

Archaeological investigation of the Lower Karori Dam Spillway, Karori Wildlife Sanctuary

report to
The New Zealand Historic Places Trust,
Karori Wildlife Sanctuary
and
RCP

Jaden Harris

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Introduction

The Karori Wildlife Sanctuary is currently developing a new visitor and education complex which will impact on features relating to the historic Lower Karori Dam. As part of the construction of the new visitor centre part of the right-hand spillway of the dam is to be removed. The Lower Karori Dam and the spillway which forms part of the dam complex is recorded as an archaeological site (R27/276 in the New Zealand Archaeological Association site file) (Figure 1). Under authority 2008/42 issued by the New Zealand Historic Places Trust under the Historic Places Act 1993 any section of the spillway to be removed or modified during construction of the new visitor centre is to be recorded by an archaeologist. As part of this mitigation process archaeological monitoring and investigation was carried out by archaeologist Jaden Harris in August 2008.

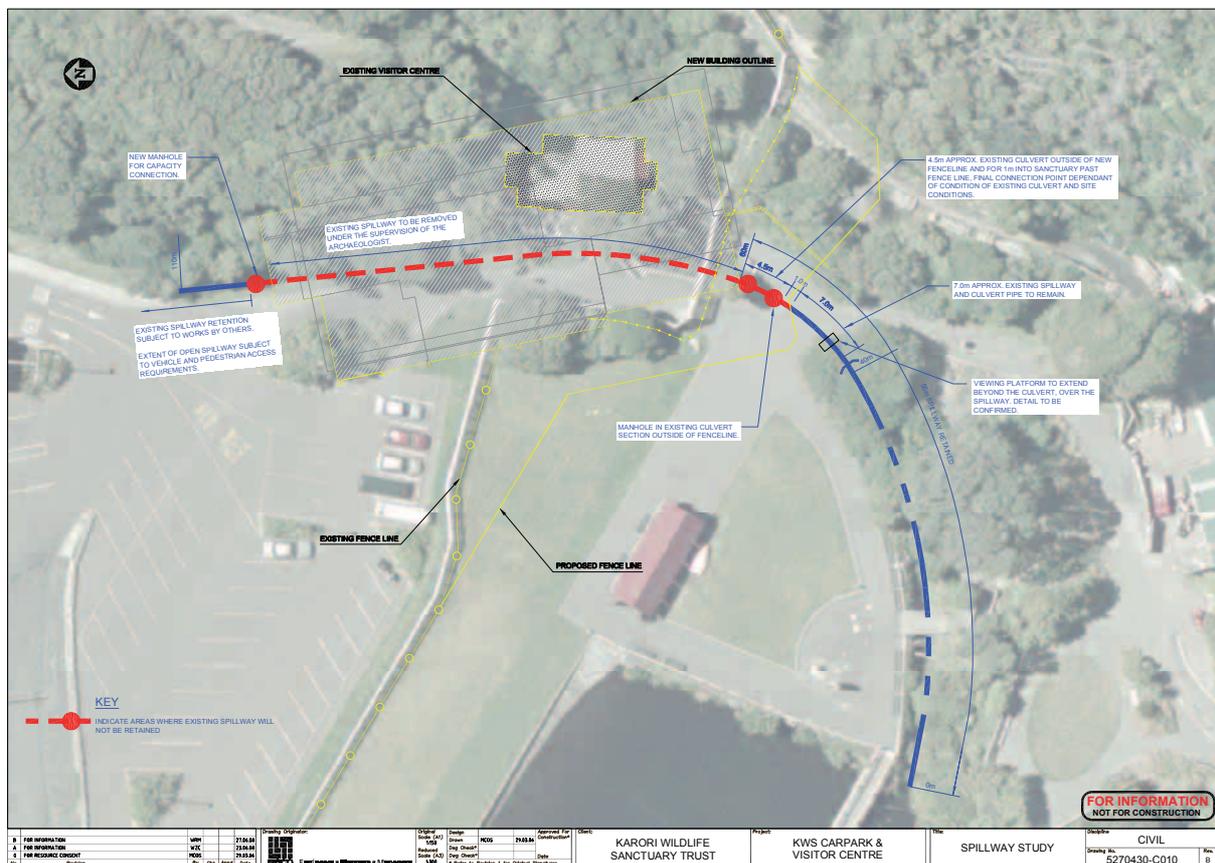


Figure 1. Location of the spillway and new visitor centre.

