NORTH EAST LINK PROJECT

Tunnels

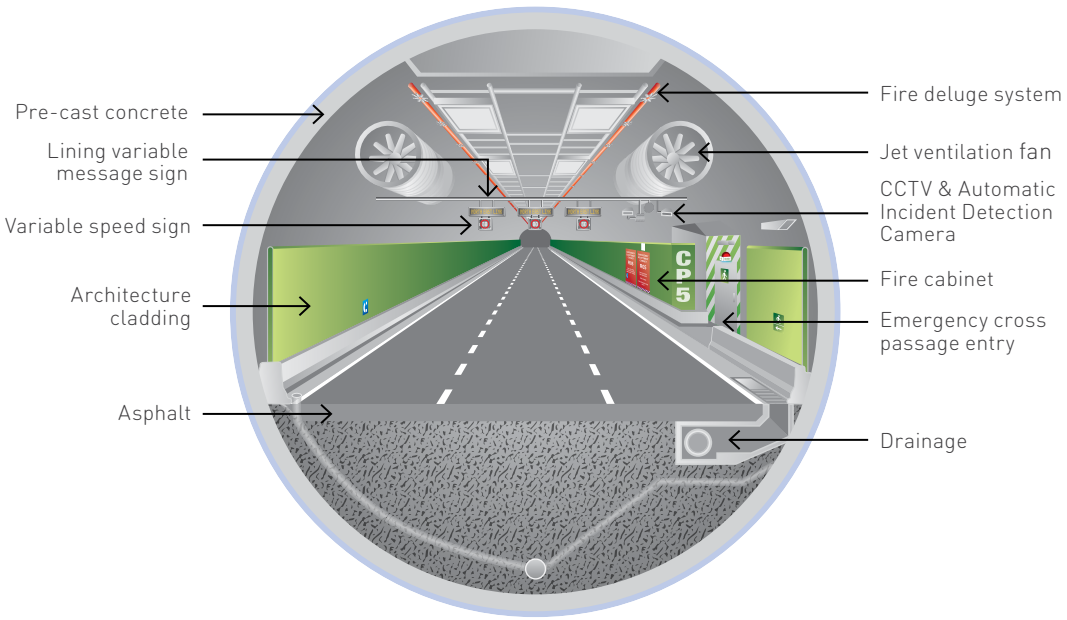
As cities grow tunnels provide much needed infrastructure while protecting the land above. North East Link will have extensive tunneling. Here's some general information about tunnels.

General features

- Tunnels would carry commercial and private vehicles.
- North East Link tunnels would be around 5 kilometres long and three lanes in each direction.
- When passing under the Yarra River, the tunnels would be around 15 metres below the river bed.
- The tunnel route will be influenced by ground conditions in the area.
- The exact tunnel route may not be finalised until advice is received from the construction industry.

Designing the tunnels

Tunnels are designed to meet stringent national and international safety requirements. Some of the likely safety features that would be included in the North East Link tunnels are shown on the diagram.



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NORTH EAST LINK AUTHORITY

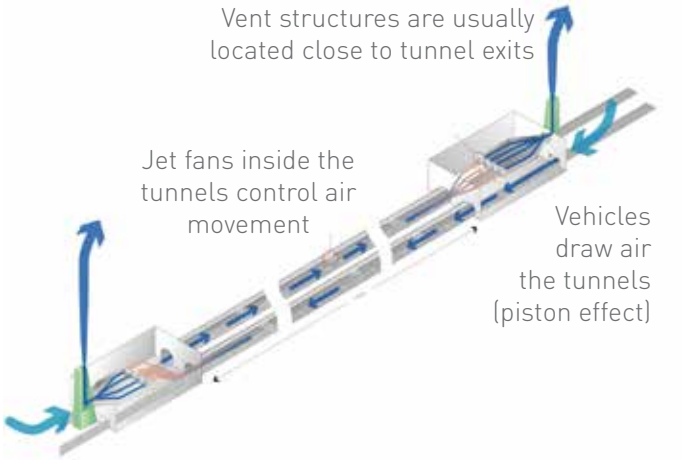
VICTORIA State Government

Air quality and ventilation

The tunnels would have ventilation systems to manage air quality inside and outside the tunnels. Ventilation systems are designed to meet environment protection standards. Tunnel ventilation structures are usually built at each tunnel exit. They would be as small as possible and designed to fit with the landscape around them.

Air quality for Melbourne's CityLink and EastLink tunnels is continuously monitored and results show air quality in surrounding areas is not affected by the tunnels.

Typical tunnel ventilation system



Geological considerations

The types of rock beneath the ground present different challenges in designing tunnels. It affects the route of the tunnels, their grades and the type of equipment needed to build them.

EastLink was built underground using road headers.

Building tunnels

There are two main ways to build tunnels. People often first think of the driven tunnel method, where construction is carried out underground. This could be done with road header machines, a tunnel boring machine or by drilling or blasting. Road headers were used for CityLink and EastLink.

The cut and cover or 'top down' method is used close to the surface or where the conditions below the surface are not stable enough for underground work. As the name suggests, this method means the tunnel is built from the surface which is then reinstated to its original condition, or improved, after construction. This method was used to construct CityLink's Domain Tunnel under the Yarra River and beneath St Kilda Road and Sturt Street in South Melbourne.

During tunnel construction, vibration is managed so that the buildings above are not affected. Building condition surveys are completed before and after construction for nearby properties.

What if I live above the tunnel?

There are thousands of road tunnels operating around the world, including some in Melbourne. These tunnels are built deep underground and are designed so that people living and working above the tunnels don't even notice that they are there. Once North East Link is operating, people above the tunnel will not notice any noise or vibrations.

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