to enable the piles to be extended.

Phase 2
Pile extensions will be lifted onto the installed tubes and welded in situ. The pile extensions range from 2.0m to 6.5m. The piles connection will be full penetration butt weld. Upon completion of the welding the piles will then be driven onto the rock to ensure that the required load is achieved. 4nr dynamic tests will be carried out to confirm that the pile loads have been achieved.

Upon completion of the testing the tubes will then be marked off and cut to level. The tubes on gridline 4 & 5 will be trimmed to the finished cut off level in readiness for the follow on work. Gridlines 1, 2 & 3 will be cut down at platform level with further trimming required when the stone platform is removed, these tubes will be required to be cut to final level by a diving team (this is likely to be carried out during the installation of the slipway by others)


TM 20


TM 20


TM 20


STOP
1
STOP
2

Shell Jetty Civil Works
UK

Client
Laing O'Rourke/Dredging International Joint Venture

Start date
2008

Completion date
2011

Services
Tender and Detailed Design, Construction Support

As part of the London Gateway Port development the existing bitumen and aviation fuel import jetties were demolished and replaced by a new jetty at the eastern end of the site. The new facilities are capable of taken a large range of vessels, from small bitumen carriers with less than 7,000 DWT up to large aviation fuel vessels with circa 130,000 DWT.

A modular design was undertaken, extensively using precast elements prepared offsite, with the objective to better control quality and increase the programme certainty, by maximising the use of landside construction equipment. The design was completed considering the conditions and limitations imposed by the Port of London Authority and Environment Agency, including the need to ensure at all times the operation of the existing flood defence wall. The design was undertaken considering all necessary construction stages. AECOM provided construction stage support, including the review and adaptation of the design whenever local conditions so required.

Our work included preparation of basis of design, detailed design, construction drawings, specifications, as built drawings and assistance with the preparation of the operation and maintenance manuals for the following elements:

- A contiguous piled submerged retaining wall, forming the berthing pocket and supporting the existing flood defence wall
- Approach Trestles (pipeway and roadway) and Sub-Structures including specification of a flood gate
- Loading Platform and Sub-Structures
- Berthing Dolphins (including berthing analysis)
- Mooring Dolphins (including mooring analysis)
- Bankseat structure and Sub-Structures
- Walkways connecting the Dolphins to the Loading Platform
- Fenders, Quick Release Hooks and Capstans
- Lighting to walkways/dolphins, Navigation Aids and Life Saving Equipment
- Corrosion Protection, Scour protection
- Ducts (including trays, ducts and trenches) for all services
- Surface Water Drainage to Loading Platform
- Miscellaneous Jetty Furniture/Fixtures and Fittings
- Mechanical and electrical

For further information please contact ports&marine@aecom.com

London Gateway Port
London, UK

Client
DP World/Laing O'Rourke/ Dredging International JV

Services
Design and Build Marine Works, Tender and Detailed Design, Construction Support

Start date
2005

Completion date
2016

Overall value
US$300 million

Fee value
US$14 million

AECOM was appointed by Laing O'Rourke/Dredging International JV Contractor, as lead designers, initially to prepare a tender design and subsequently detailed design for the new container terminal.

Dubai Ports World (DPW) is developing a major new port and Europe's largest logistics park on the former Shell oil refinery site covering 610 hectares (1500 acres) at Shell Haven near Stanford-le-Hope on the north bank of the River Thames.

The port will cover an area of approx 172 hectares (425 acres) situated on about 3km of the Thames waterfront. The port development will comprise a multi-modal container terminal and ro-ro terminal for the import, export and distribution of containerised freight by road, rail and sea.

The container terminal is designed to accommodate the world's largest deep-sea container ships along with smaller short-sea/feeder ships. It comprises of 2.7km of quay (equivalent to 7 or 8 berths for large ships), container storage yard and associated facilities capable of handling 3.5 million TEU's per annum when fully developed.

The paving was designed to accommodate transponders for future use of automated guided vehicles. Similarly the container stacking areas are designed for use by automated stacking cranes.

As part of the development approximately 50 nautical miles of dredging was required to deepen the approach channel, which provided more than sufficient material to reclaim over 100 hectares (247 acres) of land for the new port.

The existing bitumen and aviation fuel import jetties have been demolished and replaced by a new jetty at the eastern end of the site.

In addition, AECOM was appointed directly by DPW to undertake infrastructure design for the proposed logistics park which covers an area of approx 227 hectares (560acres).

For further information please contact ports&marine@aecom.com

Port of Tilbury Riverside Roll On/ Roll Off Extension

UK

Client
Port of Tilbury London Ltd

Services
Design and geotechnical, structural and mooring analysis

Start date
2014

Completion date
2015

Fee value
GBP£85k

AECOM were appointed by Port of Tilbury London Ltd (PoT) in 2014 to expand the existing Roll On/Roll Off facility immediately upstream of the cruise terminal to accommodate larger 236m 31,000 DWT Grimaldi Vessel.

