

Great Yarmouth Third River Crossing Order 202[*]

Document NCC/GY3RC/EX/036: Written summaries of oral submissions made at Issue Specific Hearing 1 on the Effect on Port Operations (ISH1) held on 19 November 2019

Planning Act 2008

Infrastructure Planning

The Infrastructure Planning (Examination Procedure) Rules 2010

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Introduction

- 1.1.1 This note summarises the submissions made by Norfolk County Council (in its capacity as local highway authority and promoter of the Great Yarmouth Third River Crossing ("**the Scheme**") ("**the Applicant**") at Issue Specific Hearing 1 held on 19 November 2019 ("**the Hearing**") in relation to the Applicant's application for development consent for the Scheme.
- 1.1.2 Where the Examining Authority ("**the ExA**") requested further information from the Applicant on particular matters, or the Applicant undertook to provide further information during the Hearing, the Applicant's response is set out in this document or, if so stated in this document, will be provided in other documentation either at Deadline 3 (28 November 2019), or, where necessary (to allow full and proper consideration) at a subsequent Examination Deadline.
- 1.1.3 This document does not purport to summarise the oral submissions of parties other than the Applicant, and summaries of submissions made by other parties are only included where necessary in order to give context to the Applicant's submissions in response, or where the Applicant agreed with the submissions of another party and so made no further submissions itself.
- 1.1.4 The structure of this document follows the order of items in the agenda for the Hearing, as published by the ExA on 13 November 2019 ("**the Agenda**"). Numbered Agenda items referred to in this document are references to the numbered items on the Agenda. The Applicant's substantive oral submissions commenced at item 3 of the Agenda, therefore this note does not cover items 1 and 2 on the Agenda which were procedural and administrative in nature (as were items 8, 9 and 10). Item 7 was not considered in any detail and instead was carried over to Compulsory Acquisition Hearing 1 held on 20 November 2019.

ExA's Agenda Item	Summary of the Applicant's Oral Submissions made in the Issue Specific Hearing on the Effect on Port Operations, held on 19 November 2019	Relevant document references
3 – Applicant to explain changes to pNRA		
Applicant to explain changes to pNRA - including latest vessel simulations	<p>Mr Michael Bedford QC, on behalf of the Applicant, noted that the Applicant had submitted an updated version of the Preliminary Navigation Risk Assessment at Deadline 2. Mr Stephen Horne of WSP on behalf of the Applicant will provide a summary of the main changes in this version. The Preliminary Navigation Risk Assessment is a 'living document' and this latest iteration is expected to continue to be updated during the Examination. In addition, Mr Bedford QC confirmed that Great Yarmouth Port Authority (GYPA)/Great Yarmouth Port Company (GYPC) had recently provided comments to the Applicant on the version of the Preliminary Navigation Risk Assessment submitted at Deadline 2. The Applicant expects that GYPA/GYPC will submit these comments formally at Deadline 3 and the Applicant can then respond as necessary at Deadline 4 to any points raised. Nonetheless, it was considered that GYPA/GYPC's comments relate to points of clarification rather than being major concerns.</p> <p>Mr Nick Brown, on behalf of GYPA/GYPC, agreed with Mr Bedford QC's summary and confirmed that, subject to discussions during this Hearing, GYPA/GYPC's comments would likely be submitted at Deadline 3.</p>	Preliminary Navigation Risk Assessment (Document Reference NCC/GY3RC/EX/029, Planning Inspectorate Reference REP2-015/16)

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	<p>Mr Ben Fallat, on behalf of the Royal Yachting Association, noted that there has been dialogue between the Applicant and GYPA/GYPC but other parties are frustrated at a lack of engagement. A conference call is scheduled between the Royal Yachting Association, WSP and the Applicant on 22 November 2019.</p> <p>Mr Stephen Horne, on behalf of the Applicant, outlined the key amendments in the latest version of the Preliminary Navigation Risk Assessment. The main driver for producing the latest iteration was the conclusion of a further round of vessel simulations undertaken at the request of GYPA/GYPC. The key amendments are as follows:</p> <ul style="list-style-type: none"> • Note of additional simulation and workshop along with outcomes and reports • Clarification of 'human error' in relation to bridge operations • Addition of specific communication plan requirements to construction phase mitigation • Expansion of operational phase update requirements • Expansion of familiarisation and training mitigation recommendations • Addition to bridge operational procedure mitigation • Addition of operator training and competence mitigation • Expansion of inspection and handover mitigation 	

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	<ul style="list-style-type: none"> • Addition of an overall risk for port severance (added to address comments from GYPA/GYPC) • Inclusion of 'River Works Ahead' signage for identification. <p>The vessel simulations were undertaken at HR Wallingford by a number of pilots using vessels typical of those using the port. The new bridge was in place for the simulations. Approximately 30 different 'runs' were tested in varying conditions (e.g. weather, tidal and vessel). The limit of what is reasonable is tested rather than just what is known will work. Videos of some of the simulations undertaken were shown on screen in the Hearing, including a more challenging scenario with a 93-metre cargo vessel leaving Berth 14. There was some trial and error applied throughout the whole simulation process. No further simulation is envisaged unless, for instance, there are changes to the Scheme. However, the Preliminary Navigation Risk Assessment is likely to be updated further, e.g. in relation to construction methodology.</p> <p>Mr Nick Brown, on behalf of GYPA/GYPC, confirmed that GYPA/GYPC were happy with the simulations undertaken.</p> <p>Mr Alan Goodchild, on behalf of Goodchild Marine Services, stated that he had studied the results of the simulations (and 'run 33' in particular) and raised a concern for vessels moored on the waiting pontoons, in relation to the use</p>	

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	<p>(by other vessels) of bow thrusters. If smaller vessels do not transit through the bridge first then the bow thrusters could be dangerous for them and experience suggests that small vessels can be sunk by a bow thruster.</p> <p>Mr Michael Nicholson, on behalf of the Applicant, confirmed that because the river is narrow it is common for pilots to use bow thrusters. It will be the pilots' job to be wary when using them.</p> <p>Mr Gary Doyle, on behalf of GYPA/GYPC, indicated that the concern raised by Mr Alan Goodchild is a valid one and something that should be considered further.</p> <p>Mr Stephen Horne, on behalf of the Applicant, clarified that recreational vessels in the waiting pontoon would be given transit before any large vessel arrives and the intention is that those pontoons are not occupied whilst a large commercial vessel is making transit.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, submitted that there is currently no direct reference to this in article 43 of the dDCO or the Scheme of Operation (Schedule 10). The Applicant is conscious that it does not want to trespass on the responsibilities of the Harbour Authority in terms of vessel</p>	

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	<p>movements. The key point on this concern is that recreational vessels would transit before commercial vessels so the scenario of a bow thruster causing damage is unlikely. If a commercial vessel could not transit, then it would be the pilot's responsibility e.g. to request that a stranded vessel is moved/halt the transit etc. This whole scenario needs to be discussed and agreed with the Harbour Authority, given its statutory duty to ensure navigational safety.</p> <p>Ben Fallat, on behalf of the Royal Yachting Association, queried aspects of the simulation. For instance, paragraph 5.4.2.1 makes reference to streams having been 'known to reach 6 knots in extreme conditions' within the river. However, these speeds have not been simulated because they occur elsewhere on the river (Haven Bridge). The restriction of the river width at Haven Bridge is 24% but there will be a 60% restriction at the new bridge. This could see a backing up of the water.</p> <p>Stephen Horne, on behalf of the Applicant, confirmed that the tidal profiles used in simulation were derived from the 3D hydrodynamic modelling undertaken. This is considered to be the most reliable assessment. The figures for flow rates considered existing flow rates present in other parts of the river and how they would change if applied at the proposed location of the Scheme. Extreme events (e.g. 6 knots) relate to storm events and are not</p>	

