

PHASE 2 ARCHAEOLOGICAL INVESTIGATION: ALBION SPRINGS, RONDEBOSCH

Prepared for

LTA Developments (Pty) Ltd

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1. INTRODUCTION

The phase 1 investigation of the Albion site showed that parts of the Albion Mill had survived later developments and that part of the structure had been incorporated into subsequent buildings¹. Excavations adjacent to the north wall of the Schweppes factory (which also happened to be the mill wall) revealed the presence of a small arched aperture which we believe is the point at which the axle from the mill wheel passed into the gear pit. The presence of modern walls over this area prior to the demolition prevented us from exploring the area more extensively. This report deals with the results of further investigations of the area around the north wall as had been recommended in the original report.

2. OBSERVATIONS

The position of the Phase 2 excavations and a plan of the structural remains are presented in Figure 2.1. Also shown are the mill remains located during the Phase 1 investigation superimposed on a plan of the Schweppes factory, and an extract from the 1862 plan of the Mariendahl estate. This extract shows the mill and other buildings located adjacent to the spring. We noted in the Phase 1 report that the orientation of the buildings on the plan did not correspond to the foundations that we uncovered and believe that the drafter of the plan might have mistakenly reversed the outline of the buildings.

2.1 The mill

It became clear as we extended the excavation that little trace had been left of the gear pit. While the stone footings and foundations, as well as some of the brickwork and the aperture clearly relate to the mill, it appears that the original floor was removed to make way for the ice factory workings. We were however able to find a stone foundation parallel to the north wall which we believe may demarcate the south wall of the ground floor room which housed the gear pit. This locks into the west wall of the mill and the inner edge lies at 5.5 meters from the north wall.