The project requirements were the provision of one additional berthing dolphin, and one additional mooring dolphin to be constructed at the upstream end of the facility in order to accommodate the additional vessel length. The construction works were carried out while the existing Ro/Ro was still in operation and the design needed to give sufficient safety provisions during construction.

Both the mooring and berthing dolphins are essentially concrete block gravity structures, supported on open ended steel tubular piles. The bearing piles were driven to capacity into the chalk strata below the Thames ballast layer, which is near the surface along the river boundary. The piles were driven to sufficient depth to attain a full ground, pile moment capacity.

The concrete dolphin superstructure was formed by bulk insitu pours. The pours were split into two per each dolphin in order to minimise the weight in the temporary works - and reduce construction risk. The first pour ('biscuit' pour) was supported by a full grillage soffit shutter clamped to the piles. Once the biscuit pour was made, it was capable of carrying the second stage pour in its own right.

At all times it was essential that the temporary works were kept away from the berthing line. In this respect the works were therefore constructed from jack-up platforms situated on the landward side of the works to ensure the maximum clearance to the berthing line and incoming vessels.

For further information please contact ports&marine@aecom.com

Cremorne Wharf Safeguarded Wharves Analysis Report
UK

Client
Thames Water

Start date
September 2014

Fee value
GBP£50k

Services
Compatibility Report

Completion date
October 2016

AECOM was commissioned by Thames Water Utilities to prepare a report assessing the compatibility of its Counters Creek Storm Relief Sewer proposals at Cremorne Wharf - a wharf safeguarded in the London Plan for marine cargo handling.

The report identified the existing land-side, maritime and environmental constraints at and surrounding the wharf, and sets out the expected constraints of the project at the site once in operation. Potential wharf activities at the site were then modelled in order to identify the incremental impact of constraints imposed by Counters Creek proposals compared to the existing constraints, to demonstrate whether the wharf will remain viable.

Analysis included consideration of a scenario whereby the Thames Tideway Tunnel (TTT) - a nationally significant infrastructure project with an extant consent at the site - only would be built, instead of in an integrated solution with the Counters Creek proposals. Extensive consultation with the Greater London Authority and Port of London Authority was required throughout the analysis. The report fed into a planning application for consideration by the Royal Borough of Kensington and Chelsea and Greater London Authority which was submitted in September 2016.

AECOM added value here through its staff having worked on the DCO for the TTT, and currently undertaking work on the detailed design of the TTT for Thames Water.

The team also worked alongside various environmental disciplines in AECOM who were undertaking the Environmental Impact Assessment of the project, the findings of which fed into the safeguarded wharves report and analysis.

For further information please contact ports&marine@aecom.com

Charlton Barge and Tug Operation and Maintenance Yard

UK

Client
Cory Environmental/
Riverside Recovery Ltd

Services
Planning and design

Start date
2011

Completion date
2013

Fee value
GBP£136k

AECOM was appointed to undertake planning and design of the redevelopment of operations due to new, larger tugs.

Riverside Resource Recovery (a subsidiary of Cory Environmental Ltd) undertakes the marine transport of containerised waste on the River Thames in London, from a number of load-out facilities along the river to landfill at Mucking and an incinerator at Belvedere. The company operates a fleet of 5 tugs and almost 50 barges, which it maintains in-house at a dedicated facility located at its marine operations base at Charlton, in South- East London. Introduction of new, larger, tugs resulted in a need to increase both the size, and load carrying capacity of the maintenance facilities, with the opportunity being taken to also enhance the marine operations facilities.

AECOM was appointed to undertake planning and design for the comprehensive redevelopment of the operations and maintenance base and to prepare submissions for the necessary development consents.

The development provides improved facilities able to accommodate larger tugs and modern operating methods. The marine works encompass two finger piers for a travellift boat hoist; a floating pier for tug berthing, consisting of two pontoons and monopiled restraint dolphins, connected to the shore by a canting brow gangway. Also included were drainage outfalls and reconstruction of the riverside wall and flood defences for the full 280m of river frontage. On-shore works included two large maintenance sheds with a total of 4 dry berths, a stores and fabrication workshop and a 3 storey office block together with associated vehicle parking, landscaping and infrastructure.

AECOM was responsible for operation and development planning and all design including architectural, marine, structural, infrastructure, and building services, and for undertaking environmental assessment work including baseline data collection and impact assessment including ecological, traffic, and navigation impact. AECOM was responsible for undertaking stakeholder consultation and liaison with stakeholders including Port of London, Environment Agency, Thames Water and the local planning authority.

AECOM undertook the work as a highly integrated process, ensuring that the client achieved a cost effective facility delivering economic operations while respecting the environmental sensitivities and complex navigation issues of the site. A phasing study identified options to deliver the development in phases to suit the availability of funding and enabled all operations to continue with minimum disruption during the construction phase.

Resources utilised Marine/Port Planners; Maritime, Civil, Infrastructure, Highway, Structural, Mechanical, Electrical and Building Services Engineers; Architects; EIA Specialists; Navigation Specialists; the full range of Environmental Specialists; and CAD/Visualisation Specialists.

For further information please contact ports&marine@aecom.com