



Highland Caving Group

A member society of the Australian Speleological Federation inc.

President: Ian Lutherborrow

Secretary: Bruce Waddington

Treasurer: Lindsay Matheson

Post Office Box 54, GEORGES HALL NSW 2198

E-mail:

Project Completion Report Installation of the B4 Fossil Cave, Kings Cross Bridge and Ladder

Date 05 August 2011

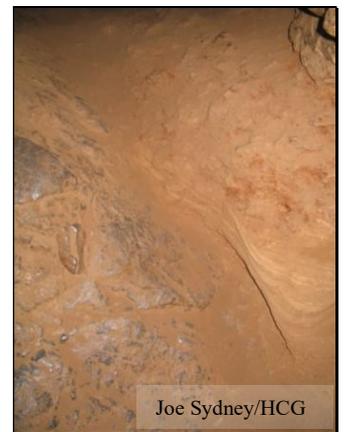
This is the Project Completion Report for the B4 Fossil Cave-Kings Cross void bridge and ladder installation. It accompanies three other project progress reports dated:

- February 2008: Site inspection report,
- December 2008: Mock PVC bridge report, and
- February 2011: Test installation report.

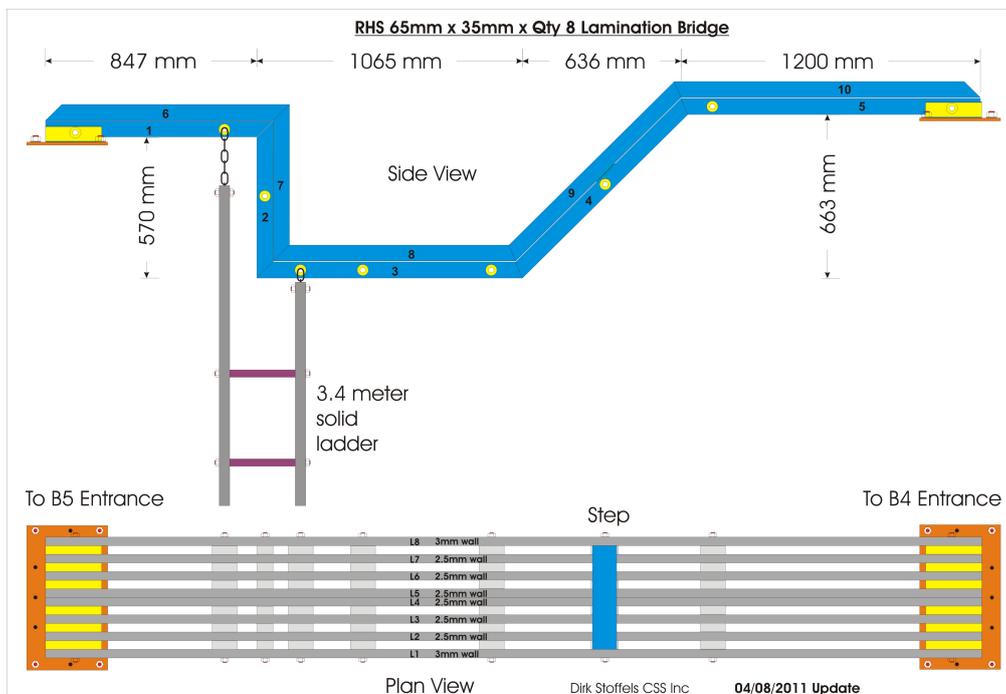
During university research undertaken at Bungonia on its geology by Julie Bauer in 1992-93, it was identified that paleo cave sediments within the B4 system were being degraded by recreational cavers, in particular, in the Kings Cross area. Consequent discussion by BRAG (Bungonia Recreational Advisory Group) members asked, how can this degradation be reduced?

Members of HCG present at BRAG took up the challenge and consulted with other ASF clubs about options. HCG & CSS suggested that a bridge and ladder could be a solution to the erosion problem.

