Concrete evidence of progress

The final stage in the completion of the new bridge’s foundations will begin this Spring. Here, FCBC Senior Materials Engineer, John McBay outlines some of the challenges involved in carrying out one of the largest underwater concrete pour jobs ever seen in Europe.

The route which the new bridge will take involved the construction of various sheet piled cofferdams which help form the foundations of the bridges towers and piers. The biggest challenge will be with underwater concrete has been the winter conditions of the past few months. At the end of last year, a specially designed concrete batching plant was constructed on one of the rocky islands. The plan is to convey the concrete as needed, making it one of the most modern in the UK. The concrete will be transported here before being shipped out to the middle of the Forth in a continuous operation which, at its peak, will involve up to 100 people.

In operations of this sort, you only get one chance to get everything right. That's why we are carrying out extensive advance trials in our underwater laboratory to ensure exactly the right mix and consistency of concrete. These trials are going well. When the operation starts next, the team will be required to deliver a total of 33,000 cubic metres of underwater concrete to the South Tower foundation, the plan being to complete, the concrete will not be visible below sea level. As the concrete level rises, the seawater will mix with the seawater inside the caissons. Careful management of the plant and on-site procedures will be required to deliver a total of 33,000 cubic metres of underwater concrete to the South Tower foundation, the plan being to complete, the concrete will not be visible below sea level. As the concrete level rises, the seawater will mix with the seawater inside the caissons. Careful management of the plant and on-site procedures will be required to ensure an even spread. The pipe is withdrawn upwards as the concrete rises. At this stage, the concrete mix is close to the capacity of 72 cubic metres.

What does the pour involve?

The pour involves everything from the background of the FRC project to the technical challenges involved in its construction and the measures being put in place to protect the marine and coastal environment and the local wildlife. Also on display are models of the bridge with new road building being carried out to it. With the existing network to the south and other related materials will be included such as each site-specific assembly from the skilful and cross-teams of all important stoppages which will connect the bridge road decks to the towers. In addition, modern radio-controlled equipment will provide information to enhance the permanent exhibition.

Q&A

A view of the FCBC concrete batching plant, Rosyth

Q: What is the purpose of the CEC?
A: It serves two principal functions. Firstly, it is the main contact point for the public in relation to any queries or to obtain information relating to the project itself from the board of members of the project team. Secondly, it provides a large exhibition space and interpretative material for schools groups, such as schools and colleges, can plan full-day programmes and can see the permanent exhibition which will update regularly as construction progresses. From this month, the CEC will also become home to the Traffic Scotland Control Centre from where road conditions can be monitored and the variable message signs on motorways and high-level bridge work can be controlled.

Q: Is the CEC available for private hire?
A: Because the CEC is a working office 24 hours a day, seven days a week, it is not at all. It is a reflection of the scale of the project and the level of public interest in it that we felt a dedicated exhibition space was needed. The CEC represents a great opportunity to showcase this amazing construction project and help the public understand what is involved in the bridge project. From 9am to 6pm, the public can visit the CEC, which houses an exhibition where you can see three iconic bridges and learn about the challenges involved in their construction. The CEC will also become home to the Traffic Scotland Control Centre from where road conditions can be monitored and the variable message signs on motorways and high-level bridge work can be controlled.

Q: What is the CEC project update?
A: The CEC project update is an ongoing project to date on the Forth Replacement Crossing project. We are arranging a series of regular Open Days which will be run from 10am till 4pm. We are arranging a series of regular Open Days which will be run from 10am till 4pm. From this month, the CEC will also become home to the Traffic Scotland Control Centre from where road conditions can be monitored and the variable message signs on motorways and high-level bridge work can be controlled.
What’s in a name?

The search for an official name for the bridge has captured the public’s imagination in a big way. During the 6 weeks, development work phase which ended on 31 January, as many as 9,000 suggestions were received by telephone. Over 1,000 separate concepts were received from people of all ages who have now tasted drawing with a chalk or marker which will form a public vote in early Spring. Meanwhile, nearly 200 schools have entered a closed competition to win an exhibition of the site next year and the opening ceremony in 2016.

Public briefings

On Monday 18 February, the FRC Liaison Team is starting a series of public briefings which will be continued as construction progresses. Details are on our website.

We have also had two public briefings in the period ahead which might be of interest:

School visit

Pupils from Fife schools, including Hillfield Swifts Junior Football Club, St Michael’s Primary School and Scotsguards Colonel’s Primary School in Fife will be visiting the new bridge to see their artwork featured in public spaces and receive cheques to the value of £500 for their school.

It’s working well

The Scottish winter has thrown at us all its usual challenges but this hasn’t derailed the Forth Replacement Crossing from delivering some key elements of the project ahead of schedule.

On Monday 18 February, FRC Contractors have completed the installation of three sets of underwater concrete plugs in the caissons at East Burntisland.

The work was completed ahead of schedule (see p 3). The improvement works involved 98 days for the M90 and 49 days for the M9. This is faster than expected and is also considerably better than the original £100,000 cost estimate of specialist underwater concrete works – one of the biggest non-stop underwater concrete jobs ever seen in the UK. Logistics planning and concrete pre-testing for the operation are at an advanced stage and a dedicated underwater concrete batching plant has been established on the site. Final firefighting tests have been completed.

In the last week, a site visit was made by the contractors to inspect the new bridge and the technical challenges involved in coordinating its construction with the works around the Ferrytoll junction in Fife.

• modifications to existing structures and elements of the project ahead of schedule.
• installation of 17 gantries which form the Intelligent Transport Systems (ITS) across the FRC corridor from Halbeath to the west of South Queensferry.
• construction of a new bridge structure
• completion of a new road bridge over the River Almond
• installation of 400 underwater concrete plugs into the caissons
• construction of a deep cut-off wall in the estuary. In the period ahead, we will continue to deliver the key elements of the project that are committed to completing before the end of 31 January, 2013.

In 2013, Transport Scotland will deliver the full benefits of ITS across the FRC corridor. ITS uses overhead gantry-mounted equipment to assist in the long-term management of traffic flow, by improving traffic conditions at peak times and reducing travel time at any time of day. The system is managed by staff at the Traffic Scotland Control Centre in Edinburgh.

In excess of 400,000 man hours were put into the FRC project. This has been a significant drop in the levels of risk associated with the construction of the new bridge. As a result, this has been a significant drop in the levels of risk associated with the construction of the new bridge. As a result, the Scottish Transport Minister, Keith Brown MSP, has announced that the Forth Road Bridge will come under the control of Transport Scotland in the future.

Many of the veterans hadn’t seen each other for many years, so it was a chance to catch up on old friends as well make new ones. FRC hopes to host such events in the year to come.

Forth Bridge Roadside veterans’ visit

On 1st March, we welcomed 40 veterans from the Forth Road Bridge construction project of 1932 to a special visit to the site in conjunction with the Scottish Transport Minister, Keith Brown MSP. The veterans took the opportunity to march through the temporary road works that were built by their compatriots all those years ago.

On this occasion, we were delighted to welcome the veterans to the Forth Replacement Crossing site as a special event. Our thanks to all the staff and contractors who helped organize this event, including Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steve Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager, Steven Brown, Manager.

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Public briefings and new Queenferry Junction

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