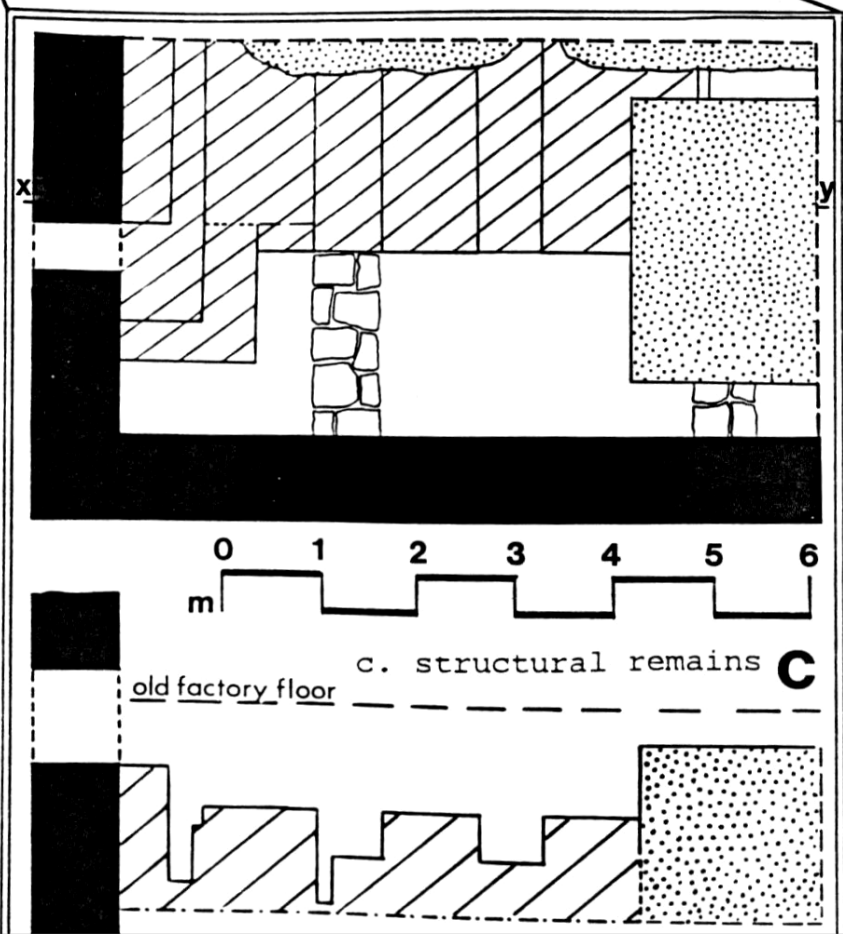
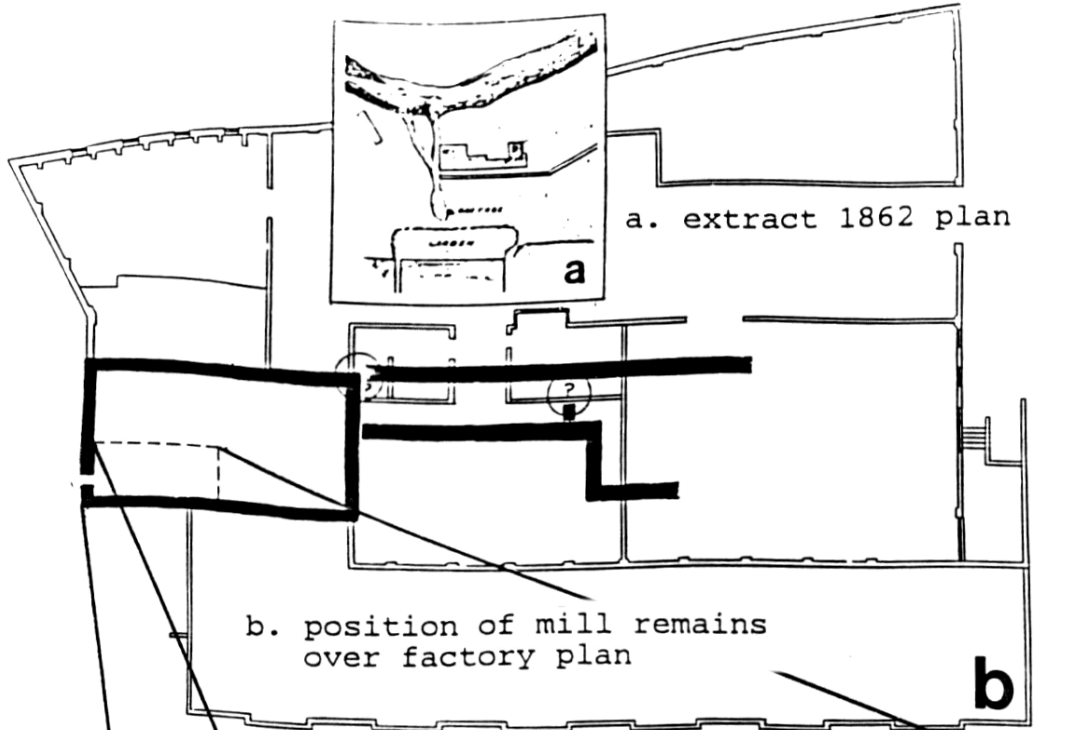
The remains of a second wall lie 1.8 meters from the north wall. It is difficult to say that this is definitely a mill related feature as it is partially incorporated into the ice factory structures. The widths of both the stone walls are identical at 630 mm but smaller than many of the outer wall foundations which were located during the Phase 1 which measured between 850 and 950 mm thick. The location of the inner wall is in terms of its distance from the north wall suggestive of the width of a conventional gear pit in many mills. Some examples of mill plans are shown in Figure 2.2 in which this feature can clearly be seen.

2.2 The ice factory


Many of the structural remains uncovered relate to the re-use of the mill buildings for an ice factory. Although no plans of the original layout are preserved, the description of the equipment gleaned from a report of the explosion of the factory in 1886², describes large ice tanks and some machinery on the ground floor. The brick features that we have uncovered


¹ Phase 1 Archaeological investigation: Albion Springs Rondebosch. Report prepared for LTA Developments (Pty) Ltd, December 1992.

