Godden Mackay Logan
Heritage Consultants

# Mungo Scott Flour Mill, Summer Hill

## Machinery and Equipment

## Heritage Assessment

Report prepared for AHMS Pty Ltd Pty Ltd

September 2008

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## Report Register

The following report register documents the development and issue of the report entitled Mungo Scott Flour Mill—Machinery and Equipment Heritage Assessment, undertaken by Godden Mackay Logan Pty Ltd in accordance with its quality management system. Godden Mackay Logan operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2000.

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# 1.0 Introduction

## 1.1 Background

Godden Mackay Logan has been engaged by AHMS Pty Ltd to prepare an assessment of the heritage significance of the industrial machinery and equipment currently installed at the Mungo Scott Flour Mill, located at Summer Hill.

## 1.2 Study Location

The Mungo Scott Flour Mill is located at 1 Smith Street Summer Hill. The site is bound by Smith Street, Edward Street, the rear of properties facing Edward Street and the Dulwich Hill-Lilyfield Goods Railway Line (the Wardell Road Line). The site location and boundaries are shown in Figure 1.1.

## 1.3 Current Heritage Listings

The Mungo Scott Flour Mill is mentioned on the Ashfield Council draft Local Environmental Plan as a heritage item of Local significance but the adoption of this item as part of the Schedule has been deferred under Section 68 (5) of the Environmental Planning and Assessment Act, 2002.

## 1.4 Methodology

This Industrial Heritage Assessment has been prepared having regard to the methodology outlined in the *NSW Heritage Manual* guidelines for the preparation of Conservation Management Plans (NSW Department of Urban Affairs and Planning and the Heritage Council of NSW, November 1996, as amended July 2002). It also follows the approach set out in *The Conservation Plan*, by James Semple Kerr (National Trust of Australia (NSW), fifth edition, 2000) and the guidelines of *The Burra Charter: The Australia ICOMOS Charter for the Places of Cultural Significance 1999* (a copy of the Burra Charter is provided in Appendix B of this report).

The terminology used in this report is consistent with the *NSW Heritage Manual*, prepared by the NSW Heritage Office, and the Burra Charter.

## 1.5 Limitations

This report has been prepared on the basis of a site survey of the extant industrial machinery and equipment at the Mungo Scott Flour Mill. Much of the mill is still active in manufacturing flour and consequently, inspection was limited to that possible without interference in the mill's operations. This report does not include an assessment of the site for Indigenous heritage values or Aboriginal archaeology, and does not include an assessment of the historical archaeological potential for below-ground remains of prior European occupation.

## 1.6 Author Identification

This report has been prepared by Tony Brassil, Industrial Archaeologist. The report has been reviewed by Sheridan Burke, Partner of Godden Mackay Logan.