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	<p>generated by normal tidal conditions. The simulator has simulated extreme events that are likely to happen in normal tidal conditions.</p> <p>Mr Michael Nicholson, on behalf of the Applicant, confirmed that not all extreme conditions were modelled because the information provided indicated vessels would not be operating in such conditions. In short, the Applicant has modelled extreme events in every day conditions.</p> <p>Mr Ben Fallat, on behalf of the Royal Yachting Association, noted the scenario of flotillas of small boats in the river and that the simulations had not captured this.</p> <p>Mr Stephen Horne, on behalf of the Applicant, indicated that this scenario would be considered further by the Applicant.</p>	
4 – Design and operation of the bridge		
- Overview of Schedule 10 Part 1 of dDCO	Mr Mark Kemp , on behalf of the Applicant, confirmed that the Scheme of Operation (Schedule 10) should be read alongside article 43 of the dDCO. This was developed in consultation with GYPA/GYPC. It may be that the	Draft DCO Revision 1

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	<p>Scheme of Operation needs to be varied at a later stage (e.g. as a result of trial and error) but any amendments must comply with the general principles set out in article 43(6). The Scheme of Operation provides for the following:</p> <ul style="list-style-type: none"> • Bridge operations - when the bridge will open • Opening requests – information to be provided by vessel operators including timescales for exchange of information • Opening request revisions – ability to change a request • Vessels inbound and outbound – sets out detailed arrangements • Recreational vessels – sets out arrangements for recreational vessels • Paragraph 8 sets out provisions for emergency vessels • Paragraph 9 sets out arrangements should a specified event occur <p>The bridge will open on demand for commercial vessels. For recreational vessels, it will be on a request basis (i.e. the bridge would not necessarily open on demand during peak hours, for instance), which is why waiting pontoons are required to be provided.</p> <p>Mr Stephen Horne, on behalf of the Applicant, confirmed that there are a number of methods of communications between vessels and the control tower. VHF will be the main method for commercial vessels but there will also be email, telephone and a web portal.</p>	<p>(Document Reference NCC/GY3RC/EX/023, Planning Inspectorate reference REP2-009 (clean) and Document Reference NCC/GY3RC/EX/024, Planning Inspectorate Reference REP2-010 (tracked changes))</p>

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	<p>Mr Alan Goodchild, on behalf of Goodchild Marine Services, stated that the expectation with a 4.5 metre air draft is that most vessels (including recreational vessels) will require the bridge to open. The concern is that there is reference to 'commercial vessels' and 'recreational vessels', the distinction between which is not wholly clearly defined.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, quoted the definition of 'recreational vessel' included in Schedule 10 to the dDCO and explained that this relates to the activity for a vessel rather than e.g. its size.</p> <p>Mr Nick Brown, on behalf of GYPA/GYPC, indicated that approximately 50% of recreational vessels would require the bridge to be lifted.</p> <p>Ms Sue Goodchild, on behalf of Goodchild Marine Services, raised a query about leisure vessels being repaired by Goodchild Marine Services and then taken out to sea for trial. Would that be a 'recreational vessel' or a commercial vessel?</p> <p>Mr Stephen Horne, on behalf of the Applicant, confirmed that this scenario i.e. a recreational vessel being trialled by a commercial shipyard would be classed as a commercial vessel. It would fall outside of the definition of 'recreational vessel' so opening of the bridge would be on demand.</p>	

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	<p>Mr Gary Doyle, on behalf of GYPA/GYPC, stated that more information is needed at this stage in terms of the quantity of vessels that are being referred to in respect of Goodchild Marine Services (see above).</p> <p>Ms Sue Goodchild, on behalf of Goodchild Marine Services, explained how it works with GYPA/GYPC in terms of transiting the Breydon and the Haven bridges.</p> <p>Mr Mark Kemp, on behalf of the Applicant, stated that the new bridge, if constructed, will open approximately 15 times per day. This anticipated frequency of bridge operations is based on historical vessel movement information supplied by GYPA/GYPC and increased by a factor of 2 to provide for future increases in port operations. The constraint will be the existing bridges and not the new bridge. The Applicant cannot also consider existing legislation relating to the existing bridges. A significant upgrade to electrical systems for the Haven Bridge is planned for 2020.</p> <p>Mr Richard Goffin, on behalf of GYPA/GYPC, said that the Breydon and the Haven bridges often have issues which happen to coincide with one another.</p>	

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	GYP A/GYPC would like to work with the Applicant to ensure risks for port users are mitigated as much as possible.	
- Coordination with existing bridges	<p>Mr Mark Kemp, on behalf of the Applicant, confirmed that the Applicant has discussed the principle for notifications for bridge openings for all bridges to be made via the Third River Crossing contact process with GYPC as operator of the existing two bridges. If GYPC are in agreement this would mean the requisite sub-notices will be taken care of by the operator of the Third River Crossing and a vessel will only need to make one application to have any number of the bridges opened for an individual passage. However, all three bridges will be subject to their own regimes and the Applicant does not control the regimes for the other two bridges (but the intention is for the notification process to only require a single notification).</p> <p>Mr Nick Brown, on behalf of GYP A/GYPC, confirmed GYP A/GYPC's agreement in principle but noted that this proposal would need to be considered in detail.</p> <p>Mr Alastair Duncan, on behalf of ASCO, stated that commercial movements and recreational movements are not mutually exclusive. There may be congestion south of the new bridge which would impact on ASCO's operations.</p>	

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<p>- Frequency and duration of openings and emergency procedures</p>	<p>Mr Mark Kemp, on behalf of the Applicant, explained the failsafe mechanism built into the design of this bridge. As set out in more detail in the Applicant's Response to Written Representations document, the bridge is designed to have an emergency operation mode when an emergency has arisen under the Standard Operating Procedures. When this mode is activated, the bridge and its mechanisms will stop in a controlled manner under the actions of the hydraulic system. Manual emergency operation will be allowed to return the bridge to the closed position. Once the bridge is in the closed position, either as a result of any emergency stop or other fault conditions during operations, "back-up systems" will allow the bridge to operate under supply fault conditions. Mr Kemp also confirmed that there is provision in the Applicant's contract with its contractor to keep a supply of parts.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, stated that the draft Development Consent Order provides for the Applicant, so far as practicable, to keep the bridge in the raised position from the occurrence of a failure to raise or close (see paragraph 70 of the protective provisions for the benefit of GYPA, in Part 6 of Schedule 14 to the draft DCO). It would not be inconceivable for there to be a combination of events leading to the bridge being stuck in the closed position but that is not the default position.</p>	<p>Applicant's Responses to Written Representations (Document Reference NCC/GY3RC/EX/016, Planning Inspectorate Reference REP2-002)</p> <p>Draft DCO Revision 1 (Document Reference NCC/GY3RC/EX/023, Planning Inspectorate reference REP2-009 (clean) and Document Reference NCC/GY3RC/EX/024, Planning Inspectorate Reference REP2-010 (tracked changes))</p>

