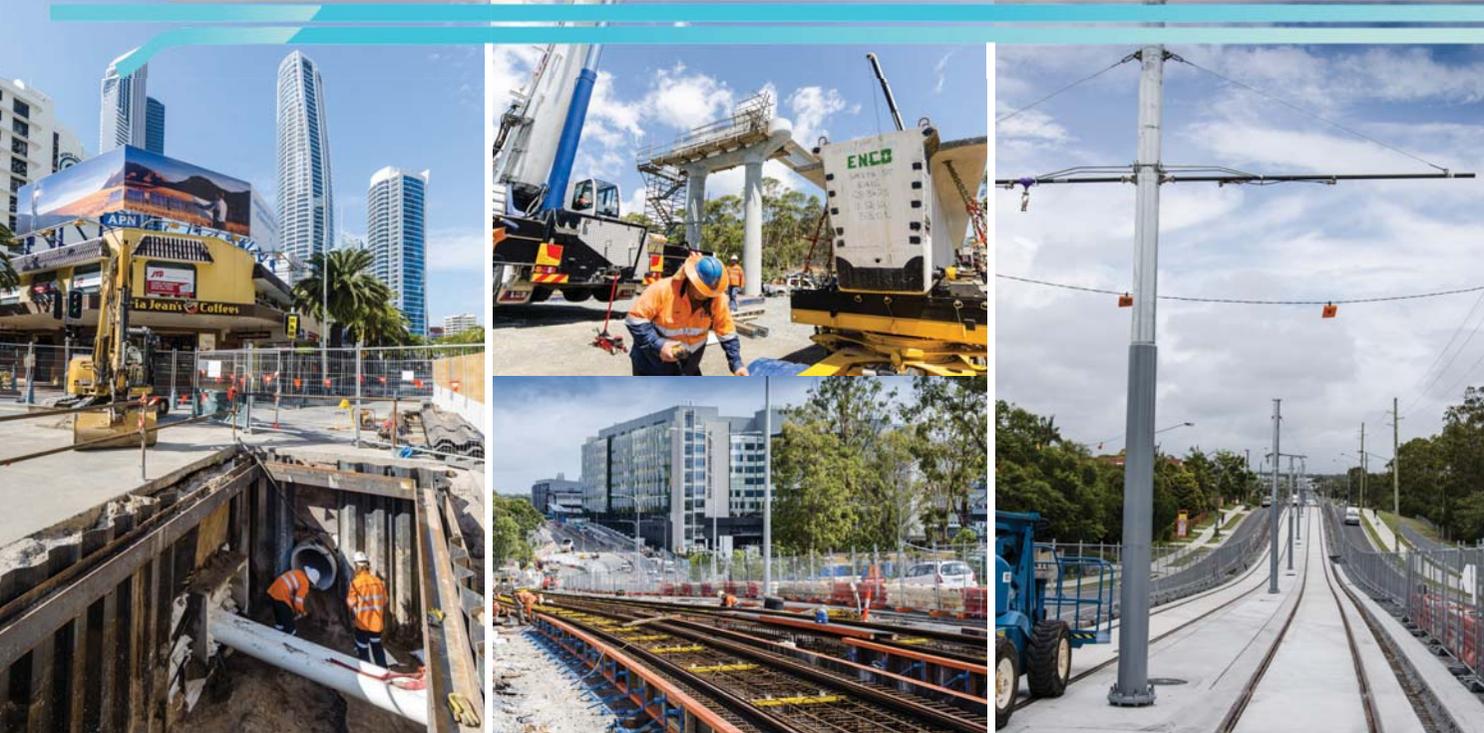


Construction Services

FACT SHEET JUNE 2013



Building a world-class transport system like the Gold Coast light rail in an established city involves a number of different construction processes, each requiring expert knowledge and meticulous planning.

Underground Services

Beneath the roads and footpaths of any modern city are a large number of underground services such as gas pipes, water and sewerage mains, telecommunications and electricity cables.

A major part of the Gold Coast light rail project is upgrading and relocating these essential services to future proof the city. It is one of the largest and most complex upgrades currently being undertaken in Australia. Some areas are more complex than others and require cooperation from multiple service providers, such as Telstra and Energex.

The Gold Coast light rail project will upgrade and relocate:

- Eight kilometres of storm water drainage, with pipes ranging from 30 centimetres

(a school ruler), to 1.8 metres (an average man's height), in diameter.

- 64 kilometres of telecommunications cables.
- More than 50 kilometres of electricity cables.
- Seven kilometres of water and sewerage pits.

