



NEWMARKET CONNECTION VIADUCT REPLACEMENT PROJECT NEWSLETTER

ISSUE 01 / JULY 2009

Introducing Newmarket Connection

Innovative in its design, construction and delivery, the Newmarket Connection project will see the existing Newmarket Viaduct replaced by a wider, stronger and safer structure. This new bridge will not only enhance motorway traffic flow, but improve local pedestrian links and facilitate the opportunity to breathe life back into the southern end of Newmarket.

Welcome to the first of our quarterly project newsletters, aimed at keeping you up to date with progress and upcoming activity on the Newmarket Connection project. So what better way to start, than with a brief introduction ...

With over 160,000 vehicles passing across it daily, the stretch of motorway between Gillies Ave and Greenlane represents a critical link in not just Auckland's, but the nation's road network. And at the very heart of this link stands the Newmarket Viaduct.

A pioneering piece of infrastructure when completed in 1965, the viaduct is now showing its age, particularly as it struggles to release peak hour bottlenecks. Frustrations also exist at ground level, with constraints associated with the present structure limiting Newmarket's growth to the south.

The decision to build an entirely new structure - rather than attempt to retrofit the existing one - therefore reflects the significant benefits a new



ALL TOGETHER NOW The NGA Newmarket team, pictured here at a pre-dawn celebration for the first foundation pour, comprises a staff and workforce of over 120. As an Alliance, all work together as one team, taking collective responsibility for the success of the project.

bridge will have for both the road user and the surrounding community.

The conundrum of how to replace the viaduct without bringing the city to a grinding halt demanded a highly innovative solution. A staged approach to construction and deconstruction will not only achieve this, but allow for the completion of a new, wider (four-lane) southbound motorway in time for the Rugby World Cup 2011. The project will be fully completed by the end of 2012.

Stay informed

If you live, work or even visit Auckland, the Newmarket Connection project is likely to affect you to some degree. To ensure you are kept up to date with regular updates and travel advice, register your details at www.nzta.govt.nz/newmarketconnection

Newmarket Connection: stage by stage

A staged approach to construction / deconstruction will allow the NZ Transport Agency to keep the motorway operational throughout the life of the project. Stage 1 will see the new four-lane southbound carriageway built immediately to the north-eastern (harbour) side of the existing viaduct. Once the southbound traffic has been moved to the new structure and the existing southbound viaduct deconstructed, the new northbound lanes will be constructed in this newly-vacated space. This will ultimately form a new 'twinned' bridge, standing some 13 metres to the north-east of where the original has stood for the last 45 years.

Stage 1

New southbound bridge is built on the north-eastern side of the existing viaduct: widths reduced on existing lanes; temporary lighting added.



New southbound carriageway opens: 3 lanes in use while tie-ins for 4th lane at north and south approaches are constructed.



4th southbound lane opens; expanded road layout continues beyond viaduct to Greenlane.



Stage 2

Old southbound viaduct is deconstructed.



Stage 3

New northbound bridge is built in place of the old southbound viaduct and twinned to southbound bridge.



Stage 4

Northbound traffic moves to new carriageway; old northbound lanes deconstructed to reveal new seven-lane Newmarket Viaduct.



Viaduct completed to final configuration as northbound lanes and shoulder widened.



To facilitate Stage 1, which will see us working next to the live motorway, we will be slightly altering the southbound lane configuration across the viaduct. This process will begin in August at the Gillies Ave (northern) end of the viaduct. **Please drive with caution and observe the safety messages in operation.**

Newmarket Connection: progress so far

The construction stage of the project was officially launched at a stone-breaking ceremony at the end of last year. Since then project activity around Newmarket has become steadily more visible.

Behind the grey site hoardings, excavation work on the new pier (column) foundations is well underway – with the first piers also now visibly rising. While all the piers will look identical, their foundations are anything but, as they have to be adapted to suit Newmarket's variable ground conditions, created by the original lava flows from Mt Hobson (Remuwera) and Mt Eden (Maungawhau).

Fabrication of the bridge segments has already commenced at a purpose-built pre-cast yard out at East Tamaki. The segments will be stored at the yard until needed then transported to site at off peak times.

All in all, 468 segments will be joined together to form the new Newmarket Viaduct. The construction method will require the use of a 140-metre long truss that will sit up to 20 metres above the

height of the bridge, and therefore create a striking, if temporary, addition to the Auckland skyline. The truss itself will begin to be erected in September, to be operational by the beginning of next year – so much more on this in the next issue of the Newmarket Connection newsletter!

To accommodate the alignment of the new viaduct, work has already begun at both ends – at the off- and on-ramps at Gillies Ave and St Marks Rd.

All major work around Gillies Ave will take place at night to ensure we can keep this key entry point into Newmarket open during peak demand periods.

At the St Marks Road end of the project, in addition to work on the on-ramp, a steel support system has been installed on the piers above the rail line (see photo). The supports are predominantly needed to

accommodate the extra stresses and loads associated with the construction and deconstruction cycles, however they have been installed early to enhance the viaduct's overall seismic capacity. Individual supports will ultimately be installed on all the piers of the existing viaduct to ensure stability throughout the deconstruction process.



