
Ōtākaro/Avon River Precinct

Lesson Plan



This resource was designed to assist a primary or intermediate school teacher to conduct a 30-45 minute tour of the central area of the evolving Avon River Precinct.

This lesson plan was developed and used for groups of Year 7 and 8 students from St Martins school in May 2017.

Background

The 'Share an Idea' public consultation process highlighted the importance of the Ōtākaro/Avon River to the people of Christchurch.

The Central Christchurch Recovery Plan identified the Avon River Precinct as a significant Anchor Project.



The central city area of the Ōtākaro/Avon River is being transformed as part of Christchurch's regeneration. The goals are to:

- create a more accessible new city waterfront;
- enhance the river environment;
- improve cultural and historic connections with the river.

A key feature will be a paved City Promenade extending two kilometres through the heart of the precinct on the eastern side of the river, replacing Oxford Terrace. The western side of the river will be a green space with walking and cycling paths.

Most of the central city elements of the project are now either complete or well underway, making it an ideal time for students to explore the project and how it has changed the way we interact with the river.

Health and Safety

Safety is important as students will be crossing roads and tram tracks, and venturing close to the river. Key points:

- We need to stay in a group and walk sensibly (adult at front and back).
- We will cross roads at the proper crossings. Watch out for cars and trams.
- Be careful near the river edge. Please make sure you don't accidentally nudge another student into the water.

Introduction

- Today we are going to be walking in a big group. I'll ask questions. If you would like to answer the questions, just call out, but remember to be polite to other people who might also want to answer.
- Here is a map for each of you (*see page 13*). Your task today is to mark on the map the places that we visit on this tour of an Anchor Project.
- What is an anchor project is? (A key projects designed to create a more attractive and vibrant central city).
- This anchor project is the Ōtākaro/Avon River Precinct. The project is being delivered by a Government owned company called Ōtākaro. Can you guess what Ōtākaro means? (The Maori name for the Avon River)
- The Avon River Precinct anchor project has been designed to:
 - 1) create a more accessible new city waterfront;
 - 2) enhance the river environment;
 - 3) improve cultural and historic connections with the river.
- We are going to look at seven elements of the project. See if you can work out which of these three objectives are being met by each of the piece of work.

Tour start (Stop 1): north side of Worcester Street bridge. Look down on punt stop. Watch for trams!

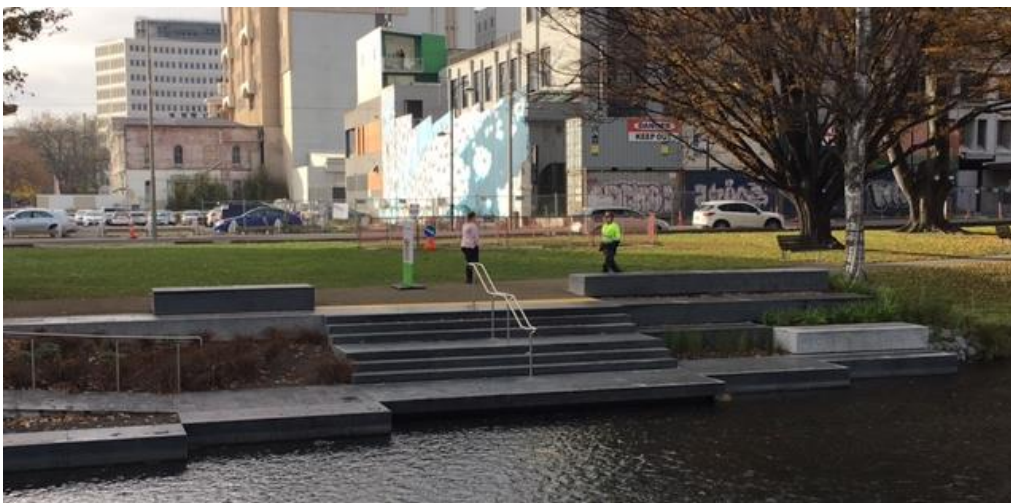
- What is a punt?
- Why is having more punt stops along the river good for Christchurch?
- But how do you think people constructed this punt stop in water?



- This is the construction method used. You've heard of a dam, which holds back water. A cofferdam is a basically a large box built in the water that is made nearly water tight. Completely water tight is next to impossible. (*See page 14*)
- The large pieces of corrugated steel that hold back the water around the cofferdam are called sheetpiles.
- Each is driven like a pile into the earth below the water. They interlock to create a cantilevering wall or sheet of steel that serves as a dam. To keep them tightly interlocked they have a sliding joint.
- The water is then continuously pumped out of the cofferdam lowering the water level inside the box until earth is finally reached. This allows people to work on solid (well it's usually a muddy mess) ground.
- Once the work is done, the cofferdam is removed and the water flows back in.

Stop 2: Worcester Street Terraces. Cross to the south side of the bridge and walk along the short path on the city side to the terraces.

- What is the point of this stone structure do you think? (Improve accessibility. Prior to the quakes there was just a grass bank here.)
- This is another example of how the Avon River Precinct is making it easier for people to get close to the river. Shortly we'll take a look at a bigger version.



Stop 3: the rain gardens. Continue south along the path towards the Hereford St Intersection. Cross at the traffic lights and stop at the rain gardens.

- These gardens are special. They are called rain gardens.
- What happens to the Avon River when there is very heavy rain? (The water level rises and it becomes discoloured.)



