

CAVE PROJECT MANAGEMENT? WHAT'S THAT!

- Neil Kell & Elery Hamilton-Smith

Neil points to a newly installed
lighting system



INTRODUCTION

A considerable quantity of content passes through the caverns of cave management. To some, this ever-increasing flow of information and experience may become a resource to tap, test, and contribute to. However to others it may pass by as part of our modern life of living with the ever-changing mountains of information in a technological world.

This clutter of information and content, data gathering, massaging, and analysis should be an aid in the evolving good management of show caves, but a number of recent events involving in-cave redevelopment projects indicates that managing the project for the conservation of the cave resource slips low on the ladder of priorities.

One may ask where are all the advantages of hindsight, the long and varied experience of ACKMA and its membership, and the indeed the exchange of information? In some instances it appears to not exist. Why is this so?

In short, it is clearly a people and organisational problem, but let us look at it more deeply than that.

AN EXAMPLE OF FAILURE

We will begin with an example of an in-cave project, which demanded total replacement of an ageing cave lighting system with a new one, and requiring funds in excess of \$100,000. In this instance the conservation management authority managing the cave resource delegates the management of the cave to a Ranger who is also responsible for managing other resources in the region. Ongoing maintenance, Occupational Health and Safety, public risk problems and increasing costs combined to force consideration of relighting the cave.

Neil was asked to assist, with one aim of the project being to develop the lighting at "world best practice" standard. The aim of the relighting

design proposal at this stage was to assist the process of securing the funding commitment.

In less than twelve months the design proposal was adopted in full – a success indeed for the Ranger-in-charge. At this point a major shift in project responsibility occurred because the project had to go to tender and be contracted out. Because a contract was involved the supervision of the project became the responsibility of the public works or construction department, which took 18% of the project budget for its supervision services. The relighting design proposal from now on became the responsibility of the contract supervisor (an electrician). At this stage the Ranger was transferred out of the district and had no further involvement in the project.

Some months later, Neil was contacted by an Interpretation Officer concerned about the cave contract stalling in a state of practical incompleteness. There were several points of concern regarding the inability of district staff to write a programming script to operate the lighting for tours, determine placement and aiming of lights, and generally to be able to review the work as completed and suggest any rectification of problems.

The close-to-completion stage was made more complicated by the tourist cave lessee successfully forcing the management authority to open the cave for tour operation before the cave contract works are complete, despite considerable Occupational Health and Safety and public risk concerns arising from lack of lighting in difficult access areas. Against strong protests from the project/contract supervisor Neil, as the lighting designer, he was engaged for one week to review the site situation.

Neil's in-cave assessment revealed an alarming array of modification and inattention to the basic design details, which if not corrected would definitely put in jeopardy the future operation of tours within the cave. The singular major modification was to the walkway lighting system using light emitting diode (LED) luminaires. The original design specified 100 LED luminaires in a particular mounting arrangement, while the modified design increased the number of LEDs to 168 but changed the mounting arrangement, effectively reducing the illumination to the walkway by 50%. As a result 168 LEDs have to be remounted to correct the inefficiency.

All of the critical specifications for lamps (wattage and beam angle) and luminaire shielding were not included in the contract. This effectively destroys the ability to create the desired lighting scenes. More than half of the luminaires in the cave will have to be refitted with the correct bulb and shield. Many of the mounting specifications for the luminaires were ignored, some lamps were not wired into the system, and many others were mounted inappropriately on the top of the walkway handrail.

Elery Hamilton-Smith with Andy Spate, in Korea.
Photo: Andy Spate.



At the close of four days of review, a long list of items were identified as needing rectification; ranging from installing items left out, reinstalling others correctly, numerous adjustments to achieve designed outcomes, through to scripting and programme adjustments in the fine tuning of the operation of the lighting control system. All these last minute problems occurred because of a disregard of the importance prescribed to them within the design proposal.

The “world’s best practice” product envisaged of the relighting project and the following design proposal was totally diminished in the final stages of the contract. This was due to due to lack of the necessary knowledge and experience, mismanagement and/or lack of management at various levels. It may be easy to cast blame upon

individuals, but that would only be a superficial answer. Underlying the story of problems are the systemic factors that subtly wreak havoc within a framework of best intentions.

WHAT CAUSED SUCH A MESS?

Let us start by saying that although this is a particularly problematic situation, it is only one of a number of very similar incidents.

One may start with the situation of karst, caves, and show caves, without a designated ‘cave manager’. The lack of cave focus at the district level is not only indicated by not having a cave manager, but also by transferring the ranger who initiated the project out of the district and away from any further involvement in the relighting project before even the halfway point was reached.

The assumption that the conservation managers should not be responsible for managing project contracts creates even greater problems. Contract management staff cannot be expected to understand the very special requirements of infrastructure projects in the cave environment.

Even worse, they showed no realisation of their own lack of expertise, and hence the importance of expert assistance in order to formulate a works programme relevant to show cave management and conservation considerations.

They also assumed that the work of relighting a cave is totally within the understanding and experience of an electrical contractor, and therefore let the contract for the total works, without any provision for expert supervision.

As we noted, this is only one of a number of such examples that one or both of us have experienced. It is clearly based in the fragmentation of governmental administration, compounded by the contracting out of implementation. Can we suggest that members give consideration to the development of a set of policy and procedures recommendations on the management of cave-associated infrastructure – perhaps at the next ACKMA conference?

