

## **Memorial Park 2 Video Questions**

**Tuesday 13 May 2014**

### **1. Progress on the Underpass**

Meet with Structures Project Engineer Cole Meiring to get the lowdown on progress made with the underpass since the first field trip in November.

1. Why do you have to sign a form before entering the construction site?
2. What two things have had to be moved for construction to begin?
3. List three of the main parts of the underpass that have been put in place since last November.

Next step learning: Have a look at some videos from the first *Memorial Park* field trip to get more of an idea on the progress that has been made on the underpass since last November.

### **2. Temporary Structures for a Permanent Tunnel**

Meet Site Engineer Russell Scoones to see what sort of temporary structures have to be built on site before the concrete is poured.

1. How long does it take for 40 metres of scaffolding to be set up for the pouring a roof slab?
2. How long does it take for the concrete to be hard enough to support itself before the scaffolding can be taken away?
3. What is between the scaffolding and the concrete roof slab?

Next step learning: Create a labelled diagram to show how formworks are used to create a mould which concrete is then poured into to make the tunnel walls.

### **3. A Strong and Resilient Tunnel**

Join Cole Meiring as he describes in more detail how the tunnel is being built strong enough to withstand a 1 in 25,000 year earthquake.

1. Why is the steel reinforcing coming out through the top of the wall panels?
2. What are the two main components that make up the roof?
3. What are the two forces that concrete and steel are there to withstand in an earthquake?

Next step learning: Find out what are other materials used in construction for the purpose of providing strength.

### **4. Concrete – a Technological Product**

The construction of the Memorial Park underpass is an ideal opportunity to put the technology curriculum into a real-life context. Join Cole and Andrew as they focus on concrete as a technological product.

1. What are the three key ingredients of concrete?
2. What makes concrete a good material to use in a construction project like this?
3. What do the subjective versus objective aspects of concrete mean?

Next step learning: Do a similar analysis of another “technological product” used in construction.

### **5. Anchoring the Underpass**

Meet Geotechnical Engineer Sam Glue. Sam explains why piles are such an important part of making the Memorial Park underpass strong and resilient.

1. What can happen to the silt, sand and gravel during an earthquake?
2. How do the piles help keep the underpass structure in place?
3. How were the piles changed after testing showed the straight shaft would not hold the underpass structure in place during an earthquake?

Next step learning: Find out what other measures are put in place for buildings and so on to help them withstand large earthquakes.

### **6. Memorial Park Project – an example of Technological Practice**

Cole Meiring gives an overview of the Memorial Park and underpass project as it relates to technological practice.

1. What are the four main parts of this project?
2. What is another name Cole uses for the progress table he refers to in the video?
3. What happens in a “peer review” for evaluating certain parts of a project like this?

Next step learning: Do a similar analysis of “technological practice” for a different project.