² Ibid, Page 8 and Figure 2.9

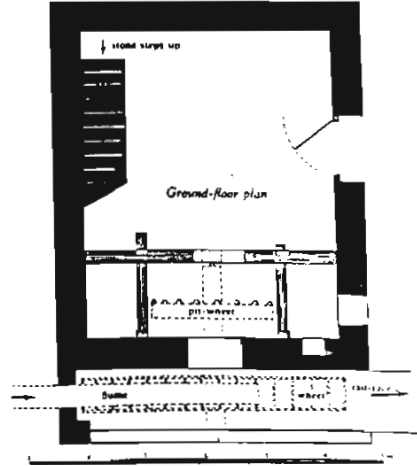
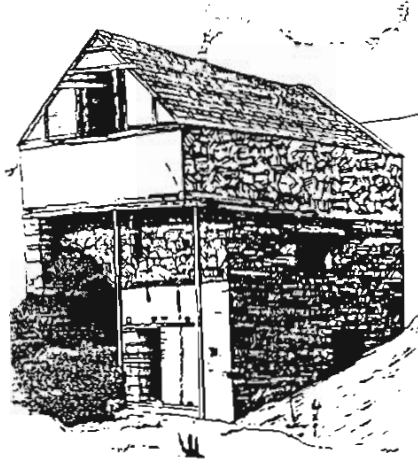


forced concrete

 brickwork

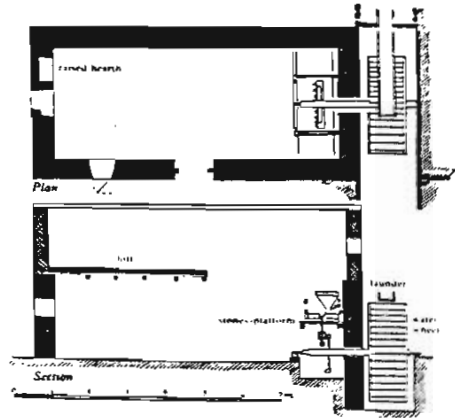
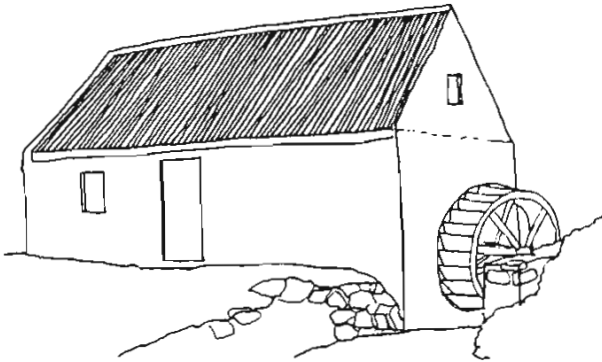
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a



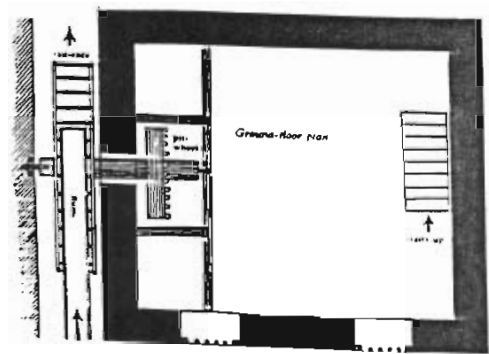
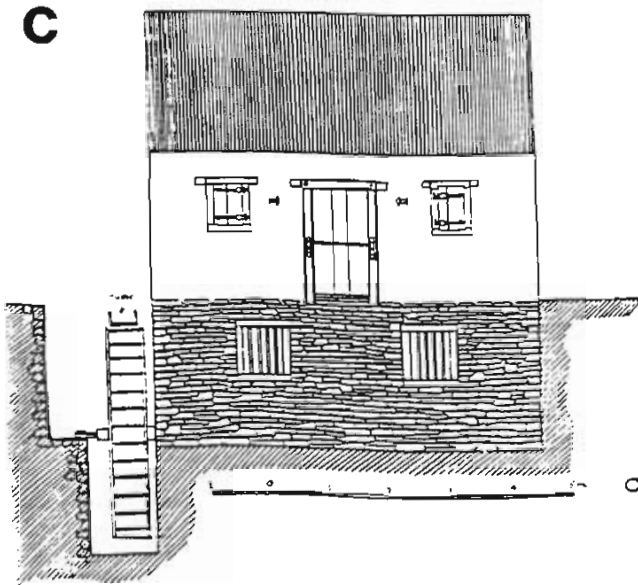
a. Bradshaws Mill - Bathurst

b



b. Verloren Vlei - Ceres

c



c. Cuyler Manor Mill - Uitenhage

2.2

After Walton 1974

are certainly a small part of a complex of structures which undoubtedly were designed to channel water to various points in the ice factory.