Civils

On the Gold Coast light rail project, civil construction refers to earthworks, drainage, road works, structures such as bridges, foundations and buildings including the stations and the Depot.

Once the underground services are complete, civil construction in the area can begin. This typically involves drainage installation, reconstructing the road base for the additional weight of the light rail vehicles, and installing kerb and footpaths.

Preparation for track laying occurs along with these works, including installation of conduits beneath the track form.

GoldLinQ will deliver the following civil works as part of the light rail project:

- The Nerang River Light Rail Vehicle (LRV) Bridge, which is 375 metres long or nearly one and a half lengths of the Titanic.
- The Smith Street Bridge at 800 metres is just a bit longer than Brisbane's Story Bridge.
- Over 30,000 cubic metres of track form concrete equal to 30 Olympic swimming pools full of concrete.
- Over 30,000 tonnes of asphalt for road reconstruction, that's around the weight of four Eiffel Towers.

Track Laying

2,800 tonnes of rail will be laid along the 13-kilometre light rail corridor, equating to 55-kilometres of single track which will be used for two lines of light rail, north and south-bound.

The rail comes in 18-metre segments and is lifted into place by crane. The rail is fitted with a noise and vibration reducing rubber boot and laid on steel mesh reinforcement. The pieces of rail are laid end to end and precision aligned within 2mm.

Once welding is complete, concrete is poured and levelled. The top level of the rail is required to be set six millimetres above the concrete to allow for the rail to be worn down over time and to prevent the tram's wheels from rubbing on the concrete.

Station Construction

Once the track is laid, the construction of the stations commence. This includes lifting and moving into place steel columns and beams using cranes and other machinery. Sixteen stations will be constructed along the corridor at sites determined by the State Government in consultation with the Gold Coast community.

The construction and fit out of the largest station on the light rail project, the Gold Coast University Hospital Station, involves a more detailed program including the completion of the sub-structure. Footing, pre-cast panels and steel frames will be erected with cranes inside before the track is laid through the centre. Once the track is complete the fit-out will be finalised including the installation of escalators, lifts, ceiling and station platform.

Overhead Line Equipment

With the structure of the station in place, the overhead line equipment will be installed. This involves installation of overhead line steel poles and stringing of over head lines, called catenary. There will be more than 30 kilometres of catenary used across the corridor, weighing more than 30 tonnes.

Landscaping and Reinstatement

Landscaping and installation of hard and soft scapes occurs after the overhead line equipment is established. This includes placement of trees, shrubs and retaining walls. Land used on a temporary basis for construction is reinstated in a like-for-like state and returned to the property owner.

Testing and Commissioning

Once all construction is complete, signals and conduits are tested to ensure they are functioning correctly. Following this, the tram is put on the tracks and is driven at slow speeds to check all systems and functions are operating correctly and ensure it is properly integrated into the overall light rail system. Testing and commissioning is the final stage before the Gold Coast light rail will be open to the public.



Workers laying tracks at Main Beach in the lead up to the GC600 2012.

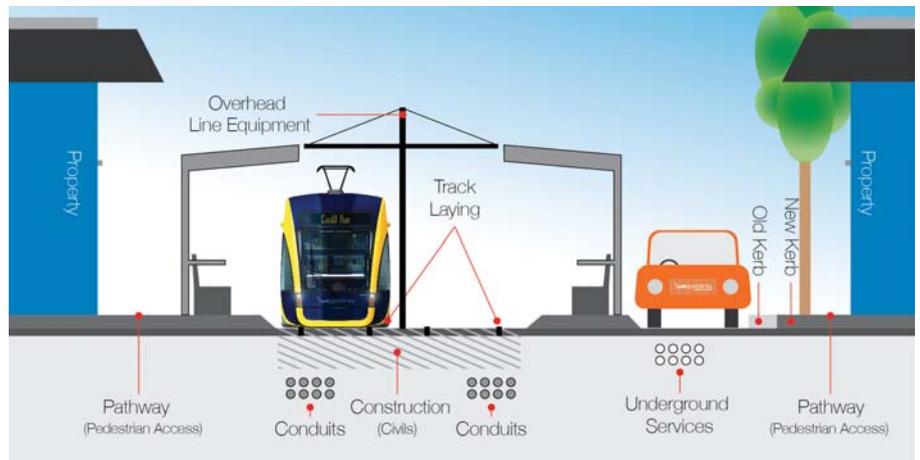


Diagram of light rail corridor layout and phases of construction.



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Gold Coast Light Rail

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