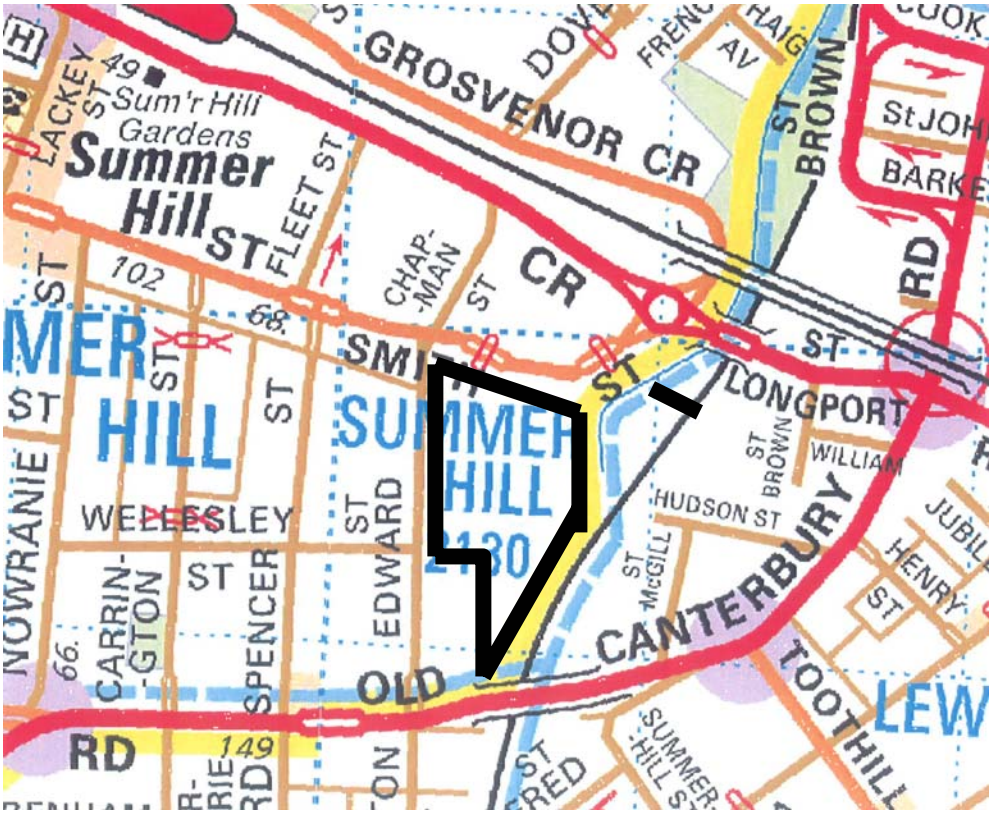


Figure 1.1 Site location, Summer Hill (Source: NSW Dept of Lands: Six Viewer - © Sydway Publishing Pty Ltd).

Figure 1.2 Aerial Photograph, Mungo Scott Flour Mill Summer Hill (Source: NSW Dept of Lands: Six Viewer; Ausimage © SKM 2008).

# 2.0 A Brief Description of the Flour Milling Process

## 2.1 Flour Milling

Flour milling is the complex process of grinding or milling grains of wheat in order to produce flour. Flour comes from the central section of a wheat grain, which must be separated from both the wheatgerm and the husk or bran which covers the grain.

A wheat grain consists of three main parts: the bran, or outer covering, which is composed of several layers; the germ, which is the embryo of the new plant; and the starchy endosperm, which is the part that, when milled, forms flour.

The object of flour milling is to separate the endosperm from both the bran and the germ in order to produce a clean white flour. Both bran and germ are regarded as impurities, as both have a deleterious effect on the baking properties of flour.

Endosperm forms about 85% of the wheat grain: germ is about 2.5% and bran about 12.5%, although this varies among the different types of wheat.

## 2.2 The Milling Process

Basically, milling activities can be broken into four categories.

1. Reception and storage of wheat.
2. Cleaning and preparation of wheat for milling.
3. Milling of wheat into flour and associated by-products.
4. Packaging and dispatch of flour and by-products.

Each of these processes is addressed below.

## 2.3 Reception and Storage of Wheat

In the twentieth century, most mills in Australia were constructed beside railway lines as wheat, grown in country areas, was transported to metropolitan areas by rail. Wheat was raised from rail dump chutes by belt, bucket, screw or pneumatic conveyors and stored in bins or silos.

Storage on-site for large quantities of wheat was an important requirement for any mill, to offset fluctuations in supply and to allow the correct blend of grains to be made continually.

Storage facilities were for bagged wheat were generally large warehouse style buildings, with flat, open floors, often fitted with bag conveyors and loading chutes. Wheat was transferred after cleaning into large timber bins with hopper bases from which the mill was fed, known as grinding bins.

With bulk handling for wheat, most mills installed large receiving bins or silos, fed directly from conveyors that received the wheat from the transport vehicle. These silos also functioned only as temporary storage, as the wheat was then cleaned and transferred into the grinding bins.

## 2.4 Cleaning and Preparing Wheat

On its arrival at the mill, all wheat contains foreign seeds, small stones, earth, dust, chaff and straw, husks and a variety of metal items. Various items of plant are needed to remove the impurities and allow only uncontaminated wheat into the mill.

Wheat must also be conditioned, which means adjusting its moisture content to the correct level for the most efficient separation of the endosperm from the bran. Normally, Australian wheat requires the addition of water to condition it.

### 2.4.1 Preliminary Cleaning

Preliminary cleaning is normally done by running the wheat over a separator or series of vibrating screens and a magnetic separator to remove any impurities made of iron. In this process, the larger sized impurities are first drawn off, while wheat and smaller impurities fall through the sieve and are saved. A second, smaller-grade sieve then catches the smaller particles, whilst letting the wheat through. As some wheat is usually also caught in the sieve in this stage, the sieved material may be directed back to the beginning of the cleaning process to be sieved again.