Our first interpretation was that water from the spring was entering the channels via a hole in the base of the north wall where some stonework has obviously been removed (see photograph 2). Water seems to be able to flow freely through this gap at present and in fact presented problems during the course of the excavations until the City Council agreed to lower the level of the water in the spring reservoir. Even after pumping water was still present in the substrate albeit at a lower level than previously.

The presence of so much ground water at the level prior to pumping forced us to consider the fact that if this had been the case during the time of the mill, it would have been impossible to have operated as the gear pit and tail race would have been flooded. It suggests that the encapsulation of the spring and the canalisation of the Liesbeeck River has caused the water table to rise at present to a higher level than was normal in the past.

A lower water table would mean that water would have to have been piped to the ice factory. We suspect that the pipe/s for this purpose may have passed through the hole in the wall below the axle aperture. All trace of this, except for the removed stones, was probably removed when the pump house was built. The brickwork against the north wall contains two obvious beam slots (see photograph 2). Although we have no indication of what these may have supported, we suspect that it might have been the "small engine" (pump?) described in the report of the fire.

3. ARTEFACTUAL MATERIAL

3.1 Mill and ice factory

Most of the deposit in this area consisted of later fills with the exception of some *in situ* deposit at one point adjacent to the west wall. This consists of a sticky black clayey silt which was also detected at other points along the same wall during the phase 1 investigation. This must have lain below the floor of the mill prior to its removal. The surface of this deposit does not necessarily mark the mill floor level as some of this deposit may have been removed. It does not appear to contain artefactual material.

It again became evident that some of the artefactual material being recovered from fills immediately above the brick features dated to the time of ice factory that was destroyed in the explosion and fire towards the end of the nineteenth century. Fragments of pinkish slate roofing material as well as amounts of lead (which had clearly melted before re-solidifying) and pieces of copper sheet seem to confirm this interpretation.

Numerous fragments of dark green bottle glass and some porcelain dating to the last century were also recovered. The most unexpected find was a brass plaque (which at some stage had been screwed to a surface) also lying in the same fills. The inscription on the plaque reads:

THE ALBION MILL
ERECTED
1872

The date is not one that we have previously come across but may refer to the date of building of the ice factory. More about this in the discussion section.

3.2 Bottle dumps

While working on site we were able to observe the demolition of the Schweppes factory and related buildings. This process revealed numerous bottle dumps on the site. A map showing basic locations of these bottle dumps is presented in Figure 3.1. In some cases buildings had been erected over these while in other cases the bottles had been deliberately used as fill along with soil and other rubble. This is particularly the case with the dump alongside the Liesbeeck River.

A variety of bottle types are represented and we have attempted to assemble a collection of the range. These include both glass and ceramic (stoneware) containers dating from the turn of the century as well as more modern specimens of Schweppes bottles with printed labels. If a museum is to be established in the pump house these can be made available for the display.

4. DISCUSSION

As a result of the later modification of the area no machinery relating to the grinding mill could be found. We can nevertheless say with certainty that some of the remains that we identified are those of the Albion Mill, although with the modifications over the years probably only the lower footings contain any of the original early nineteenth century structure attributed to Gerhardus Munnik. The position of the core building where it adjoins the pump house was easily seen after demolition of the Schweppes factory (photograph 1). The arched aperture (photograph 2) represents the point at which the axle of the mill wheel passed into the gear pit on the ground floor of the mill. This feature although it varies in structure is an aspect common to all mills driven by over-, and undershot wheels.