During the period between 2007 and 2011, further consultation was conducted between HCG, CSS, Parks, its engineers and ASF clubs to design a suitable structure.



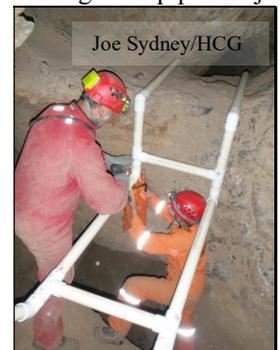
Joe Sydney/HCG
Cave sediment at Kings Cross.



As built drawing of the lamination bridge

In 2008 CSS submitted to Parks an early design for a bridge and ladder to cross the Kings Cross void protecting the sediment. Parks engineers provided the specifications and later approved a final design.

In December 2008, to aid in the fabrication of the bridge, a mockup of the bridge was assembled in the B4 Fossil Cave using PVC pipe and joints



Joe Sydney/HCG
Caver & NPWS work on the PVC pipe mock-up bridge



Dirk Stoffels/CSS

Fabricated bridge

During early 2010 Parks, with approval from the Karst Geodiversity Unit, approved funds of \$3300.00 to purchase the materials required by CSS to fabricate the bridge and ladder. In early 2011 the fabrication of the 10 mild steel laminations, spacers, mid slope step, end footpads and ladder commenced by CSS members in Canberra.

During February 2011, one of the dual height side lamination sections of the bridge was taken into the cave for an on-site fit check. The fabrication of the bridge was completed in early May 2011.

With the bridge and ladder fabrication complete, the dates of 27, 28 and 29 May were selected for installation on the basis that all parties were available on that weekend. ASF clubs were contacted calling for experienced cavers to assist. 24 cavers turned up on the weekend! A few cavers also made themselves available on the Friday to install the electrical cable, rig the cave and install the Michie phone communication line vital to call for resources.



John Brush/CSS

Cavers carrying a bridge section through B4 Fossil cave.



John Brush/CSS

Cavers leveling a bridge footpad.

The installation of the bridge and ladder was to be over two weekends however as it all went very smoothly with no problems occurring, both were installed on one weekend. This is a testament to the experience and the hard working nature of all cavers involved.



John Brush/CSS

Caver core drilling the start of a anchor hole
Holes started with core drill due to limited roof height for the hammer drill..



John Brush/CSS

Installing the floor retention posts for the vertical ladder section



Bridge and ladder installed over B4 Kings Cross Void

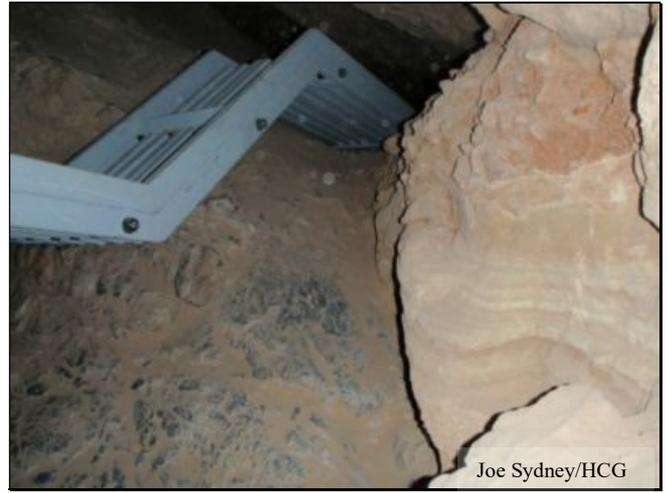


Photo showing slot where cavers climbed and damaged paleo cave sediment on wall. The bridge encourages cavers to bypass this section.

It is estimated that from 1992 to May 2011, the projected volunteer caver time for entire project is approximately \$47,300.00

The Highland Caving Group and Canberra Speleological Society Inc would like to thank Bungonia National Park and Bungonia recreation Advisory Group in allowing them to undertake this project.

Joe Sydney
Highland Caving Group

Dirk Stoffels
Canberra Speleological Society Inc.