As work gets underway on the construction of the bridge's three towers, the Section Manager for Foundations & Towers, describes the processes and technical challenges which lie ahead.

Over the last five weeks, the massive operation to pour underwater concrete into the Central Tower caisson and the North and South Tower caissons was successfully completed (see Project News on page 2). This milestone meant that work could now continue on the extensive concrete bases for the bridge's three towers. The caissons were sunk into the seabed during the summer.

Towering above the Forth

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Temporary, but vital for success

The term “temporary works” is not well understood outside the construction industry. We talk to Neil Robinson, FCBC Temporary Works Co-ordinator for Foundations & Towers, to find out why the work of his team is so important to the success of the Forth Replacement Crossing project.

Neil Robinson, FCBC Temporary Works Co-ordinator for Foundations & Towers, explains why the work of his team is so important to the success of the Forth Replacement Crossing project.

What are temporary works?

Temporary works cover a wide range of construction works, those which make the construction of the permanent works (ie. the new bridge itself and the connecting road/bridge) possible. Every construction project – from the Pyramids to the new Queensferry Crossing – contains temporary works. Substituting a good example. It enables the people and materials required to construct a lift or a house to get to where they are needed without any complications, nothing ever would get built!

What are the main temporary works?

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Concrete evidence of progress

In August and September, work on the foundations of the new bridge’s three towers reached an important milestone.

Inside the North and South Tower cellars, the operation to create the enormous concrete “plugs” on which the reinforced concrete towers will rest was completed successfully. In addition, the foundations and footings of the three sections of the Central Tower were now complete. This means that we are now “out of the water” and beginning to build upwards.

To previous news, we have now written about the first concrete pour at the site and the fact that the main concrete pour of the Central Tower is now under way. This record-breaking 24/7 task took just over 15 days and involved over 1,000 people and 15,000 tonnes of raw materials.

Work is now continuing apace on the north and south approach bridges from the south, comprising the major elements of the foundations out in the Forth Estuary. These operations have gone very smoothly and the pace is now accelerating to complete the entire structures in a timely manner.

The foundations work is now assisting the work on the superstructure. Inside the North and South Tower caissons, the operation to create the huge concrete plugs inside the tower foundations got underway in late October with 7,400m³ being successfully poured into the North Tower caisson.

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A World Record for the Queensferry Crossing!

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This was followed in early August by a 4,000m³ concrete pour into the Superstructure cofferdams. This set a new world record for the Queensferry Crossing project, rivalled only by the Tokyo Skytree in Japan. The concrete was poured into the South Tower caisson to form a plug over a metre high, this being the tallest ever poured in the world. This represents the first world record since construction work began in Forth South.

The record-breaking 24/7 task took just over 15 days and involved over 1,000 people and 15,000 tonnes of raw materials. A plug of this size has never been poured before.

The underwater concrete pour operation has gone without a hitch so far: no major setbacks or delays. The many hours of preparation carried out by the team. This achievement is a credit to the skill and expertise involved. It is a huge milestone for the project because it means that the blue sea and weather conditions below the waves to the upward construction of the three towers above the waves of the Firth of Forth.

The Foundations team have achieved a real milestone in the project when the concrete pour into the South Tower caisson was completed.

M9 Junction 1a turns green

With some 70,000 trees now planted and grass beginning to establish itself, work to complete the M9 Junction is now underway. The new M9 Junction 1a is being built in stages, with the central section of the road opened to traffic last month. This is a major milestone in the project and the community has already benefitted from the improved access to the new road network.

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