Rapid Survey of a Subterranean Structure at the Albury Pioneer Cemetery

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Background
Heavy rains in mid March 2012 caused a localized ground subsidence which exposed the opening to a subterranean structure in section 2 of the Albury Pioneer Cemetery. Following speculation as the nature of the structure, the author was approached to examine the structure and provide a report.

Extent and objectives of the research
The objective of the research was to determine the nature of the subterranean structure and carry out basic, non-intrusive documentation of the extant features.

While it was highly probable that the structure was a crypt or burial vault, persistent speculation by members of the public focused on an interpretation as a World War II air raid shelter.

To settle the issue, the structure was examined by the author on 27 March 2012 in the presence of Mauro Dei Agnoli, Group Leader Projects, and Ray Gear, Senior Town Planner (both Albury City). Also present were Doug Hunter (Albury & District Historic Society and MS Bonnie Cooper. The documentation of the structure was restricted to visual examination, the taking measurements and photographic documentation. None of the sediments on the bottom of the structure were disturbed.

An in-depth historic analysis has not been carried out, but some comments are appended below (p 3).

Property owner
Albury City, 553 Kiewa Street, Albury NSW 2640. Contact: Mauro Dei Agnoli, Group Leader Projects; telephone: 02 / 6023 8111.

Location:
Albury Pioneer Cemetery, Waugh Road, Albury NSW 2640. The structure is located in section 2, rows H & J, plots 6-9 (Fig. 1–Fig. 3).

Description
The unmarked structure is comprised of an above and a below ground-level component.

Above and at ground-level component
The grave area is a quadrangular structure comprised of a concrete platform bounded by brick, measuring 12" in north–south and in east-west dimensions, with a maximum (exposed) height of 10 1/2" (27cm) (Fig. 4–Fig. 7). The structure exhibits damage to the southwestern corner, where several bricks are missing and others are broken (Fig. 6, Fig. 15).  

The retaining brick wall, into which the concrete had been poured, extends four courses above ground and has the width of a full brick length (9"). It can be assumed that the structure extends for another two, but probably three courses into the ground. All bricks of the final course are oriented east–west; with the eastern and western sides exhibiting headers, while the northern and southern sides showing two parallel rows of stretchers (Fig. 8).

The centre of the area is covered with unfinished concrete (Fig. 15). The exposed aggregate is comprised of mixed, washed river

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1. Although it is established modern practice to use the metric system, this description is solely concerned with a structure built at the end of the nineteenth century, when the Imperial System was used in New South Wales. Thus the dimensions are primarily rendered in feet and inches. As will become evident, the builders erected the structure to exact specifications.

2. Given the location of the corner next to a path as well as an empty space, it would appear that this is due to vehicular damage.
gravels with a size of 1 ½” or less. Noteworthy is the high concentration of coarse aggregate and the relative absence of finer material (Fig. 16).

With three exceptions on the eastern side, the bricks are made of reddish-orange stock (Munsell 2.5YR 5/8) with a fine temper of crushed quartz / quartz sand (~0.5mm) and some minor amounts of mica (Fig. 17). The bricks measure 9” x 4 ½” x 3”.

The vault has an access that opens to the north (Fig. 11). As the vault below is windowless, the north-facing opening ensured that natural light would illuminate the vault’s interior for much of the day. The width of the arched entrance is 4”. Its exact height could not be determined, given the talus of soil that covers the entrance area.

The wall of the vault at the entrance is 18 ½” (i.e. two stretcher lengths [47cm]) wide. The brickwork finish at the doorway sides is made up of alternating rows of stretchers and headers, whereby, in order to provide for the necessary structural overlap between the courses, each header layer follows this sequence: full header—half header—full header—half header—full header (Fig. 29).

The arch over the entrance opening is comprised of six layers of bricks. Two layers of headers are followed by one layer of stretchers, followed by another three layers of headers, the top if which reaches to just below the top course of the burial plot surround (Fig. 12). It can be assumed all but the top three layers are ornamental, as the arch over the access opening itself is supported by three tie bars, made of 2 ½” wide and ½” thick band irons (Fig. 29–Fig. 30). Spaced about 5” apart, they are positioned at the fore and back edge of the arch, as well as in the centre, where the two bricks join.

The external face of the entrance shows a 1 brick (4 ½”) wide and half a brick (4 ½”) deep groove on both the right and left side (Fig. 18–Fig. 19). Set flush with the face of the opening, these grooves seem to run the entire height of the opening to the top margin of the entrance. It can be surmised that these grooves were destined to receive a series of wooden boards (slid in from the top) that blocked the opening to the vault and allowed the external entrance space to be filled with dirt and thus obscured from view.