- That discoloured water is full of sediment and contaminants which aren't healthy for the river or the plants and animals living in it.
- With rain gardens, the water from all these hard surfaces (paving and roads) is channelled into the gardens, rather than directly into the river.
- These plants' roots filter out a lot of the contaminants and the soil traps much of the sediment. The water that does eventually make its way into the river is cleaned and it arrives well after the 'peak period' for stormwater that occurs during and after heavy rain.
- So what Avon River Precinct objective is met by rain gardens? (the goal to enhance the river environment.)
- Have a look for other rain gardens around Christchurch. For example, on Manchester St you will see gaps have been left in the new footpath kerbs to allow water to flow into rain gardens rather than the stormwater system.

Stop 4: the Terraces between Hereford and Cashel Street, just past the rain gardens.

- Why are there words on the stones? The words are actually poetry about the river or to bring to life the Ngai Tahu heritage of the area.
- How do you think the words get onto the stones? The stone is sandblasted by a stone mason off site using aluminium oxide. This is done in a booth so that the aluminium used can be recycled. The stonemason uses different sizes of aluminium grain to get fine and less fine detail in the lettering.
- The etched stone panels are delivered by a truck to the site. They are packed in crates to protect them. Because of their weight they are easy to crack.
- Can you guess how much each block weighs? Around 400kgs. They are moved around by a manually operated spider crane which has 6 legs so you can position it on uneven ground - like steps.



Stop 5: The eels. Head down the steps to the lower terraces. The best place to find eels is next to the right (northern) balustrade.

- The earthquakes caused a lot of liquefaction silt to enter the river which was not good for the health of the river, and its plants and animals.
- Enhancing the river environment was a key goal of the Avon River Precinct.



- So there was a big clean-up. Hundreds of eels and trout were removed from this part of the river and relocated upstream. Big digging equipment was brought in to remove liquefaction silt. How much silt do you think was removed? (10,000 tonnes).
- They also improved the flow of the river – creating slower and faster flowing areas – and they planted a lot of riverside plants to improve the river habitat. You have to think of the river as a complete environment. For example, trout will feed on insects that live in these riverside plants.
- Fish are now thriving, the water is flowing better and the riverbed is cleaner.
- Eels are protected in this area and have cultural importance to local Ngai Tahu people. Fishing is banned in the river. Does anyone know the Maori name for eel? Tuna (pronounced two na)
- How old do you think some of the eels that live there are? The eels grow very slowly with an 80cm eel taking about 60 years to grow to that size. Some of the eels are very old and it is important that all of the eels are respected and cared

for as they are special and important fish in our river.

- Feed the eels: just a couple of people will be able to do this. (Place a couple of pieces of meat in the water and wait for the eels to slowly appear.) How do eels find the meat? (Eels are virtually blind but have a very good sense of smell.)
- Once a few eels have appeared the students should place more meat in the river, keeping their hands at least 30cms above the water.
- People can feed the eels at any time with any cooked or raw meat. Raw mince is a good option. Do not feed them bread as it damages their stomachs.

Stop 6: Ngā Whāriki Mats. Head back up the steps and continue around to the stone weaving pattern in front of the Bridge of Remembrance.

- These Ngā Whāriki Manaaki (stone weaving patterns, woven mats of welcome) are another example of bringing to life the Ngāi Tahu heritage in Christchurch.



- Thirteen of these will be installed along the river. These woven mats of welcome represent the value of caring for manuhiri or visitors. The Whāriki will welcome everyone who visits the Ōtākaro/Avon River Precinct.
- Does anyone know the name of the technique that uses little tiles to make up a big pattern? Mosaic
- The Whāriki are designed by expert weavers Reihana Parata, (Queen's Service Medal), and Morehu Flutey- Henare, (Master of Applied Indigenous Knowledge), with technical support from Wayne Youle, (Bachelor of Design).
- A group of He Toki civil skills students were invited by Ōtākaro to pave the Whāriki located in the Park of Remembrance.
- Take a guess how many pieces of stone are used in this artwork? They placed 3557 stone pieces. *(See image page 15.)*
- How long do you think it took? Five days to finish the job.
- Have a look at the design. What are these designs? (Point to stone poppies).

- At the start of both the First and Second World Wars, soldiers marched from the King Edward Barracks (behind the Ernst and Young building to the west) through here on their way to the troop ships in the port and off to war.
- Ask someone to read the description of this Whariki:

Maumahara: Remembering our fallen in battle

Lest we forget assists us in our remembrance of all the wars New Zealanders fought in, and we honour those who never returned home. The design indicates lines of servicemen and women marching forth to war, together with the famous red poppies, symbolising the fields of the fallen. Lastly, in relation to our pātikitiki¹ pattern, this design depicts the soul journeying from home into the spiritual realm.

¹Pātikitiki: a pattern used on Whāriki mats, originating from the lashing together of framework timbers of houses.

Bridge of Remembrance

- The bridge of Remembrance and Triumphal Arch were very badly damaged by the earthquakes.
- Why was it important for these structures to be repaired and strengthened? (To recognise those who have served our country in wars, particularly those who died.)
- The foundation structure was completed at the end of September 2015. Then new paving was installed on the bridge, along with a ramp to improve accessibility and lighting to highlight the Triumphal Arch. This was all finished in 2016.



Your group can continue back to the starting point along the western side of the river. Cross Hereford Street at the same Oxford Terrace traffic lights.

If you or your students have any questions about anything to do with the Avon River Precinct or any other Ōtākaro-led Anchor Projects, please visit our website (www.otakaroltd.co.nz) or contact us: info@otakaroltd.co.nz