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	<p>Mr Michael Boon stated that during his time with GYPA he negotiated with the Government to make sure every spare part was available for the Haven bridge. Vessels could be trapped above the bridge if the new bridge is stuck in the closed position and query whether the Applicant will give guarantees to operators above the bridge. Electrical back-up systems are not the answer.</p> <p>Mr Michael Boon stated that he understood from earlier discussions with the Applicant that in the event of a failed bridge opening it would be possible to open the bridge within one hour.</p> <p>Mr Mark Kemp, on behalf of the Applicant, stated he would need to check and confirm this and would provide an update to the ExA.. The system being used is tried and tested and the Applicant's contractor has delivered it many times in America. The failure rate is very low. It is not a prototype.</p> <p>Mr Gary Doyle, on behalf of GYPA/GYPC, confirmed that with the new bridge ships will still be subject to compulsory pilotage. There will be no change to that.</p> <p>Mr Stephen Horne, on behalf of the Applicant, stated that notwithstanding partial openings on other bridges, this new bridge will either be open or closed</p>	

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	<p>(i.e. there will be no partial opening). This is for safety and control purposes. It is not considered practical to interrupt and reverse the opening operational procedure consistently. All assessments that the Applicant has undertaken are on the principle that a full cycle is required for all operations.</p> <p>Mr Mark Kemp, on behalf of the Applicant, said that the contract the Applicant has with its contractor provides for the construction of the Scheme with a one year operation provision and a three year maintenance provision.</p>	
<p>- Information and communication systems and piloting</p>	<p>Mr Mark Kemp, on behalf of the Applicant, stated that air draft boards are to be provided but the Applicant does not consider there is a need for Variable Message Signs (VMSs) for recreational vessels. The Applicant does not feel there is a need for any further information systems beyond VHF, email, telephone and web portal.</p> <p>Mr Boon said that he has spoken at length with the Applicant and Highways England in respect of traffic effects from lifting. Experience suggests that traffic remains after a bridge opening but he has been informed that traffic would be moving again within five minutes. The figures for lifting and clearing are not reliable and the A47 works have also been delayed.</p>	<p>Applicant's Responses to Written Representations (Document Reference NCC/GY3RC/EX/016, Planning Inspectorate Reference REP2-002)</p>

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	<p>Mr Michael Bedford QC, on behalf of the Applicant, stated that the Transport Assessment and related supporting material explains the traffic modelling process. The Applicant has undertaken this work using best practice (i.e. WebTag and DMRB) and has liaised with Highways England and Norfolk County Council. The Applicant is satisfied that it has a model which accurately represents the scenario of the new bridge being in situ.</p> <p>Mr Boon, on a separate point, indicated that there had always been a protected alignment for rail from the Outer Harbour to Vauxhall. Rail connections should be accommodated in the design of the bridge and the future rail connection should not be cut-off. The Applicant has stated that there is no reference to railway in the Borough local plan.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, stated that it would be best for the Applicant to address the rail matter as part of its written summary of responses by giving chapter and verse on land use policy. This is an evolving position as some development plans are being replaced. The Applicant has provided text in the Applicant's Response to Written Representations section 16.1.102 to 16.1.104.</p>	

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	<p>Mr Boon raised a point about the bridge being placed in the river. Previously there have been flood surges and overtopping of river walls. The bridge in the river will be a constraint.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, stated that with respect to surges, this is being discussed and addressed in discussions with the Environment Agency.</p> <p>Mr Alan Goodchild, on behalf of Goodchild Marine Services, queried whether the bridge will still be operational in the event of flooding.</p> <p>Mr Stephen Horne, on behalf of the Applicant, stated that the head wall of the ballast chamber is above flood level. Flooding is not expected however they are equipped with flood pumps if necessary.</p>	
5 – Mooring Facilities		
- Rationale for location of berths/pontoons	See earlier discussion.	

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<p>- Emergency commercial vessel berthing</p>	<p>Mr Nick Brown, on behalf of GYPA/GYPC, stated that there is a concern that a vessel approaching the bridge would have nowhere to go in the event that the bridge does not open. For that reason an emergency layby berth is required.</p> <p>Mr Gary Doyle, on behalf of GYPA/GYPC, explained this point. The risk assessment must be right every time a vessel is brought into the port. There are time limits on when a vessel can come into the port (e.g. dependent on size of vessel, state of tide, weather etc.). Transit will take 30-40 minutes and whilst it is unlikely that the bridge will fail, GYPA/GYPC is responsible for vessels if it does. There may not be an alternative suitable berth available, the conditions may change so the vessel cannot return to sea, not all bigger vessels can go in a holding station and there are cables in the river bed which makes anchoring difficult. All of these factors could result in a vessel having nowhere to go. The proposed waiting facilities at Bollard Quay are too close to the new bridge to accommodate large commercial vessels safely.</p> <p>Mr Michael Bedford QC, on behalf of the Applicant, confirmed that the Applicant had concluded that there is no need for an emergency berth. This is an issue of balancing risk.</p>	<p>Preliminary Navigation Risk Assessment (Document Reference NCC/GY3RC/EX/029, Planning Inspectorate Reference REP2-015/16)</p>

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	<p>Mr Mark Kemp, on behalf of the Applicant, made reference to the Preliminary Navigation Risk Assessment submitted at Deadline 2. Paragraphs 3.2.5 – 10 refer to the Navigation Risk Assessment workshop that took place on 19 September 2019 and this followed the supplementary vessel simulation modelling undertaken by HR Wallingford (the HRW report is contained within Appendix E of the updated Preliminary Navigation Risk Assessment). The need for a large vessel waiting facility was discussed at the workshop and it was agreed that there are operational methods that would remove the need for this from a pure safety perspective, but these would potentially lead to longer openings of the bridge under certain circumstances. The navigational risks associated with potential bridge failures for this type of facility could be adequately managed by other operational methods, as stated at paragraph 7.3.5 of the Preliminary Navigation Risk Assessment. In practice, this would work as follows in the event that the bridge failed to open:</p> <ol style="list-style-type: none"> 1) The smaller and more manoeuvrable commercial vessels would be able to either return to sea, proceed to an alternative berth (in consultation with GYPA/GYPC) or hold station in the river. 2) For the larger commercial vessels an alternative emergency berth could be prearranged with GYPA/GYPC prior to the vessel entering the river as part of the pilotage plan for the vessel's passage. 3) If no emergency berth or other safe alternative is available, the bridge would be opened before the vessel enters the port. Opening the bridge 	

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	<p>before a vessel enters the port would prevent a scenario arising in which a vessel had entered the port but was unable to reach its end destination due to a failure of the bridge to open. By opening the bridge in advance, any operational failure would become known whilst the vessel still had the opportunity to remain at sea. While the frequency of such occurrences cannot be fully predicted, based on available historical vessel movement data we would anticipate this to be very low. In this instance the Applicant could accept an extended opening period. The Applicant intends revise the draft Development Consent Order to reflect this point in amendments to be made to article 43 and Schedule 10 (these amendments will not be included in the draft DCO submitted at Deadline 3, however, in order to allow adequate timescales for proper consideration and collaboration with GYPC/GYPA.</p> <p>The Applicant believes that the likelihood and frequency of this occurrence must be balanced against the costs associated with the provision and maintenance of a permanent dedicated emergency waiting facility. With the above operational procedure in place the Applicant does not consider there is a need for such a dedicated facility.</p> <p>An emergency commercial vessel berthing would need to be approximately 130m in length.</p>	