The wheat then continues to a water wheel, which washes the wheat and conditions it by raising the water content to the desired level. Washing removes dust and the wheat is then placed in conditioning bins, which are large timber storage receptacles, often located on the lower floors of mills (where temperatures are stable).

The wheat stays in the Conditioning Bins until testing reveals that the water content has stabilised at the desired level. From the Conditioning Bins, the wheat is taken to the Grinding Bins, which are normally inside the mill building itself and positioned above the Break Mills. The wheat passes from the bins through a wheat governor, then over the final permanent magnet and on to the first of the Break Mills.

## 2.5 Milling the Grain

### 2.5.1 The Break System of Roller Milling

The machines used in the Break System are known as roller mills. Essentially, they consist of two hardened steel rollers working in pairs, which are so geared that the upper roll turns two and a half times as fast as the lower roll. In Break Mills (so called to differentiate them from roller mills used for other stages of milling), both rolls are fluted with grooves of a saw tooth section which run at a slight spiral along the rolls. The rolls on the First Break usually have about ten or twelve flutes per 25 millimetres, while the flutes of succeeding break rolls become progressively finer. As the grains pass through the rolls, they are held by the bottom roll while the faster top roll shears them open and scrapes off part of the endosperm. The setting or clearance between the rolls can be very accurately adjusted.

The milling of grain commences with the grains of wheat passing through a series of Break Mills, referred to as First Break, Second Break and soon. These progressively break down the grain and scrape the endosperm away from the bran. After passing through each of the break rollers, the flour material is ‘scalped’, which separates the endosperm and leaves the majority of the bran behind. After passing through four, sometimes five, Break Mills, each of which has its rollers set closer together than the last, hence reducing the size of the particles produced, as much of the endosperm as possible has been removed from the bran.

### 2.5.2 Scalping

After each Break, the released endosperm is separated from the torn open wheat grain husks. This process, which is known as scalping, is normally done by Plansifters. The Scalpers produce two streams of output, one containing a majority of endosperm and one containing a majority of bran and wheatgerm. The endosperm mixture (known as 'stock') is delivered on to the Purifiers and the bran mixture is passed onto the next Break Mill or, if at the end of the Break process, onto the next bran processing stage.

The bran and the tougher wheatgerm may be separated by a special Germ Separator. Bran may be divided in a simple plansifter into coarse and fine grades

### 2.5.3 The Grading of Stocks

The stock that has been sifted out by the Scalpers consists of particles of various sizes. The stock also contains very small pieces of bran mixed in with the endosperm, which must be removed (to produce pure white flour). In order to allow the Purifiers to work efficiently, the stock must first be graded into several groups by size. In a large mill, there are three basic sizes:

1. coarse particles, which may be further divided into coarse semolina, medium semolina or fine semolina;
2. medium particles, which are further divided into coarse middlings, medium middlings and fine middlings; and
3. fine particles, which are known as dunst or break flour.

Not all mills divide the material into these eight categories. In a small mill, perhaps only three divisions are made. Grading of the stock is carried out, generally, in a further series of Plansifters.

### 2.5.4 Purification

The graded stocks are sent to the Purifiers, which are machines that employ the sifting principle with the addition of air currents rising through the sieves to extract as much bran as possible. In general, purifiers consist of long, narrow, slightly sloping sieves which oscillate rapidly, causing the material to move from the upper to the lower end. The lightest impurities (generally flakes of bran) are drawn away by air currents and separated from the heavier endosperm before it is sifted through the screens. By suitably graduating the screen meshes, the stock is sub-divided into differently sized particles. This process produces stocks ranging from pure endosperm to endosperm still contaminated by small wheatgerm particles and bran flakes.

Purified stocks, graded into sizes, are now ready to be finally ground into flour using the Reduction System. The Scratch System is used to further process the stock that still contains impurities.

### 2.5.5 The Scratch System

The impure stock, which consists of pieces of endosperm with bran still adhering to them, is now subject to the Scratch System. This consists of putting the stock material through another set of roller mills and then a new range of sifters and purifiers. This set of roller mills has very finely fluted rolls and they reduce the particles of stock to smaller sizes in small increments. As with the Break System, after each milling, the stock is run through Scalpers and progressively refined. The final bran particles are removed by Purifiers.