The external entrance space is characterised by two parallel brick walls, set 4” apart extend from this opening to the north. The top of the brick walls is smooth, with exposed, un-rendered brick set as soldiers (Fig. 18). The maximum observed distance was 1m. It can be surmised that this area forms a formal access into which the coffin would be lowered during the ceremony. Thus, in all likelihood, the space would have extended to a total length of 8”. This length would have provided a one-foot buffer to the boundary of the next burial plot.3

It is likely that the entire entrance space would have been brick-lined in the same fashion as the exposed part (reconstructed as such in Fig. 8). Given the confines of the space, it is probable that the bottom of the entrance space is flat and that the coffin was lowered into the space and then slid into the burial vault.4

**Below ground-level component**

The below-ground component is comprised of a double brick structure with a barrel-vaulted roof (Fig. 20). The structure measures 8’11” in both north-south and east-west orientation.

The bottom of the structure is partially filled with dirt. Without excavation, the total depth cannot be accurately ascertained. The greatest measured height was 6’2” (187 cm).

Recesses for wooden joists, noted at the southern wall (Fig. 21), suggest that the vault once had a wooden floor. A groove to receive

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3. See also Fig. 14 for a view of the southern side of the top of the barrel vault.

4. Set as stretchers with the narrow side pointing upwards.

5. The surround of the grave adjoining to the north was exactly 10’ feet away from the edge of the brick surround.

6. The customary orientation of bodies in Christian graves is east-west with the head in the west (so that on the day of judgment the dead can rise facing the rising sun). Given that the vault opens to the north, the coffins would have been rotated 90˚ once in the chamber to achieve this orientation. The overall size of the chamber (8’11” square) this poses some constraints of movements. In addition, the floor joists seem to have run north-south, with the floor boards then run east-west. From a structural perspective of load distribution it would have been advisable to place the coffin at right angle to the run of the floor boards.

7. The joist holes measure 6” in width and 3 ½” in height with a depth of 10”.

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the floor boards runs all round the vault, just above these recesses (Fig. 32–Fig. 33). Given the orientation of the joists, the floorboards would have run east-west.

Assuming the presence of the wooden floor, the internal space would have been 5'9" (176cm) to the apex, with the springing line of the arch starting at 1 ½'.

The walling is made of orange clay bricks of the same dimensions as those used in the above-ground structure. The exposed faces show that they were laid in an English bond pattern (alternating rows or headers and stretchers (Fig. 21). If the wall thickness observed at the access opening is any guide, then the wall would be two brick lengths (i.e. 18 ½") thick.

The walling exhibits no evidence of a surface treatment, be it rendering, white washing or painting. With the exception of the recesses for floor joists (see below), the walls exhibit no evidence for shelving, benches or other wall attachments.

Four ventilation pipes, protruding at 45º angles, are set into the ceiling, each 2' from the ends and 1' below the apex (Fig. 33–Fig. 34). The 2" diameter iron pipes protrude between 1 ¾" and 2 ½". The ends of all four are threaded to 1".

The ground is sloping towards the south with a talus of soil fanning out from the opening (Fig. 26).

**Dating**

There is no direct date associated with the structure. Indirect dating is derived from the construction technique and the material used.

The concrete on top of the barrel vault is coarse aggregate, which is used as fill and foundation. This mass concrete has no major load bearing capacity. It can be surmised that the vault predates the advent of the use of load-bearing concrete for floors or roofs. This does not occur in Australia until the late 1890s, with earliest concrete floor in Southern Riverina on record for 1897.

The overall brick structure of the vault is not chronologically sensitive and thus does not lend itself to dating. Solid iron lintels have been commonly used in the USA since the 1850s and in Australia soon after. The use of iron lintels in Albury became popular from the 1870s onwards and does not provide for a finer-grained dating either.

Overall, it can be assumed that the vault belongs to the last quarter of the nineteenth century.

**Material Culture encountered**

During the inspection of the vault no positive evidence of interments was located. It is possible, but in view of the historic analysis (p. 4) very unlikely that an interment might exist underneath the talus of soil.