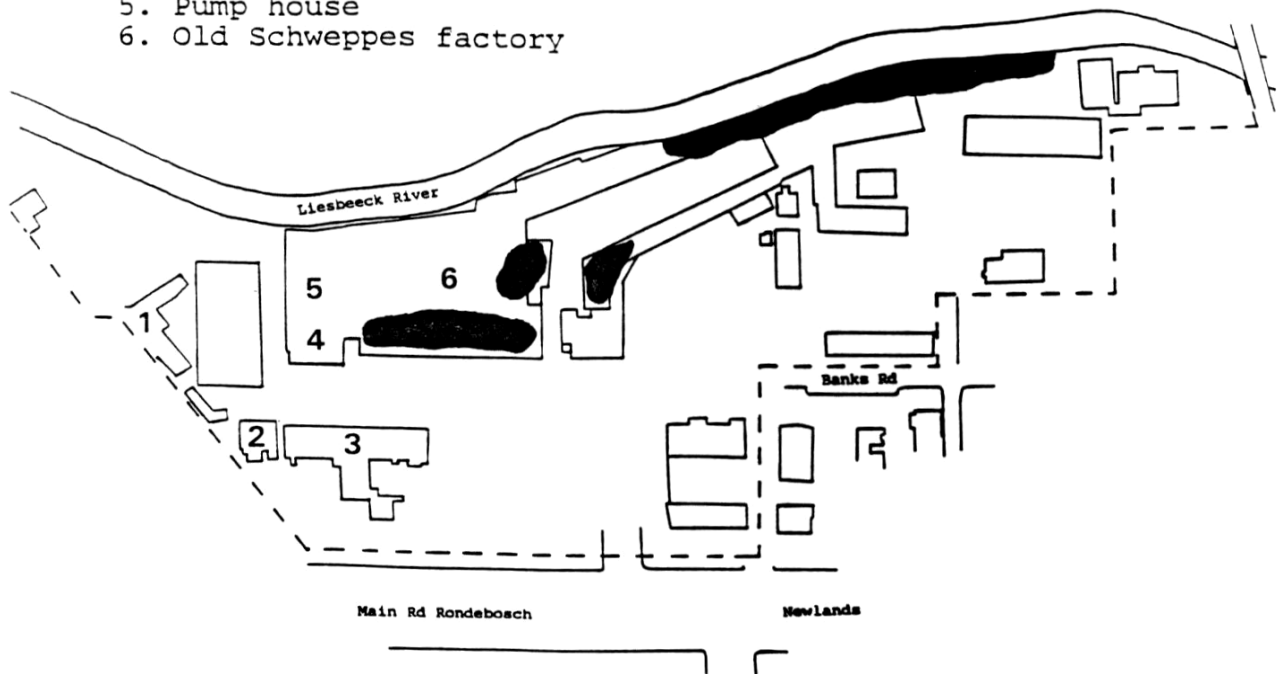
At this point we should perhaps consider the general mechanics of a water mill as presented in James Walton's book of the history of mills in South Africa³.

Firstly, undershot wheels (those driven from below) require a large amount of fast flowing water whereas overshot wheels (those fed from a mill stream or race) require far less water to derive the same amount of power. With the latter system a mill can be located away from a major water source. The wheel is usually located on an end wall where the foundation is dug deeper to accommodate the base of the tail-race which lies at greater depth than the ground floor. A cross section of the ground floor of the Verloren Vlei mill at Ceres in Figure 2.2 shows how the mechanical aspects of the grinding machinery relate to the structure. It would appear that the axle aperture is often located at the center of the end wall of the building but may also be located off-center. It is not immediately clear what would be the advantages or disadvantages of having the wheel in these different positions.

The plans of three mills with centrally positioned wheels namely, Bradshaws Mill in Bathurst, the Cuyler Manor Mill at Uitenhage and the Verloren Vlei mill at Ceres are presented in Figure 2.2. It would appear that the Albion Mill was much larger than these and had a separate ground floor room in which the gear pit was located.