### 2.5.6 The Reduction System

The purified stock is finally converted to flour using the Reduction System. It is sent through a series of reduction roller mills to progressively grind it into flour. All grades of endosperm stock except the finest are subject to reduction milling. The finest grade requires no further milling.

Once the stock has been passed through a Reduction Mill, it is sifted to remove the finest grade of flour. The coarser stock which remains may then be sent directly to the next Reduction Mill or it may be further graded in a sifter, with each of the output grades being sent to the appropriate Reduction Mill for further milling.

The final product, flour, is then sent to the final processing and redressing. Processing depends on the type and quality of grain and the intended use or market for the flour. Processing may include:

- bleaching, either natural or by the addition of powder or gas bleaching agents;
- improving, which involves treatment of the flour with powders or gas to improve its particular cooking properties; and
- adding additives, such as diastatically active malt flours (yeast foods), vitamins or minerals.

Redressing is a final sift of the stock to eliminate any lumps and especially to strain out any insect eggs, moths or other impurities which have survived the processing or have crept into the stock during the process. It utilises plansifters, centrifugals and purifiers.

After Redressing, the flour is delivered to storage tanks or is bagged and dispatched.

## 2.6 Packaging and Dispatch of Flour and By-Products

### 2.6.1 Flour

In the modern era, milled and refined flour usually passes through a continuous pneumatic conveyor and is transported via stainless steel pipes to a large stainless steel silo. From the silo, it is normally loaded into road or rail tankers for delivery to a bakery or to a packaging plant.

Until relatively recently, most refined flour was bagged at the mill for shipment. Almost all mills, except the most modern, still possess floors where the bagged flour was stored prior to being sent via chute, loaded onto a truck and transported to a bakery or to a wholesale or retail outlet. Some mills provided facilities for production of retail packages within the packing areas of the mill.

### 2.6.2 By-Products

The two main by-products from Australian mills are pollard and bran. Both products are normally sold in sacks but may be sold in bulk in particular circumstances. Bran from the Break and Scratch systems is run through a Bran Finisher, which separates the bran from the remaining endosperm. The endosperm and other dust is combined and delivered into the Pollard System, whilst the Bran is delivered to the Bran System.

The Pollard System collects all dust and screenings from all stages of the process and mixes them into a uniform product, suitable as a stock or poultry feed. The Bran System takes the bran output from the Bran Finisher and separates it into coarse and fine grades. A proportion of both by-products may be diverted to a Premix Sifter where it is combined with flour to produce wheatmeal and wholemeal flours.

Both by-products either pass through a weighing machine or pass into a bag-filling apparatus, where the material is weighed automatically as it packed into a bag. More modern flour mills now have silos which collect both bran and pollard. These are trucked via road tanker to feed stock suppliers or pellet manufacturers in the same way that flour is transported.

### 2.6.3 Speciality Products

Some mills provide facilities for separating the wheatgerm from the bran, producing wheatgerm as a speciality product. This requires additional equipment to separate the germ and convey it to dedicated storage and packaging facilities.

Other speciality products include:

- Fine Bran, sold as a health food supplement and usually comprising only a graded portion of the bran production from the mill;
- Brown Flours, either wholemeal or wheatmeal, containing fine bran and/or pollard which has been added back into the white flour; and
- Self-Raising Flour, which has baking soda plus acid calcium phosphate added to the white flour.

## 2.7 References:

The information in this paper is based, in part, upon:


- Lockwood, J F, *Flour Milling*, Henry Simon Ltd, England, 1960;
- Several interviews with millers employed at Edwin Davy's Flour Mill, Pyrmont.
- Process Diagrams and other documentation provided by Weston Milling Ltd