Three items of material culture were encountered, all of which were located on top of the talus of the soil intrusion. At the western slope of talus was a self-made flower vase, shaped by evenly cutting the top of a deep green beer or wine bottle (Fig. 35). On the eastern side of the talus rested the fragments of ceramic flower pot, ornamented with green and pink flowers on a black band, with major part of the vessel glazed pink and the interior glazed white (Fig. 36). Next to it was the bottom part of a clear glass flower vase with cut motif. Neither were picked up for closer inspection. Part of the clear glass flower vase was encountered higher up on the talus, close to the entrance. The location of the items is consistent with them having fallen through a small cavity at the entrance.

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8. The groove has height of one brick course (3 ½") and depth of 3 to 3 ¾".
9. This implies a modified English bond.
10. As measured the centre of the pipe. The centre points of both pipes on the western side are 1" closer to the end of their respective end walls.
11. In 1898 Gummow Forrest & Co obtained a contract for a flat floor, spanning only three metres under light loading, soon after followed by arched floors of 5m span (Lewis 1988).
12. The arched concrete floor for the roof of the Wagga Wagga laboratory building (designed by NSW govt architect on advice by Nathan Cobb) was constructed in October 1897. It had four spans of 4.7m each (Spennemann 1997).
13. From the position this would then be the only interment. This makes little sense as in order to allow for additional interments to occur, the first casket would either be placed close to the back (south) wall or to either the left (eastern) or right hand (western) wall as seen from the entrance.
14. While the item was not cleaned for detailed inspection, the bottom of the bottle did not exhibit a depressed base or other indication that it was hand- or mould-blown.
A small amount of matted, dried grass present in the vault suggests that the interior of the chamber served for at least a short time as a rabbit warren. It is probable that the broken vessels described above were pushed into the rabbit hole during a tidy up of the areas surrounding the structures—and thus may have not direct relationship with the structure itself.

General Impressions

The above-ground section of the structure has a decidedly unfinished appearance. The concrete fill shows exposed aggregate without any evidence of rendering. Likewise, the brick edging is functional and lacks even minimal decorative elements. All bricks are oriented east-west; thus while the eastern and western sides exhibit a neat row of bricks, the northern and southern sides show two parallel rows. It very much appears as if the whole unit was destined as a foundation for a larger funerary structure that never eventuated.

At first sight, the below ground section also appears to be over-engineered for the purpose its serves. The walls are very thick (four bricks wide) and the barrel vault seems quite thick as well (three bricks wide). As this is structurally not required per se, it seems to suggest that it was build to withstand a substantial weight of the above surface section of the memorial that was never built.15

Interpretation

In theory, three interpretations of the structure are possible (air raid shelter, cool storage/cellar and cemetery vault), but only one, a cemetery vault, has any level of probability.16

The cemetery records are silent on the nature of any burial at that plot location. A formal original burial register does exist as all records were handled by the respective congregation. The extant records used for the management of the lots are amalgamation of data compiled by Albury City for the various congregations, the Albury and District Historical Society and private individuals.

The area taken up by the structure in the Catholic section is equivalent to eight burial plots—a sizeable area by anyone’s standards. Thus it can be surmised that this was a funerary structure of a person or family that considered itself of local importance. The only person of major local significance, but whose vault was unknown, is the pastoralist John Hore (and his wife Elizabeth). His vault had been reported in the press of the day, but had not been located.

John and Elizabeth Hore

John Hore (*17 September 1813 † 15 October 1895) was born at Cow Pastures near Syd-
ney. A series of acquisitions and exchanges of cattle stations, first in the Monaro and then on the Upper Murray. Shrewd land exchanges, as well and aggressive expansion to acquire neighbouring properties saw Hore become one of the wealthiest squatters in the Upper Murray region. In his sixties, and without direct heir, John and Elizabeth Hore re-located to lived at “Ellerslie” St Kilda, Melbourne.

When Elizabeth Hore, then aged 82 years, died in St. Kilda on 6 February 1895, she was brought for burial to Albury where John Hore owned a family crypt. Her interment occurred on 9 February. What was meant to be sombre affair, of her being buried in the Hore family vault, turned into a major sectarian farce. In alignment with his denominational affiliation, John Hore’s family vault was located in the Catholic section of the cemetery. As Elizabeth Hore was a member of the Church of England, however, the Catholic Priest of Albury not only refused to officiate, but also “declined to sanction the interment of [her] body in consecrated ground.” As the ground on which the vault stood had been purchased outright by John Hore, the burial occurred as intended—with the Anglican priest officiating from some further away, safely standing in the Anglican section. In retaliation, the Catholic clergy “ordered the local undertaker to erect four black posts around [the vault] to indicate the ground [thus enclosed] was no longer consecrated.” So that the Hore family could not interfere, the posts were placed just outside the line of Hore’s private property.

