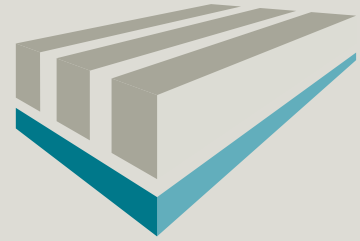


BANAGHER

PRECAST CONCRETE



Civil | Rail | Buildings | Stadia | Marine | Energy | MSCP's | Bespoke Precast



Silvertown Tunnel, London

#ChallengeUs

Precast Tunnelling Solutions



www.banagherprecast.com

Reinforced & Steel Fibre Segments

PRECAST TUNNELLING SOLUTIONS

With manufacturing facilities in the UK & Ireland Banagher Precast Concrete has been providing the construction industry with prestressed and reinforced precast solutions for over 70 years.

Our team of experts thrive on value engineering with the aim of providing the highest quality precast while reducing costs, optimising programmes and reducing carbon footprint.

270+

Highly Skilled
Employees



Innovative & Industry
Respected Team of
Design Engineers

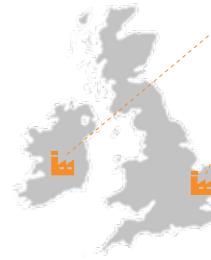
150+

Years Combined Experience

Capacity

2.5 km

Bridge Beams per week



2

Manufacturing
Plants, IE & UK



Tried & Tested

Transport Partners



MANUFACTURING

- Reinforced or steel fibre carbon conscious segments.
- Cut & cover, bridge beams, approach structures, etc.
- Strong and experienced supply chain.
- Concrete mix design experts - high durability low carbon solutions.
- Fixed mould system for enhanced accuracy and a superior product.
- Our robust quality control procedures achieve precise specifications and tolerances.
- CARES approved steel reinforcement is cut, bent and fixed on site.
- Welding in accordance with ISO 17660.
- Automated rail system from batching plant to mould - controlled filling and continuous production.
- Data Management System tailored to project requirements.

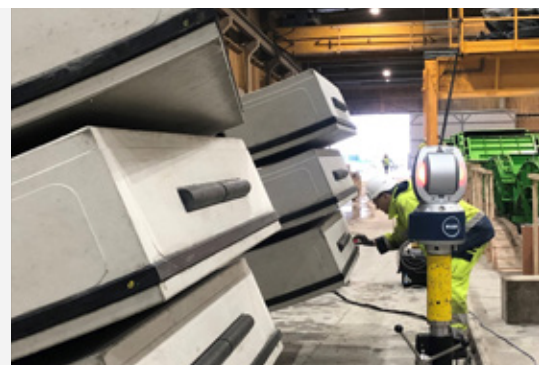


- Manufacturing, curing, gasket fitting in same production hall ensures consistent quality.
- Vacuum lifters and turning equipment reduce risk of damage and eliminate additional lifting points.
- Highly experienced segment manufacturing team – dedicated to a project for the duration.
- Ample capacity for segment storage at our 50-acre site with over 70 gantry cranes in operation.
- Proven track record with high volume projects.
- Trial fits at our factory to ensure right-first-time.
- ISO 9001 accreditation - manufacture to European and British standard.

INDEPENDENTLY ACCREDITED ONSITE LABORATORY

- In 2022 we received INAB accreditation ISO 17025 for our state of the art onsite testing laboratory to carry out sampling and testing such as chloride migration, beam flexure, tensile splitting, water penetration and compressive strength.
- Our INAB certification is UKAS equivalent and recognised eliminating the need to outsource to external labs.

Inhouse testing offers our clients cost and programme savings while ensuring we achieve the highest quality standards at all times.



FIRE TESTING

- Fire Testing – for the Silvertown Tunnel special test segments were manufactured, each equipped with 50 temperature sensors and tested at Efectis NL
- Segments are exposed to a temperature of 1350°C for a period of 2 hours in order to meet the criteria: spalling must be less than 30 mm on average and the temperature at a depth of 100 mm must not exceed the maximum value of 380°C.
- The segments were deemed to withstand exposure represented by RWS time-temperature curve in accordance with Efectis report no 2008-Efectis-R0695.



EXPERIENCE



SILVERTOWN TUNNEL, LONDON

Client: Riverlinx JV (Ferrovial, BAM, SK Ecoplant)
Owner: Transport for London

- Largest TBM in the UK at 11.91 metres in diameter
- 1.4 km twin bore tunnel under Thames river London
- 1,140 rings, each segment 2 m wide and 400 mm deep
- 3,510 reinforced segments
- 6,750 steel fibre carbon conscious segments
- Polypropylene fibre enhanced mix for fire resistance
- Segments tested to a temperature of 1350°C
- In areas of high risk sulphate attack a epoxy based coating is applied
- Special cross-passage segments to remove propping
- Prestressed Banagher Double-tees for onsite multi-level car park
- Prestressed bridge beams for approach structures

DUBLIN PORT TUNNEL

Client: NMI JV (Nishimatsu, Mowlem, Irishenco)
Owner: Dublin City Council

- Largest tunnel undertaken in Ireland to date
- Twin bore tunnel of 4.5 km (9 km)
- 10.84 m inside diameter
- 3,037 Precast Rings
- 6 Segments per ring – 18,222 Segments
- Trial assembly at factory to ensure right-first-time
- Storage of segments at our plant in a dedicated area serviced by gantries and forklifts for efficiency.





CARBON CONSCIOUS CONCRETE



- Manufacturing segments in a factory setting not only achieves consistent quality it also negates the requirement to set up on site – requiring less mobilisation of plant and people while eradicating the waste associated with creating and dismantling temporary factories.
- Our steel fibre segments eliminate the requirement for steel cages hence greatly reducing the cost and CO² content of units.
- Our concrete mix can include up to 40% Ground Granulated Blasted Furnace Slag (GGBS) which is a recycled by-product of steel and has a zero carbon rating – offering an automatic 40% carbon saving.
- Production halls are insulated, maturity computers measure strength gain and only light covers over the precast moulds are required for moisture loss and to gain strengths, this combination eliminates the requirement for energy hungry processes such as heat or steam curing.

- In 2021 we installed 1,000 PV solar panels over our production halls which produces 30% - 40% of our energy requirements, remaining power is from another renewable source - Airtricity, ensuring net zero energy consumption manufacturing.
- As part of our ongoing CRS campaign we have already planted 6.5 acres trees and unique to the Silvertown Tunnel project we have committed to planting 1 hardwood tree for every precast ring manufactured. A hardwood tree absorbs approximately 20 kgs of carbon per year and we will plant 1,200 more trees which will absorb 24 tonnes of carbon annually.
- Banagher are collaborating with Irish & UK universities and on European research projects which are seeking the development of sustainable, low carbon precast concrete infrastructure, for example ReSHEALience & Eirocrete.





PRECAST SOLUTIONS

We offer a wide range of prestressed and reinforced precast, we are always on hand to work with clients

for bespoke solutions:

- Tunnel segments
- Cut & cover tunnels
- Bridge beams
- Bridge decks
- Portals & arches
- Retaining walls
- Box culverts
- Banagher Double-tees
- Banagher Z-Panels



BANAGHER

PRECAST CONCRETE



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