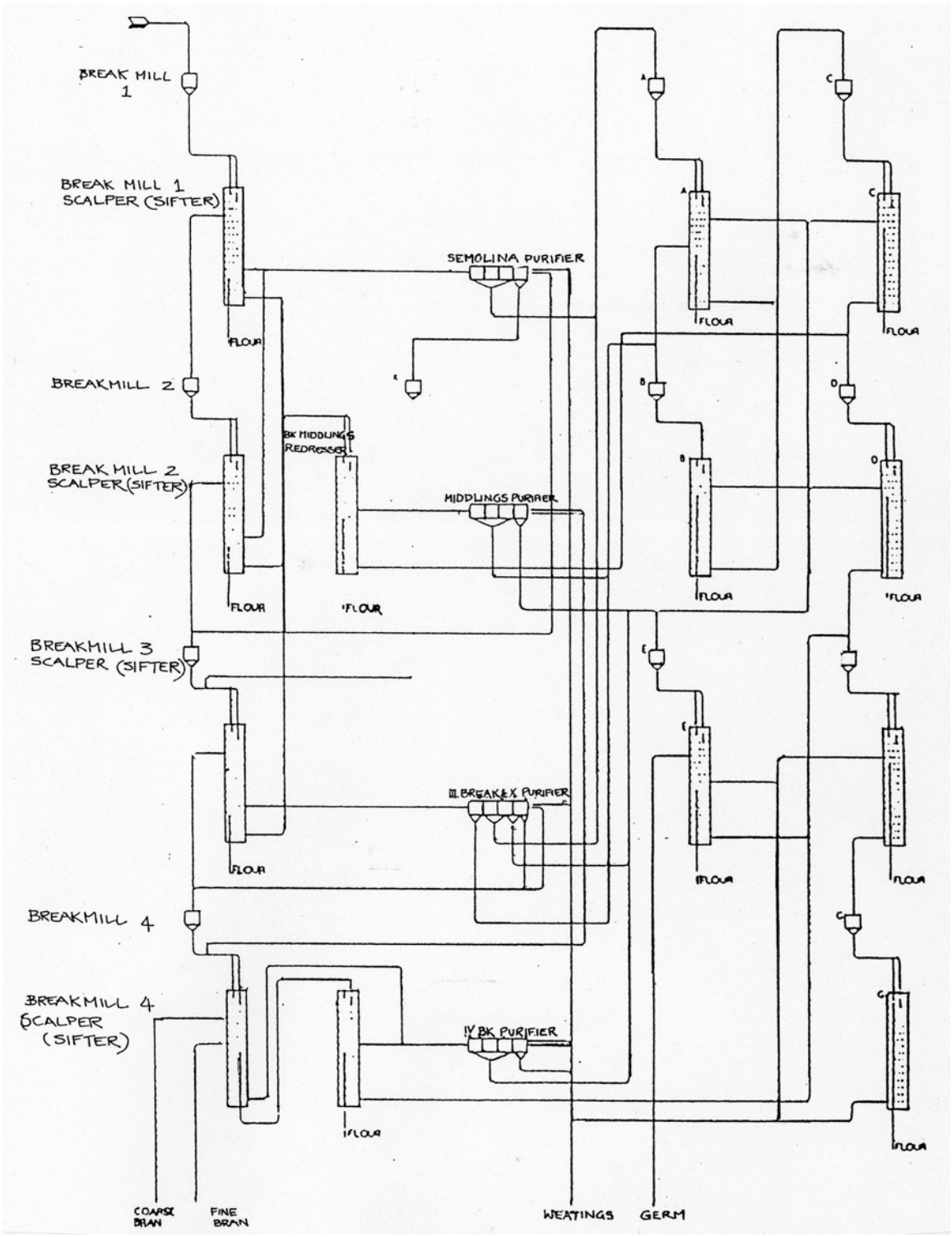


**Figure 2.1** A typical process diagram of a simple flour mill of small capacity.

# 3.0 The Mungo Scott Flour Mill - Historical Context

## 3.1 Brief History of the Mungo Scott Flour Mill

In 1912, the land now occupied by the Mungo Scott Flour Mill was resumed from the estate of John Pyle by the Railways and Tramways Constructing Authority for the construction of a new freight railway line, officially known as the Wardell Road line, to connect the Darling Harbour Goods Yard to the goods railway line from Sydenham to Belmore. The land which ended up not being required by the Authority was sold to Mungo Scott Ltd in 1917 and a railway siding into the site was constructed in 1918. Mungo Scott purchased additional land facing Edward Street and began construction of a new flour mill, store and silos in 1921. The mill buildings consisted of load-bearing brick walls, timber posts, roof framing and floors and corrugated galvanised iron roofing.

