



## Relocating the Rob Roy

Now that the buildings next to the Rob Roy Hotel (the Birdcage) have been demolished, Aucklanders are waiting to see exactly how this historic structure will be moved.

The hotel will be relocated. In August, the hotel will be relocated 40 metres up Franklin Road to make way for the construction of the tunnel's southern portal. When the tunnel is complete, the building will be moved back down the road to its original site.

The building is now being reinforced to keep the brick structure secure during the double move. A spin-off from this will be that the building is seismically strengthened for its future redevelopment.

When it is ready to be moved it will be placed on runway beams just below ground level. Additional structural bracing will be added at this stage to keep the building rigid.

Hydraulic arms will then push it gently and very slowly along the beams up the road, where temporary foundations will be ready for it. The operation is likely to take less than a day.

The Rob Roy relocation work is being undertaken by the Victoria Park Alliance team with Dunning Thornton Consultants, one of New Zealand's most experienced building moving specialists. The company has previously moved the historic Waihi goldmine pumphouse, the Museum Hotel to make room for Te Papa in Wellington and other heritage buildings in central Wellington to make way for the capital's inner city bypass.

In its final resting place, the old Rob Roy will become the focal point of a new public plaza. Urban design plans for the plaza are now being finalised.

## Iconic foot bridge to improve connectivity

A striking Warren and Mahoney designed foot bridge will be built over the motorway in St Marys Bay as part of the Victoria Park Tunnel project, and will restore the area's historic connection with the harbour.

The foot bridge 'lands' on the southern side of the motorway at the well used Jacobs Ladder staircase. On the northern side it will connect into Westhaven Drive.

An improved and extended path is also being created in this area. It will begin at Beaumont Street, go past the Victory Christian Church and Jacobs Ladder, along the St Marys Bay Reserve and end at Point Erin.

While the new foot bridge has been designed primarily for pedestrians, the path is expected to become a popular

route for both cyclists and walkers and a key connection between the residential areas of St Marys and Freemans Bays and the waterfront.

The foot bridge will be built in sections and put together off-site. Once the SH1 motorway widening through St Marys Bay has been completed, it will be lifted into position in two pieces.



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Creating work areas large enough for men and machinery to operate safely has also been a challenge, requiring traffic lanes on the motorway, Beaumont Street, Franklin Road and Victoria Street West to be moved temporarily.

Minimising the significant impacts of the project's 'enabling works' on traffic as well as the people who live and work nearby has required careful planning, says Victoria Park Alliance project manager John Burden. "This is a complex project, being constructed in a highly developed urban

environment. While some impacts are unavoidable we are committed to doing our utmost to minimise disruption."

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New Zealand Government



## Victoria Park Tunnel

June 2010

### Nine months on and look at the progress!

It's just nine months into the Victoria Park Tunnel project, with enabling works almost completed and tunnel construction started on schedule.

The tunnel project is being delivered by an alliance comprising the NZ Transport Agency, Fletcher Construction, Beca, Parsons Brinckerhoff and Higgins. The project team, with help from subcontractors, has rapidly expanded from a handful of staff to approximately 300 site and office workers. This number is set to increase to 450 later this year.

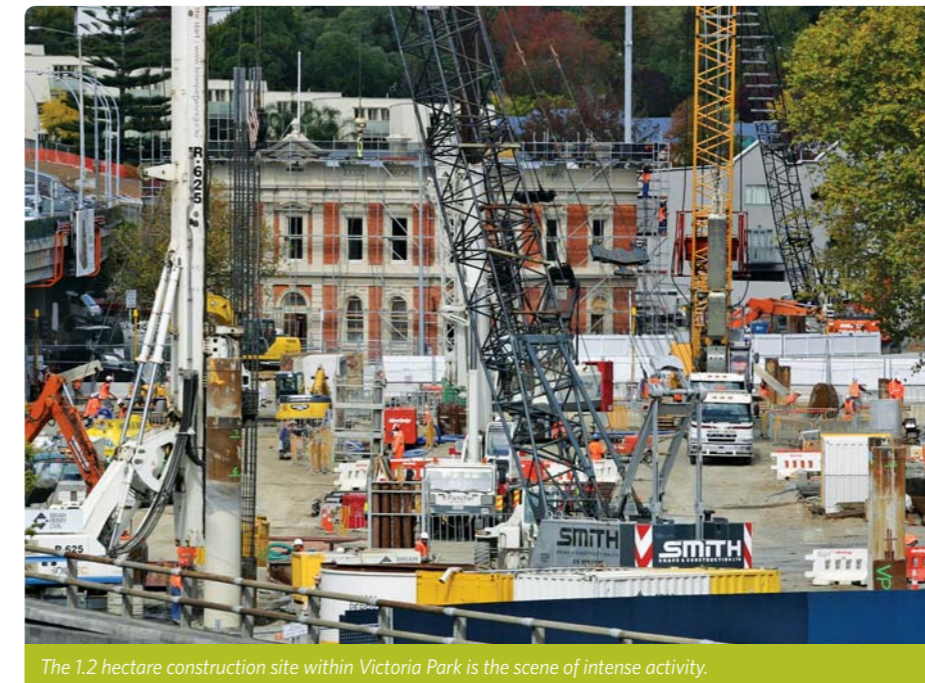
As the first of the Government's Roads of National Significance to begin construction, the \$340 million Victoria Park Tunnel will deliver shorter, safer journeys for more vehicles on the motorway between the