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	<p>Mr Nick Brown, on behalf of GYPA/GYPC, stated that this proposed approach (i.e. (3) above) seemed acceptable but queried whether it would continue to apply in 15/20 years if it is not included within the draft development consent order.</p>	
6 – Construction Period		
- Including the provision of closure to navigation during bridge construction	<p>Mr Mark Kemp, on behalf of the Applicant, confirmed that considerable work has already been undertaken by the Applicant with its contractor to develop construction methodology and programme. The Applicant has committed to no more than three closures of the river for a period of 72 hours per closure for the purpose of construction of the new bridge (see article 23 of the draft development consent order). The Applicant anticipates that its contractor will require two of the three closures provided for (i.e. the final closure is a back-up). Notice requirements for closures are set out in article 23 (i.e. 21 days' for a closure of the entire width of the river Yare) and the Applicant already has an idea of when the required closure dates may be, which will evolve.</p>	<p>Outline Code of Construction Practice (Document Reference 6.16, Planning Inspectorate Reference APP-187)</p>
- Sequencing of works and	<p>Mr Mark Kemp, on behalf of the Applicant, gave a presentation on construction sequencing of works proposed in the river which was prepared by</p>	

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<p>notification of closures</p>	<p>the Applicant's contractor. The construction process was developed during the tender stage and is now being further developed as part of the detailed design process. The focus is on the integration of permanent works, protecting and securing existing quays and minimising disruption to the port. Piling to the rear of the combi wall would be carried out by a jack-up barge and the river is not required to be closed for this. Cofferdams will come following the piling and excavation would take place from the quayside. The central span will be prepared on the quayside. Complete river closure is required to install the counterweight sections. Barges are to be used for the movement of the central spans into the river and for installation. The necessary components are then bolted together, and the bridge can be opened.</p> <p>The Applicant confirmed it would submit a copy of the presentation to the Examination at Deadline 3. This presentation can be found at Appendix A of this document.</p> <p>Mr Ben Fallat, on behalf of the Royal Yachting Association, requested that there is some liaison between the parties constructing this bridge and Lowestoft to ensure that the works do not overlap (as there are only two ways of accessing the Broads from the sea, i.e. via the river Yare and Lake Lothing).</p>	

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	<p>Mark Kemp, on behalf of the Applicant, referred to the Outline Code of Construction Practice that will be relevant when moving towards the construction phase. The Port and Community Liaison Officer will be a full time appointment and there will also be marine working groups during the construction period.</p> <p>Alastair Duncan, on behalf of ASCO, queried how far south the closures of the river will impact.</p> <p>Mark Kemp, on behalf of the Applicant, indicated that this would need to be confirmed with the contractor.</p>	
7 – Compensation issues		
- What compensation will be available for local businesses	Mr Boon stated that Fish Wharf is a big area of land that is going to be cut in half and users will want to have a say in relation to compensation.	

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8 – Review and Actions Arising		
	Agenda item not utilised in the Hearing.	
9 – Any Other Business		
	Mr Richard Goffin , on behalf of GYPA/GYPC, suggested a joined-up approach between the Applicant, GYPA/GYPC and Goodchild Marine Services through a joint HAZID meeting so that each party has an appreciation of how vessel movements will work in practice.	



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Appendix A

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Great Yarmouth 3rd River Crossing



Richard Hayman
Construction Manager - BFJV

Great Yarmouth 3rd River Crossing – Construction Approach

- The construction processes were developed throughout the tender stage, which involved comprehensive development of each stage. These are now being further developed as part of the detailed design process
- Focus is on integration of temporary works into permanent works
- Protecting/securing/reinstating existing quays
- Minimising potential disruption to river/port operations
- In-house CJV capabilities and Self delivery
- Construction techniques and methods based on previous experience of working within the port.



Great Yarmouth 3rd River Crossing – Overall Scheme



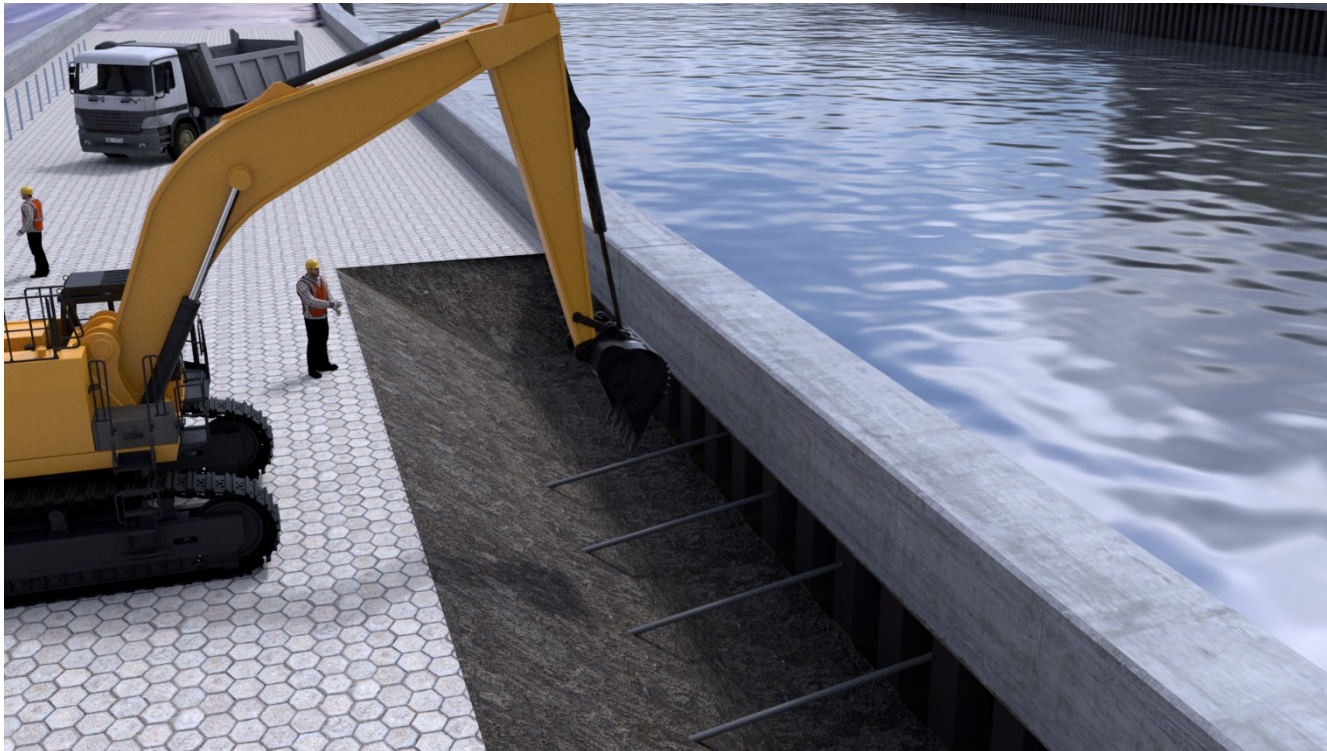
Great Yarmouth 3rd River Crossing – Bascule Bridge construction