History

The Lower Karori Dam was constructed by the Wellington City Council for the purposes of supplying the city with a regular water supply. Work on the dam was completed in 1874 and it is likely that the spillway on the east side of the dam was constructed at this stage also (O’Keeffe 2007: 9, 14).

Archaeological investigation

Methodology for recording and investigating the spillway involved photographing the effected sections before and during construction earthworks to modify or remove them. Taking measurements of the spillway and drawing cross-section profiles to ensure that the original structure is fully recorded and recording any other evidence relating to the construction of the spillway.

To conduct the investigation two areas of the effected portion of the spillway were chosen for detailed investigation. One was at the northern end of the development area (Figure 2) and one at the southern end (Figure 3). A cross-section drawing was made of this section prior to the structure being investigated with a hydraulic excavator. From Figure 4 it can be seen that the spillway is 1470 mm wide at the base with sides which taper slightly outwards. On the base and on the west side the spillway is faced with concrete. On the east side the spillway channel is cut into the bank, which is rock, and is not faced with concrete. The concrete on the west side only extends for 380 mm from the base of the channel. Running behind this concrete side at the top is a steel water pipe 125 mm in diameter. Measurements taken with a tape measure at points below where the drawing was made confirmed that these dimensions remained the same and the cross-section is representative of this portion of the spillway.



Figure 2. The portion of the spillway at the north end of the development area. The spillway can be seen running under Waiapu Road in the background. Photo taken from location of Cross-Section 1.



Figure 3. The portion of the spillway at the south end of the development area. Photo looking north towards Waiapu Road. Location of Cross-Section 2 indicated by arrow.

This section of the spillway was then scraped down by hydraulic excavator and the concrete facing removed to determine how the spillway had been constructed. It had been constructed simply by digging a channel down into the natural rock and facing the base and sides where required with concrete. The natural rock can be seen clearly on the east side of the spillway after

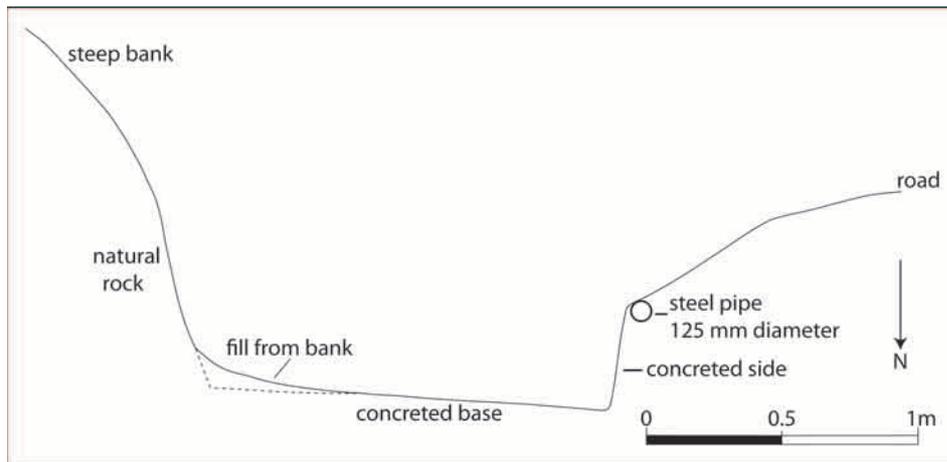


Figure 4. Cross-Section 1, taken at the north end of the spillway.



Figure 5. The natural rock bank forming the east side of the spillway channel after machine cleaning.

cleaning back with the machine in Figure 5. The concrete on the base of the spillway had been poured directly onto the natural rock and varied in thickness from less than 100 mm to up to 150 mm. The concrete on the west side had also been poured directly against the bank of the channel. The area immediately to the west of the spillway and running adjacent to it has already been modified as a roadway. No other evidence relating to the dam complex apart from the spillway was noted in this area.