³ Walton, J. 1974. Water mills, windmills and horse-mills of South Africa. Cape Town: Struik

1. Manager's house
2. Foreman's house
3. Administration building
4. Albion spring
5. Pump house
6. Old Schweppes factory

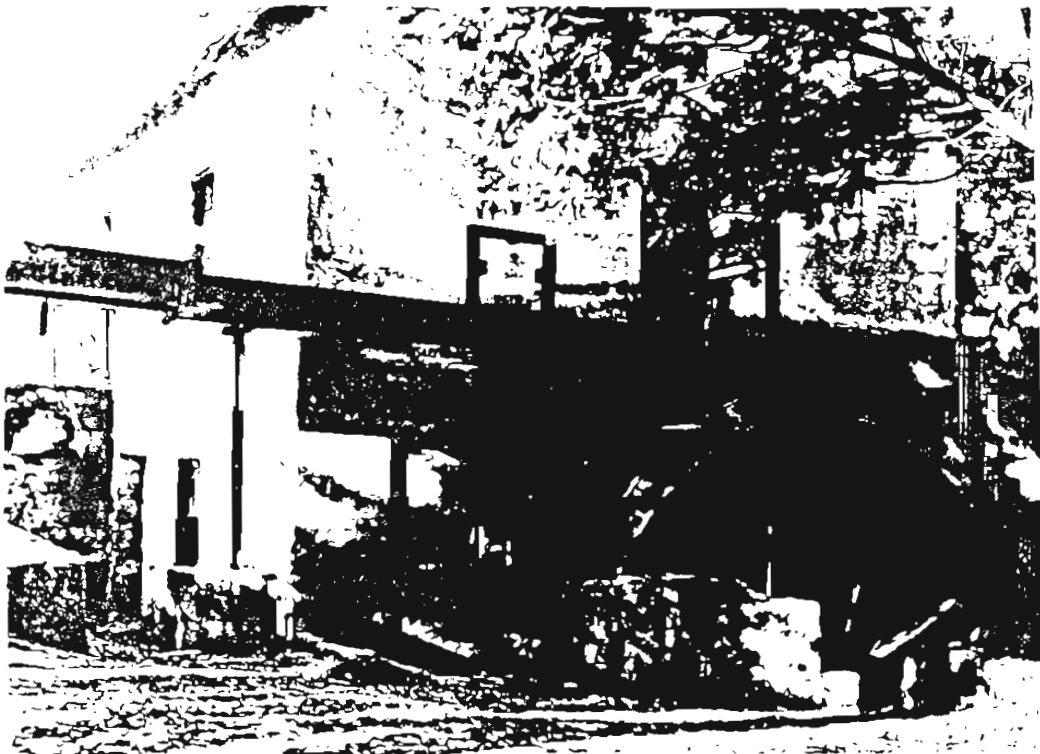


3.1





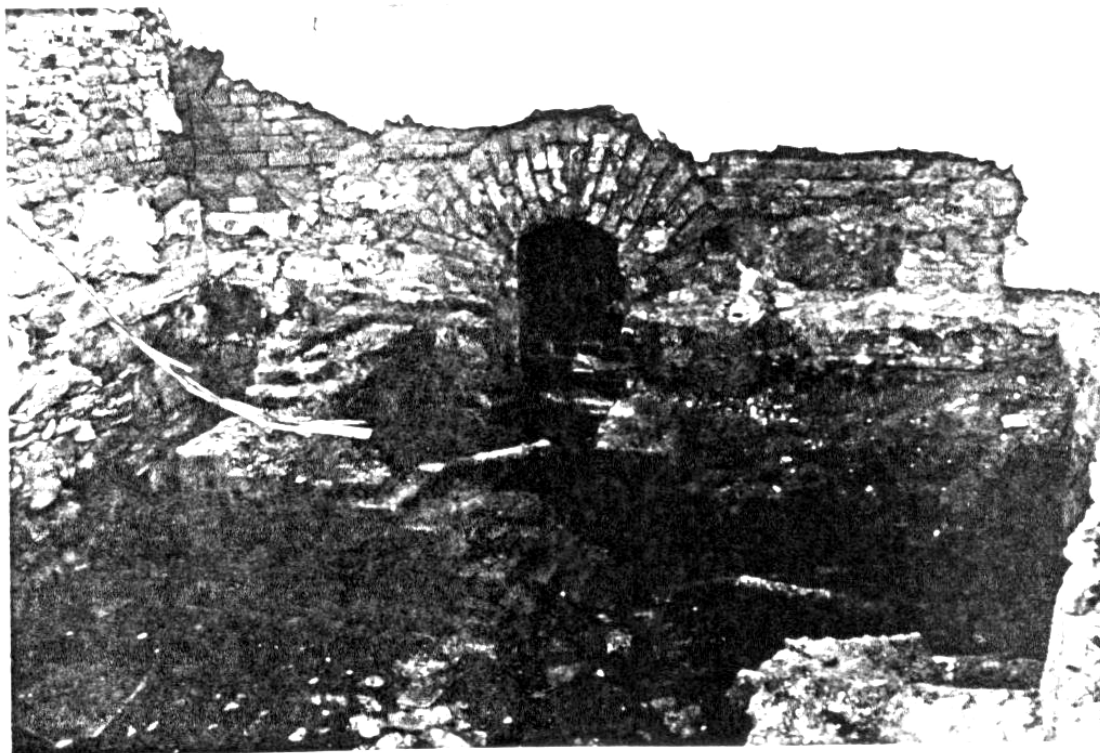
Photograph 3: The Mamre mill prior to restoration