Great Yarmouth 3rd River Crossing – Bascule pit construction



Excavation to expose existing tie rods



Great Yarmouth 3rd River Crossing – Bascule pit construction



Piling rear combi wall



Great Yarmouth 3rd River Crossing – Bascule pit construction

Combi wall piling works



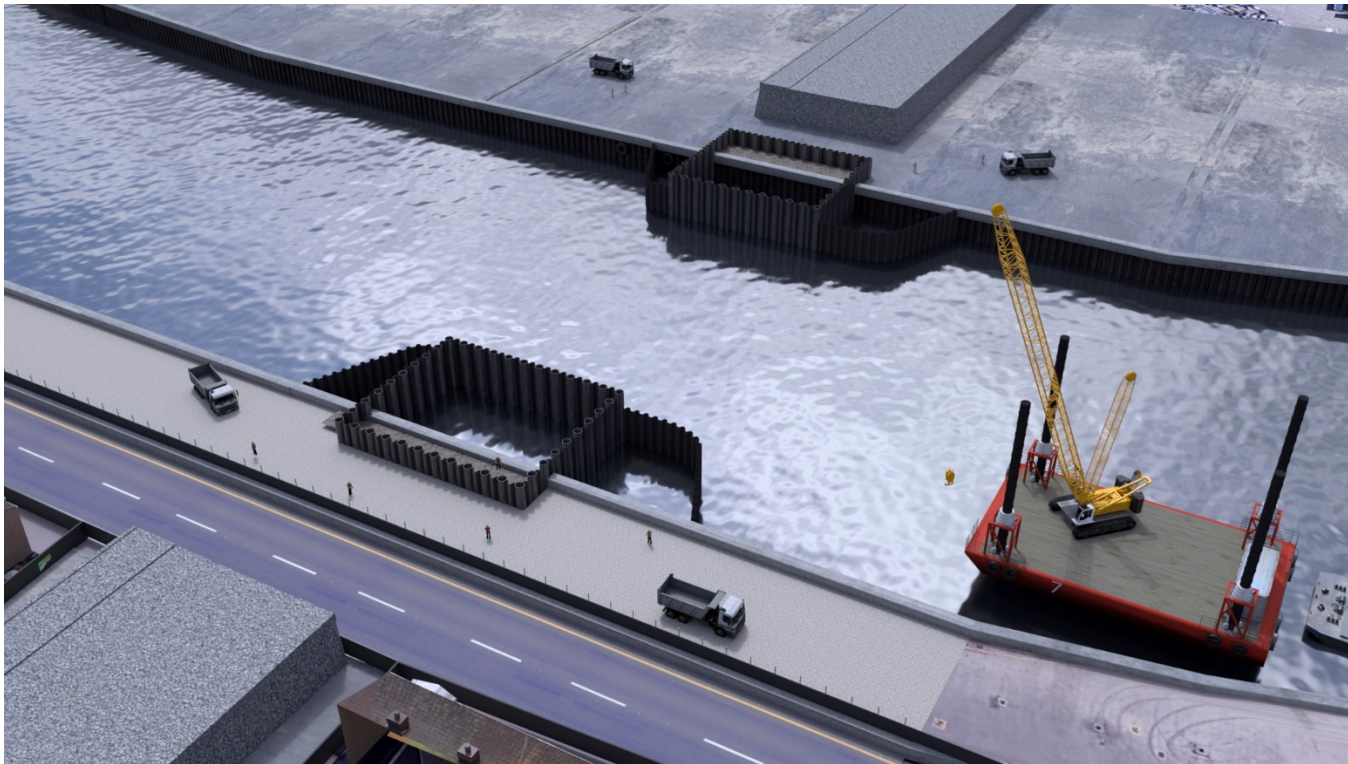
Great Yarmouth 3rd River Crossing – Bascule pit construction

Collision protection structures – piling works



Great Yarmouth 3rd River Crossing – Bascule pit construction

Overview of completed piling works



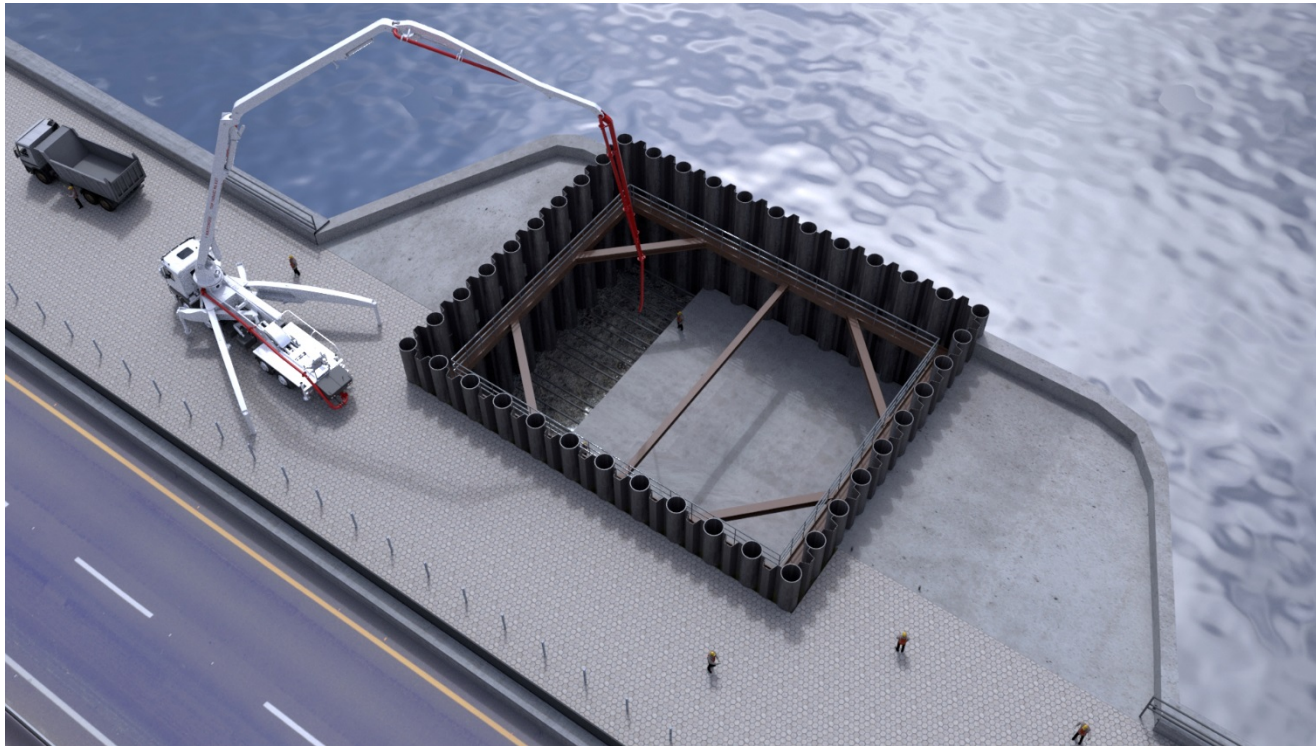
Great Yarmouth 3rd River Crossing – Bascule pit construction