The resulting scandal was widely reported throughout Australia. This, however, was not to be the end of the saga. The curtain to the second act rose soon after, at John Hore’s burial in October of the same year.

John Hore, also aged 82 years, died at his St Kilda home on 17 October 1895. His body was brought by train for burial to Albury on 17 October 1895 for burial the following day. The newspapers reporting his death, including the Albury papers, mentioned that he would be buried in the family vault. Likewise, the report of burial in the local press states that “[t]he remains of the deceased were removed to Albury and were, yesterday, interred in the family vault in the Albury Cemetery by the side of his wife.”

We need to be conscious not to misinterpret the term ‘vault’ in this regard as in his will of 9 August 1895, John Hore had directed that “my body shall be buried in the Church of England Section of the Cemetery at Albury in the grave purchased by me adjoining that of my late wife.” While this may have raised eyebrows among the funeral congregation at the time, the scandal broke when John Hore’s will was read and the full stipulations became public. For in his will of 9 August 1895, John Hore had also directed that I bequeath the sum of twenty-five pounds to the officiating clergyman in the Roman Catholic Church at Albury aforesaid upon the condition that he reads or causes to be read the Roman Catholic Funeral Service

26. Resident at Orrong Street, East St. Kilda.
30. Border Post 18 October 1895, p. 3.
32. A considerable sum, about $3,800 in December 2011 terms (corrected using CPI data).
over my body at the said Cemetery but if such service shall not within one hour after the reception of my body at the said Cemetery be so read than I declare that the said bequest to the said Roman Catholic clergyman shall be void and I direct that my remains shall be buried as aforesaid and the burial service of the Church of England be read and that my body be buried according to the rites of the said Church of England and the said sum of twenty five pounds be paid to the officiating clergyman of the Church of England at Albury aforesaid for his own use.  

It would appear that the Catholic priest refused to accede. It is not surprising that this stipulation of John Hore’s caused a stir in the press of the day and was reported as far as New Zealand. John Hore’s will also attracted widespread attention given the size of his estate, about £250,000, and given the number of ‘relations’, which was in excess of 50.

John and Elizabeth Hore’s Burial Place
Albury Cemetery records show, that John Hore is buried in the Anglican section of the cemetery, and that his wife is buried next to him. Grave markers exist to that effect. This, in conjunction with the stipulations of the will would suggest that Elizabeth Hore was removed from the Hore vault in response to the attitude displayed by the Catholic Church and interred in the Anglican section prior to John Hore’s death. This would have probably happened at about the same time as Hore altered his will and included the peculiar provisions mentioned above.

Conclusions
A field examination of an underground brick structure in the Catholic section of the Albury cemetery resulted in the documentation of an almost 9x9’ brick vault. The heavy construction of the vault, as well as the outside dimensions of the above-ground structure suggest that the construction of major funerary structure had been intended but never carried out.

Examinations of the historic record suggest that the structure is the family vault of John Hore, which was temporarily used for the burial of his wife Elizabeth in February 1895. Following altercations with the Catholic Church, Elizabeth Hoare was interred in the Protestant section. When John Hore was buried at his wife’s side in October 1895 the vault fell into disuse and was abandoned.

Acknowledgements
The author is indebted to the following for the provision of data or maps: Mauro Dei Agnoli (Group Leader Projects, AlburyCity); Ray Gear (Senior Town Planner, AlburyCity); Doug Hunter (Albury & District Historic Society); Helen Livesey (Albury & District Historic Society) and Bruce Pennay (adjunct, Charles Sturt University).

References

36. Equivalent to $38 million in December 2011 terms (corrected using CPI data).
37. It is worth noting that the provisions of the will, as reported in the press, stressed the point that the funeral service ‘was to be read over the body’ (emphasis mine). Clearly John Hoare wanted to avoid a repetition that the service was read from a distance.
39. Albury Cemetery, Plan 2, section D, row 7, plots 13 (Elizabeth Hore) and 14 (John Hore).
Fig. 1. Aerial view of the Albury Pioneer Cemetery at Waugh Road. Source image: AlburyCity. Date of Photograph 2 October 2011. (E493N6009 2011OCT02 05 AIR RGB1 12CM MGA55)
Fig. 2. Aerial view of the Albury Pioneer Cemetery at Waugh Road. Showing the location of the vault (A) and of the graves of John and Elizabeth Hore (B). Base image: AlburyCity.