KEEPING AUCKLAND MOVING The steel supports were installed at Easter, when the rail line was closed, to avoid causing further disruption to Auckland's transport network.



FROM GENERATION TO GENERATION Bryden McKinnell, Resident Engineer on the original viaduct project, and his Construction Manager, John Built, are flanked by the Newmarket Connection project's Construction Manager and Project Manager, Patrick Arnold and Ian Harbeck (l-r).

Celebrating the first foundation pour

On Friday June 5, the project team came together to celebrate a key construction milestone: the day of the first foundation pour.

After months of establishment, exploration and preparatory work, the first foundation pour offered cause for celebration. The occasion was marked with a dawn ceremony and the burial of the project's foundation stone - a coarse adze head shaped from a local kerbstone. The foundation stone's twin is on display at the project's visitor centre.

The duty of lowering the foundation stone into place was entrusted to two distinguished guests. John Built and Bryden McKinnell were respectively the Ministry of Works' Resident Engineer and Construction Manager on the original viaduct project, completed back in 1965.

According to Mr McKinnell, the construction project was viewed as being every bit as complex and innovative as the one now replacing it.

"Although it was the biggest bridge to be built in New Zealand at that time, it wasn't so much the size of the bridge but the whole concept of using pre-stressed concrete and building by cantilever that set it apart. It was also the first major bridge to be designed by computer," he commented.

For the most recent photos from around the Newmarket Connection project site:
www.nzta.govt.nz/newmarketconnection

Project Team: NGA Newmarket

The Newmarket Connection project is being delivered for the NZTA by NGA Newmarket - the second generation of the Alliance that successfully delivered the Northern Gateway project, north of Auckland, on budget and ahead of schedule.

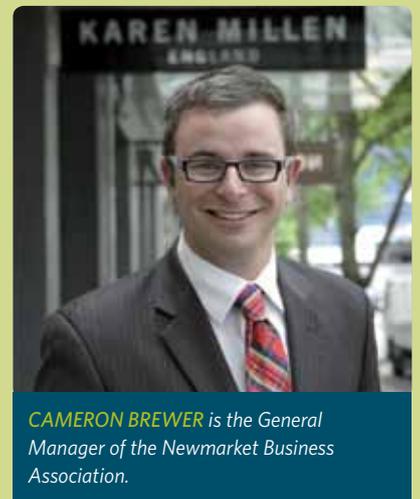
NGA Newmarket comprises: NZTA, Fulton Hogan, Leighton Contractors, VSL New Zealand, Beca, URS New Zealand, Tonkin & Taylor and Boffa Miskell.

Guest columnist

From our point of view, the Newmarket Connection project is going well so far. I have to say we have been impressed with the level of communication and community engagement from NZTA.

No doubt it's a far cry from when the original viaduct and State Highway 1 carved its way through the likes of Newmarket and Remuera in the mid-1960s. Not only did the then transport authority bulldoze a lot of homes and some Newmarket businesses in the name of progress, but Auckland Grammar's number one rugby field, which sat in the valley between Grammar and St Peter's, had to be surrendered and tar-sealed over. Forty-five years ago things might have been done at greater speed, with no RMA or the likes in sight, but I have to say these days placing a greater emphasis on working alongside communities makes for a better project.

As a business community we've long wanted this viaduct replacement project to be kicked off and completed. The sooner it's done, the sooner that end of Broadway can develop to its full potential. Up until now a lot of those businesses under and around the viaduct have effectively been on death row so naturally there's been little private sector investment. Post 2012, that end of Broadway's going to really pick up speed. Bring it on!



CAMERON BREWER is the General Manager of the Newmarket Business Association.



OPEN FOR YOUR BUSINESS In addition to providing up to date information on the project, the Newmarket Connection visitor centre features a multi-purpose community room, ideal for meetings, presentations or small functions. The stone adze head on display in the front room is the twin of the project's foundation stone.



Coming up in the next Newmarket Connection newsletter ...

- Urban design: How the Newmarket Connection project will enhance pedestrian access and help breathe the new life into southern Newmarket.
- Introducing the Overhead Launching Gantry: the 700 tonne engineering marvel needed to construct the new viaduct and deconstruct the old one.
- Travel Demand Management: The project team's commitment to minimising their local and carbon footprint.

Visitor Centre: 5B Mahuru Street

- Located at the heart of the Newmarket Connection project, the project's Visitor Centre is part information office, part community resource.

The project's visitor centre has been designed to provide a mix of detailed and at-a-glance information on the project's background, design, progress and future programme - all through a variety of media.

The visitor centre is open to the public from Thursday to Saturday, and by appointment throughout the week for schools and community group visits.

In addition to showcasing project information, the facility incorporates a room that's ideal for a range of functions.

While we intend to use the space ourselves for special events, we would like to encourage community groups and local businesses to use the space for off-site meetings, presentations or get-togethers. All we ask is a gold-coin donation to the project's nominated charity.

Should you wish to find out more about this service, please contact the project's Communications Manager, Gez Johns, on gez.johns@nganewmarket.co.nz or call Gez on 021 399265.

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Stay informed

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New Zealand Government