Auckland Harbour Bridge and Central Motorway Junction.

The NZ Transport Agency aims to have the tunnel structure completed by the time of the 2011 Rugby World Cup, and to have the entire project completed in mid-2012.

While most of the tunnel construction is taking place within Victoria Park, areas at either end present multiple challenges. A number of services has had to be relocated away from the tunnel's route. They include local water, stormwater, telecommunications, power, gas, and sewerage as well as critical regional assets such as the North Shore watermains and the international telecommunications cable servicing the CBD and connecting New Zealand to the rest of the world.

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The 1.2 hectare construction site within Victoria Park is the scene of intense activity.

### Milestones achieved

Over the past three months the Victoria Park Alliance has:

- Begun tunnel wall construction through Victoria Park
- Completed major traffic switches on Beaumont Street and at the Victoria Street West/Franklin Road intersection
- Placed the first five of 360 tunnel roof beams, on the section of tunnel that will run beneath Beaumont Street
- Begun building the walls of the tunnel approach between Wellington Street and the Victoria Park viaduct
- Completed the diversion of the North Shore No 1 Watermain away from the motorway corridor
- Commenced strengthening of the historic Rob Roy Hotel, ready for its moves up Franklin Road and back again.

### News Flash

The historic Campbell Free Kindergarten on Victoria Park will be restored by the Victoria Park Alliance. Under an agreement between Auckland City Council and NZTA, a portion of the building will be used to house electrical and communications equipment for the tunnel and the balance will become available for public use.

## Diggings reveal secrets of the past

Relics of different eras in the history of Freemans Bay are being uncovered as the Victoria Park Tunnel project progresses.

Archaeologists, who are on site during any digging to record finds, say most of the materials so far have been from the early 1900s although notable exceptions are some of the bottles and crockery remains discovered in the vicinity of the Rob Roy Hotel. Finds so far also include the remains of a seawall and timbers thought to be from jetties.

They say relics of earlier Maori and European activity in Freemans Bay are most likely to be found during deeper excavation for the tunnel over the next year, particularly as the digging reaches pre-reclamation levels.

Freemans Bay was a significant area of early European settlement and the reclaimed area occupied by Victoria Park is expected to contain structures that have survived beneath the fill.

Although nearby headlands were occupied by Maori in pre-European times, archaeologists think they are unlikely to find remains from this era. Protocols, developed with iwi, are in place for monitoring earthworks in the project area and recording any remains found.

The fill used for the reclamation is expected to yield artefacts and waste relating to the industrial and residential use of Freemans Bay and so far these expectations are being met. Rusted tools and machinery parts thought to be from the early 1900s are among the finds in excavations near Victoria Street West.



An old fire brick from Staffordshire in England was unearthed in Victoria Park. It would have been used in a kiln or furnace – possibly the former city destructor (now Victoria Park Market).

## A fishy tale: the Westhaven retaining wall

“Everyone involved in this job is so proud of it – they have a real sense of purpose. The quality of this work is so good it will set the standard for the rest of the job.” Construction manager André Raymond

One of the most visible Victoria Park Tunnel legacies will be a new retaining wall along Westhaven Drive. Used daily by boaties, joggers, dog-walkers and city commuters, scenic Westhaven Drive connects Aucklanders to the ‘sails’ the city is so proud of.

The new retaining wall has an abstract fish design that tells a story of the days when Westhaven Drive was yet to be claimed from the sea. It pays tribute to the harbour that sustained Maori living on nearby headlands for centuries.

The fish imagery came from sketches by Pita Turei of Ngati Paoa.

Pita says fish are symbolic of life and activity in the area and the life force of the sea (ki tai) in pre-European times. The symbolic fish is also represented in pacific tattoo art.

The repetitive abstract design on the retaining wall, developed by architects Boffa Miskell, represents fish chasing each other as a symbol of the food chain and the circle of life in the ocean.