Fig. 3. Albury Pioneer Cemetery at Waugh Road Detail of Fig. 2, showing the site in the centre of the image. Source image: AlburyCity.
Fig. 4. The site seen from northeast.
Image shot with Nikon D80 with Nikon 50mm f/1.4; post processing: stitched panorama of 5 frames Photo Dirk HR Spennemann

Fig. 5. The site seen from northwest.
Image shot with Nikon D80 with Nikon 50mm f/1.4; post processing: stitched panorama of 7 frames Photo Dirk HR Spennemann
Fig. 6. The site seen from southwest.
Image shot with Nikon D80 with Nikon 50mm f/1.4; post processing: stitched panorama of 5 frames Photo Dirk HR Spennemann

Fig. 7. The site seen from southeast.
Image shot with Nikon D80 with Nikon 50mm f/1.4; post processing: stitched panorama of 5 frames Photo Dirk HR Spennemann
Fig. 8. Plan View
(for annotations see Fig. 9).
Fig. 9. Plan View with annotations.
Fig. 10. The site seen from north.
Image shot with Nikon D80 with Nikon 50mm f/1.4
Photo Dirk HR Spennemann

Fig. 11. The entrance to the vault seen from north.
Image shot with Nikon D80 with Nikon 50mm f/1.4
Photo Dirk HR Spennemann
Fig. 12. The entrance to the vault seen from north. Close-up of the barrel vault and the decorative arch
Image shot with Nikon D80 with Nikon 50mm f/1.4
Photo Dirk HR Spennemann

Fig. 13. The entrance to the vault seen from north. Close-up of the barrel vault and the decorative arch
Annotated photograph
Fig. 14. The site seen from south. The top of the barrel vault is clearly visible.
Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo Dirk HR Spennemann

Fig. 15. The southwestern corner of the site, showing the concrete infill.
Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo Dirk HR Spennemann
Fig. 16. Detail concrete infill showing the nature of the aggregate used.
Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo Dirk HR Spennemann

Fig. 17. The northwestern corner of the site
Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo Dirk HR Spennemann
Fig. 18. The eastern face of the access to the vault. At right the groove for the boards closing off the vault.

Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo
Dirk HR Spennemann

Fig. 19. The western face of the access to the vault. At right the groove for the boards closing off the vault.

Image shot with Nikon D80 with Nikon 50mm f/1.4 Photo
Dirk HR Spennemann
Fig. 20. The vault as seen from the entrance.
Image shot with Nikon D80 with Sigma 8mm f/4 Post-processing: image straightened but not corrected for lens distortion. Photo Dirk HR Spennemann
Fig. 21. The south wall of the vault (interior view)

Image shot with Nikon D80 with Nikkor 18-200mm Post-processing: image straightened some correction for perspective and lens distortion.

Photo Dirk HR Spennemann
Fig. 22. The south wall of the vault (brick pattern, interior view)

Fig. 23. The south wall of the vault (dimensions)

Fig. 24. The south wall of the vault (interpretation)

- Groove for floor boards
- Holes for floor joists

... (continued text and diagrams from the original source)
Fig. 25. The north wall of the vault (interior view) showing access and arch structure.

Image shot with Nikon D80 with Nikkor 18-200mm Post-processing: image straightened but not corrected for lens distortion. Photo Dirk HR Spennemann

Fig. 26. The northwestern corner of the vault. Note the details of the iron lintel.

Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann
Fig. 27. The south wall of the vault (measurements)

Fig. 28. The north wall of the vault (interpretation)
Fig. 29. The access to the vault as seen from the inside. Note the details of the three iron lintels.
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann

Fig. 30. The northwestern corner of the vault. Note the details of the iron lintel.
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann
Fig. 31. The southeastern corner of the vault.
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann

Fig. 32. The southwestern corner of the vault.
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann
Fig. 33. The southeastern corner of the vault showing iron ventilation pipe
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann

Fig. 34. The iron ventilation pipe in the southeastern corner of the vault.
Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann
Fig. 35. Flower vase shaped from the bottom of a wine bottle. The top of the bottle has been cleanly cut off. Northwestern corner of the vault.

Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann.

Fig. 36. Flower vase made from pressed glass and decorated flower pot. Northeastern corner of the vault.

Image shot with Nikon D80 with Nikkor 18-200mm, no post processing. Photo Dirk HR Spennemann.