Excavation of cofferdams



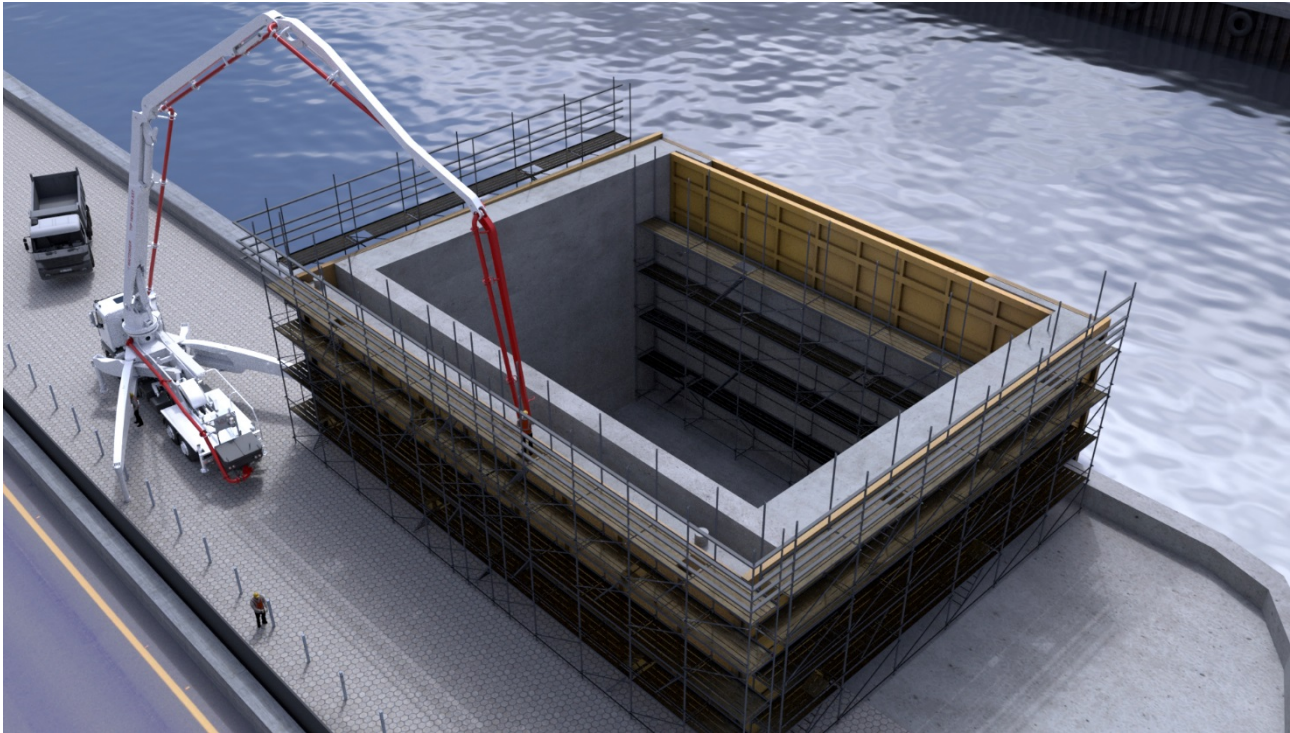
Great Yarmouth 3rd River Crossing – Bascule pit construction

Casting bascule pit base slab



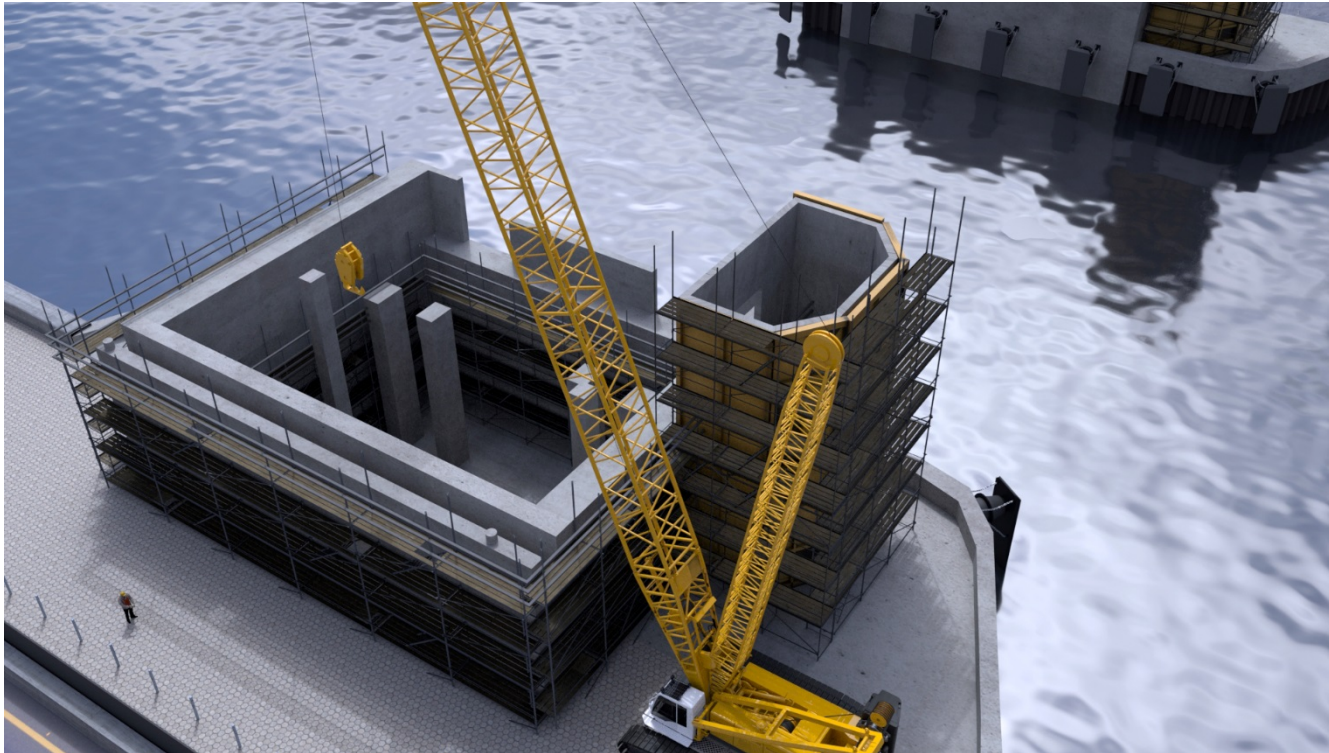
Great Yarmouth 3rd River Crossing – Bascule pit construction

Casting bascule pit walls



Great Yarmouth 3rd River Crossing – Bascule pit construction

Control tower and internal works



Great Yarmouth 3rd River Crossing – Bridge deck assembly works



Onsite assembly of rear counterweight sections



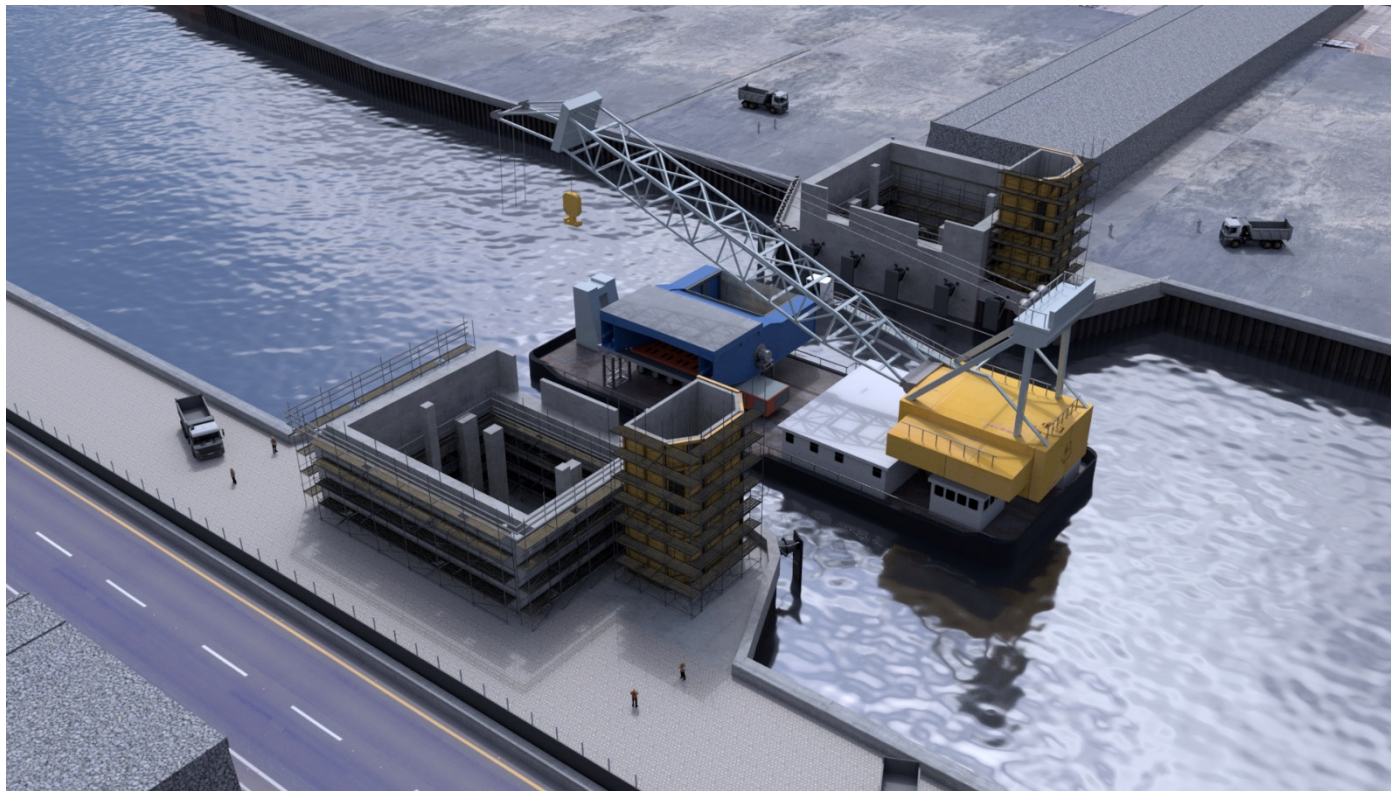
Great Yarmouth 3rd River Crossing – Bridge deck assembly works