To stay true to the origins of the area, only endemic plant species will be planted along the base of the retaining wall. Also, Maori names for local features will be etched onto the low motorway barriers through St Marys Bay. They include Te Oka, Te Routu O Ureia (Point Erin); Te Oneroa A Huatau (St Mary’s Bay); and Te To (Victory Church site).



The Westhaven Drive retaining wall typifies the high quality urban design sought by the project.

## Tunnel construction well underway

The Victoria Park Tunnel will be an 18m wide trench through Victoria Park with a ‘lid’ on top. While the concept is simple, the execution poses interesting design and construction challenges.

Particularly challenging will be the ground conditions encountered as construction progresses through reclaimed land.

The land’s high water table means any structure in the ground runs the risk of

rising up or ‘floating’ due to the water pressure. This effect is expected to be particularly strong on the Victoria Park Tunnel. To prevent the ‘floating’, the structure will be anchored on deep piles that extend into the bedrock some 10m below the tunnel’s road surface.

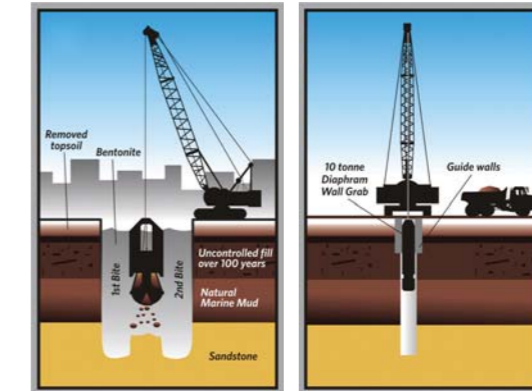
The tunnel walls are being built using a combination of secant piles and diaphragm walls because of varying ground conditions.

Secant piles are interlinked concrete piles in a continuous row while diaphragm walls are large concrete panels poured into an excavation in the ground before the road trench is excavated.

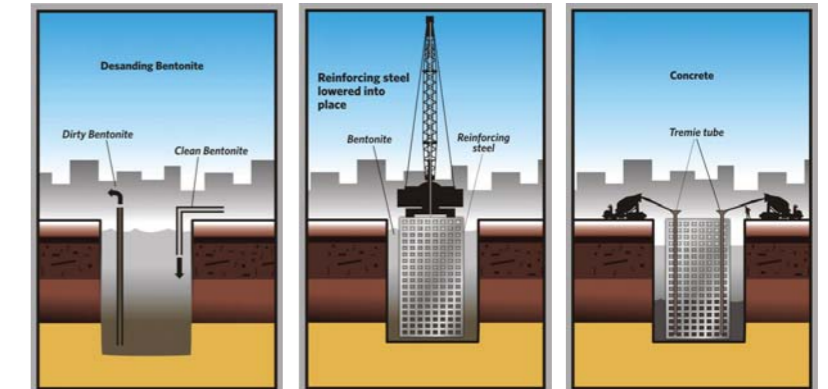
The secant piles will be used from the middle of Victoria Park north while diaphragm walls will be used to the south.

### The diaphragm wall construction sequence is:

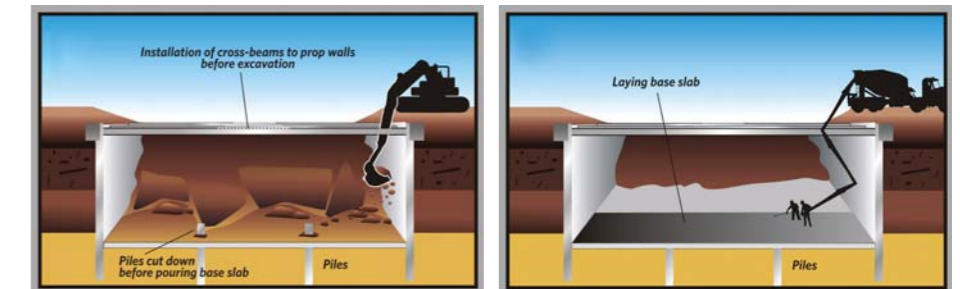
1. Continuous guide walls are built along the tunnel boundaries, as is currently in progress



2. A clam shell ‘grab’ scoops out the soil between the guide walls. A clay slurry called Bentonite is poured into the gap to prevent the walls from collapsing. Reinforcing steel is then lowered into place. The mud is pumped out from the top as concrete is poured into the bottom via a tube called a tremie.



3. Cross beams are laid across the top to prop the walls and the floor slab is laid along the bottom as the soil is excavated.



4. The tunnel asphalt is laid and emergency egress, fire structures and lighting are installed.