Photograph 4: The Elim Mill



Photograph 1: Outline of the old mill core adjacent to the pumphouse



Photograph 2: Axle aperture of Albion Mill and brick features related to the ice factory

Photographs 3 and 4, showing portions of the Mamre and Elim mills respectively seem to contain striking similarities to aspects of the Albion Mill that have been identified during the investigation. Both have off-center wheels and in addition both are fed from raised wooden mill streams which can also be seen in the photographs. Although no ground plans of these mills are presented they appear larger than those in Figure 2.2 and we imagine that the Albion Mill would originally have resembled these.

In the phase 1 report we raised the issue of the positioning of the mill adjacent to the spring as we could find no evidence of the water from this source having been used to drive the wheel. Furthermore, there is ample evidence of a race having been constructed to supply water to the mill from the Liesbeeck River. The water in this race was later to become the source of numerous legal wrangles and is thus well documented. We have suggested that there may have been an embargo on spring water being used for "industrial" purposes but this is speculation on our part.

Having pondered this issue we believe we may be able to offer a possible explanation for the location; we believe that Munnik may have expediently used the channel (that must have been eroded by the runoff from the spring running into the Liesbeeck River) to construct the tail race for the mill wheel thereby saving himself some time and effort. It would have been a simple matter to divert the spring water to form a new channel. The extract from the 1863 plan, shown in Figure 2.1, shows the runoff channel from the spring was indeed bifurcated.

During the archival research for the phase 1 we found numerous references to the mill in property transfers. We could not however find any evidence after 1835 to suggest whether it was operating or not. We are certain that the mill was erected c1817 and not in 1872 as the inscription on the brass plaque would have one believe. The use of the term mill may of course have been used at this time in a broader context i.e. an industrial building (e.g. cotton mill). If this was the case then the plaque may be a reference to the construction of the ice factory. Although we believed that this took place in 1878, it may in fact have originally been built by Jacob Letterstedt in that year.

5. CONCLUSION

Both the Phase 1 and 2 investigations of the Albion Springs site have recorded aspects of the early history of Rondebosch which otherwise would have been lost. The necessity in conducting excavation programs such as this has been demonstrated to assist with the interpretation of written records. With any investigation of this type it is impossible to say that all possible reference to the site and the buildings have been traced as in many instances additional reference are found in obscure sources which may have no immediate connection to the site. We hope this investigation may in future provide a platform for others wishing to research aspects of this part of our history.

Should plans for a museum in the pump house be realised, we reiterate that artefactual, as well as archival material can be made available for display.

6. ACKNOWLEDGEMENTS

We would like to thank Mr Rowe of the City Council waterworks branch for arrangements to pump out the reservoir.

7. INVESTIGATION TEAM

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