Onsite assembly of central span



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Onsite installation of rear counterweight sections



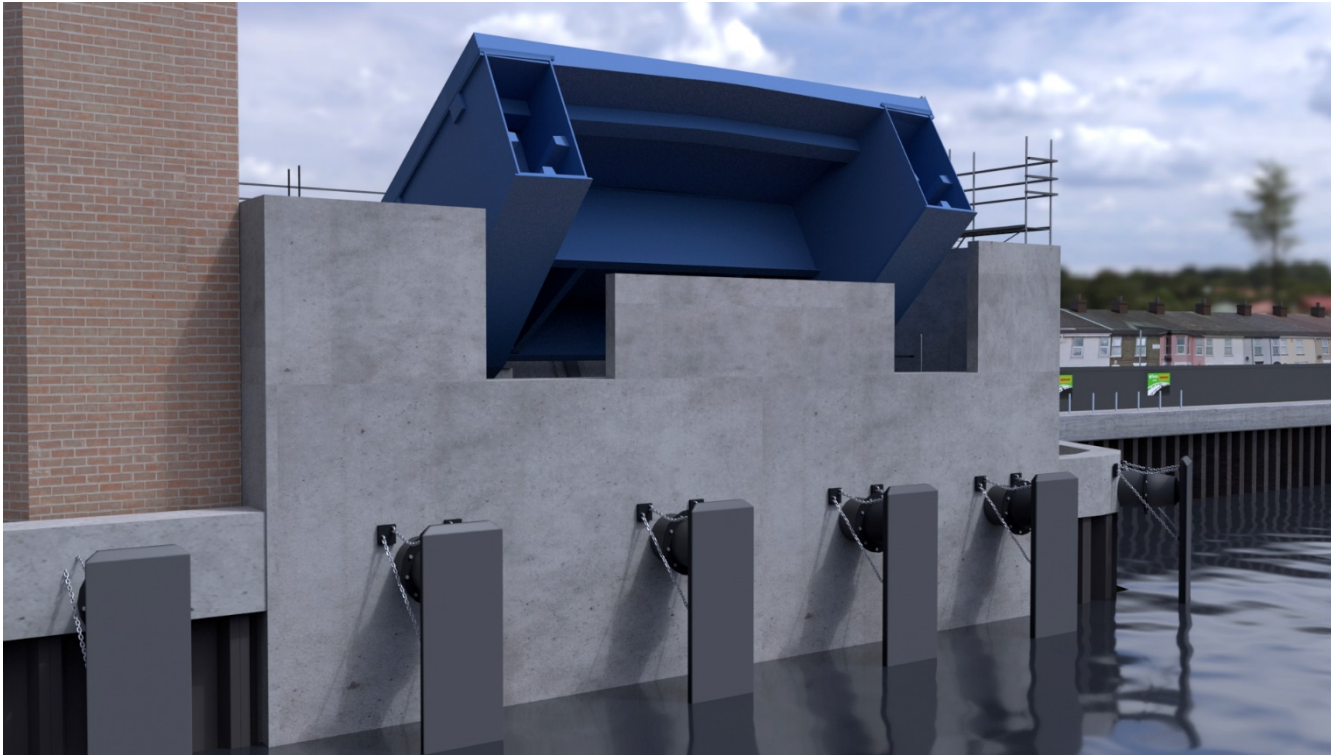
Great Yarmouth 3rd River Crossing – Bridge deck installation works

Onsite installation of rear counterweight sections



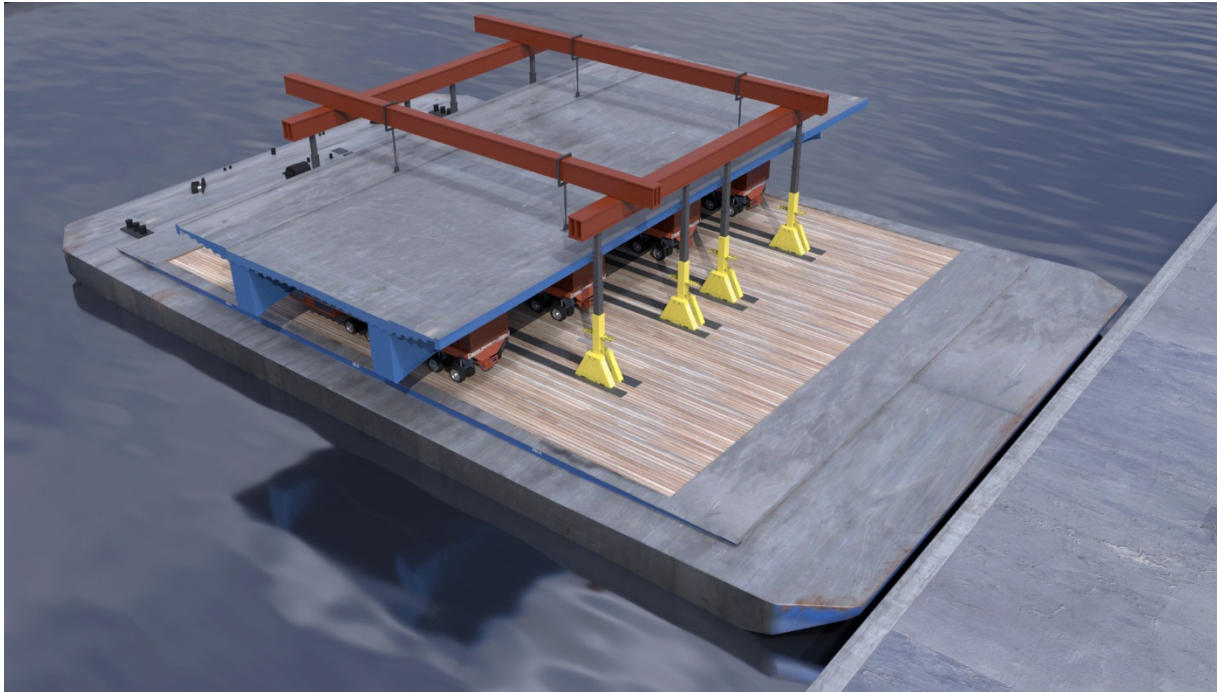
Great Yarmouth 3rd River Crossing – Bridge deck installation works