This confirmed the initial conclusions based on a preliminary investigation and site visit on 19

June 2008. This investigation examined the portion of the spillway just above the development area currently filled in by a large concrete culvert pipe with a paved vehicle access way running over the top. This investigation found that the spillway remained intact beneath the culvert and had been constructed by digging a channel into the natural rock and lining it with concrete.

The second section of the spillway was investigated by photography, making a cross-section drawing, and cleaning back sections of the concrete structure by trowel and spade. No further mechanical excavation was undertaken. In this area the spillway is narrower with the base measuring 1200 mm across. This is most likely due to the channel being significantly deeper in this area at up to 1800 mm deep, compared to 750 mm where cross-section one was drawn. The channel is lined on the base and the sides up to a height of 600 mm (Figure 6). The later concrete on the west side of the channel is associated with the large steel water pipe which crosses the spillway, visible in Figure 3. The concrete at the top of the west side is even later still and associated with a walkway over the spillway to the old visitor centre.

No concrete was removed in this area but a small section on either side of the spillway was exposed by spade and trowel. As can be seen in the cross-section drawing (Figure 4) and in the photos (Figures 7 and 8) the concrete at the top at least is 250 mm thick. The thickness of the

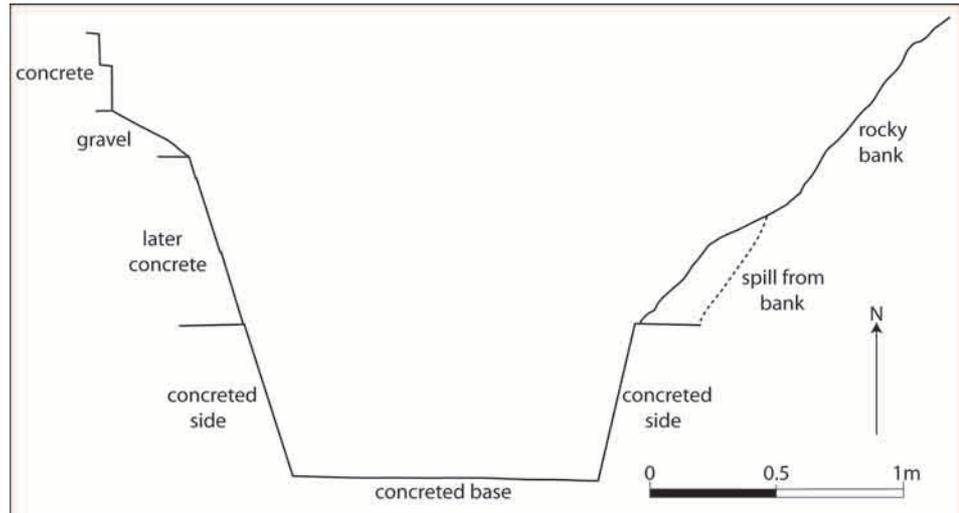


Figure 6. Cross-Section 2, taken at the south end of the spillway.

concrete on both the base and sides probably varies greatly, like the section investigated at the north end of the spillway. A few metres back up the valley from where the cross-section was taken the sides are not faced at all (Figure 9). As with the area where the first cross-section was taken the land adjacent to the spillway on the west side has been developed as a roadway. On



Figure 7. Concrete facing exposed on the east side of the spillway, scale 0.50 m.



Figure 8. Concrete facing exposed on the west side of the spillway, scale 0.50 m.



Figure 9. The section of spillway south of Cross-Section 2 and immediately below the culvert, clearly showing the natural rock bank forming the east side of the spillway channel. The arrow indicates where the concrete facing ends on the west bank.

the east side is the building platform for the original visitor centre, which is cut down to natural rock and gravel. No archaeological evidence of features apart from the spillway exists in this area.

Conclusions

The current and previous investigations have shown that the spillway was constructed as a channel dug down into the natural rock and faced with concrete along the length of its base and sides where required. All of the evidence from two archaeological investigations in the development area point to the spillway being the only archaeological feature associated with the dam in this area. No other archaeological evidence or features related to the Lower Karori Dam complex were identified or recorded by the two investigations to date and any further investigation is unlikely to result in any new information.

References

O’Keeffe, 2007. Karori Sanctuary, Wellington: Archaeological assessment of proposed visitors’ centre. Unpublished Report to Nancy Ward, CEO, Karori Wildlife Sanctuary.