Commissioning of rear counterweight sections



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Transfer of central span sections



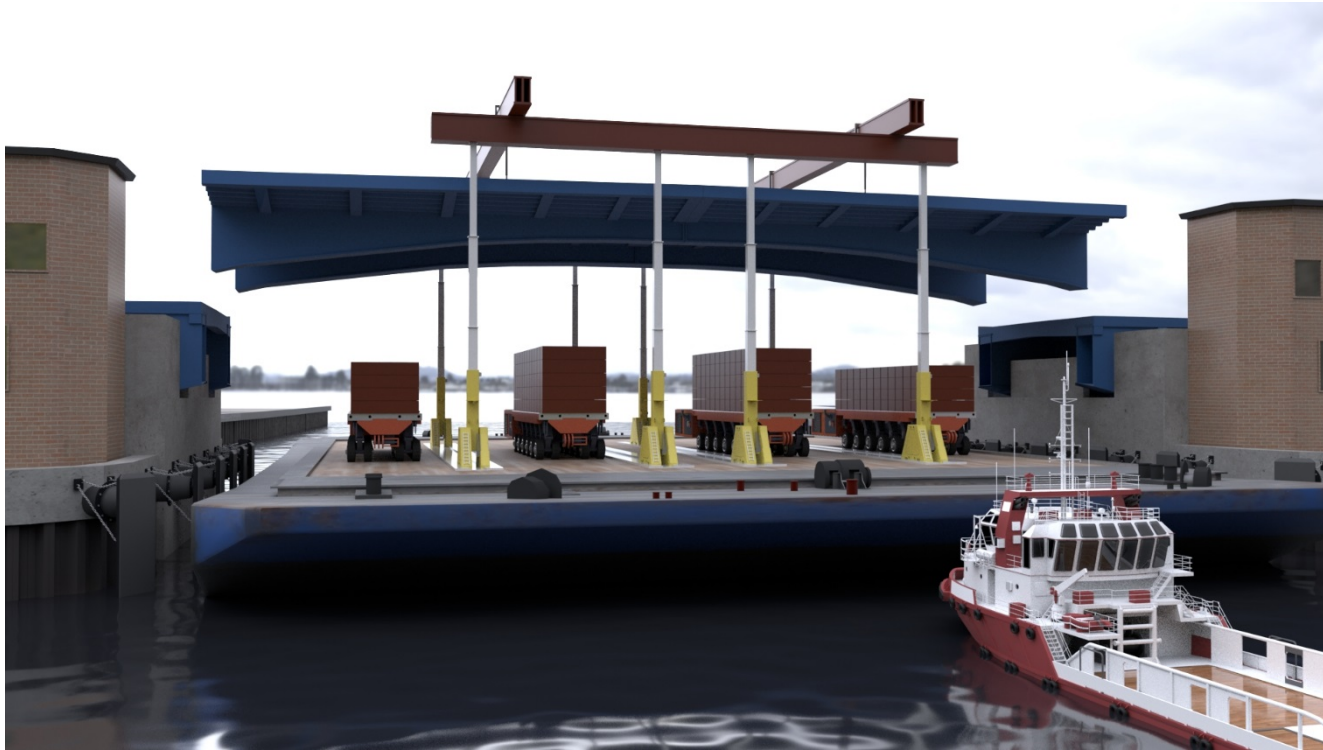
Great Yarmouth 3rd River Crossing – Bridge deck installation works

Transfer of central span sections



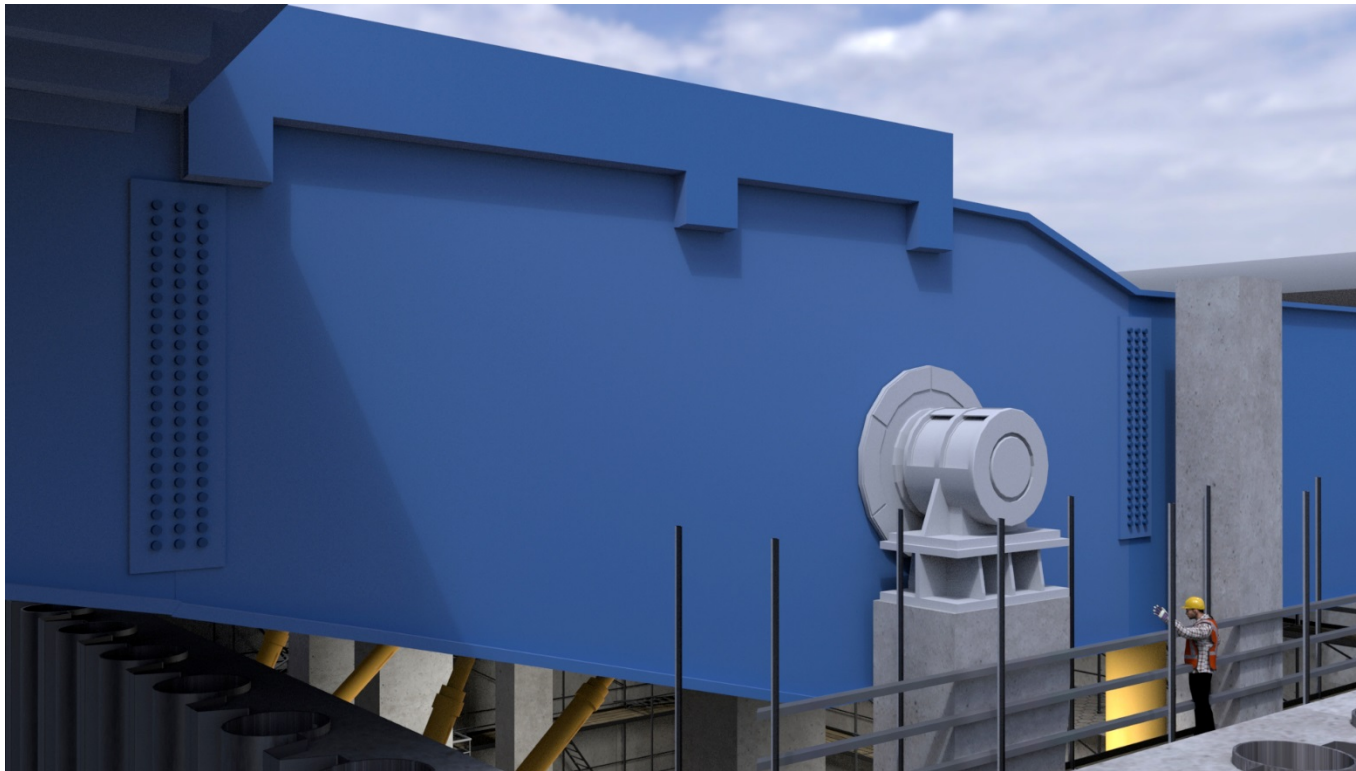
Great Yarmouth 3rd River Crossing – Bridge deck installation works

Lifting and installation of central sections.



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Bolted splices connections



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Commissioning/testing of bridge.



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Operational Bridge



Great Yarmouth 3rd River Crossing – Bridge deck installation works

Operational Bridge