The mill began operating in June 1922, after which Mungo Scott Ltd vacated their mill in Sussex Street, Sydney. The firm had originated in 1895 as Messrs Aitken and Scott and was called Mungo Scott Ltd by 1901.

The mill underwent its first modification less than five years later, when a fire on 13 January, 1927 destroyed a flour store and part of the mill. About 10,000 bags of flour and offal were lost, as well as the building in which it was stored, and a small portion of the milling machinery. The main mill building, however, was not damaged significantly. Reconstruction of the mill was commenced immediately, supervised by architect Arthur William Anderson, and the rebuilding was carried out by Henry Simon (Australia) Ltd. The western section was reconstructed and the damaged section was repaired and extended, with a new roof. A new loading platform was also constructed and the mill was back in full operation by September, 1928.

During the 1930s, the mill offices were extended and enlarged and ancillary shed structures built. An air-raid shelter was constructed in 1942 and, in 1943, a small building constructed as stables for the Mill in 1922 was altered to serve as the Amenities block.

In 1947, an Experimental Laboratory was built to the south of the air-raid shelter. The building has since been modified, with a wide awning projecting off its eastern side, and serves as a store. Silos had also been constructed adjacent to the mill building by early 1950 and alterations to the mill offices occurred in 1955. During the 1950s, Ltd became part of Allied Mills Ltd but continued to trade under its own name.

In the 1960s, residential properties along Edward Street were purchased and major building activity commenced. New steel bulk flour and offal storage silos, an out-loading bay and a weighbridge and office were constructed in 1963. In 1964, a large two storey office building was constructed facing Smith Street, which was then extended in 1969 and extensively reconfigured during the 1980s.

Other building activity which took place during the l960s included construction of workshops around the air-raid shelter in 1964 and 1966, additions to the bulk flour storage silos in 1965 and construction of the large bulk wheat storage silos at the southern end of the site between 1965 and 1969.

Additional items were added to the Mill's infrastructure from the beginning of the 1970s and additional land was purchased along Edward Street. Buildings on this land were demolished and the resulting space used for car parking. Amongst the various items constructed since the 1970s are the general store facing Edward Street, other storage sheds at the southern end of the site, a brick and steel main gate along Edward Street in 1972, a large warehouse north of the mill building in 1975, two bulk-meal storage bins and an out-loading system adjacent to the bulk flour storage bins in 1985.

## 3.2 The Development of Flour Milling in NSW

The early history of flour milling in NSW is closely tied to the progress of European settlement, the spread of agriculture and the availability of transport for both the wheat and grain. Wheat and other grains were amongst the first crops established in the colony and the first mills were portable hand mills, brought with supplies of grain in the early transport ships.

Milling in the first half of the nineteenth century was based on the use of stones for grinding and development was largely focused on the motive power applied to the stones. The earliest mills were wind, water or animal driven, Sydney being notable for having nineteen windmills built before 1827.[1] The application of steam engines to flour mills, first recorded in England in the 1780s, was brought to Sydney in 1815 by John Dickson, where the first steam engine to be established in Australia was installed to drive Dickson's Flour Mill at Darling Harbour. The second steam engine to be brought to Australia was also for flour milling, being installed in Thomas Barker's Mill, also at Darling Harbour.

The location of any flour mill was an important aspect of its operation. The raw material, wheat, had to be delivered from the farms to the mill by ship or wagon and the produce, flour, had to be delivered to markets and merchants. The logistics of transport and its accompanying economics often dictated whether a mill would be more successful located close to the grain producing areas, close to the market place or another location which was convenient for transport in both directions. As the technology developed, access to support facilities, such as machine and engineering supplies and fuel supplies, was a significant factor. Another factor was that wheat was a more durable traveller than flour.

Historically, prior to 1850, most of the wheat consumed in New South Wales was grown in two main areas, the Hawkesbury-Nepean Valley and along the Hunter River. It was largely processed in mills in the cities of Sydney and Newcastle, often located on a waterfront to take advantage of river and coastal shipping. An additional consideration was that, for much of this period, local wheat production was less than the demand for flour and the colony was a regular importer of grain.[2] Country areas and other remote settlements were generally served by a small-scale local mill, powered by wind, water or animal until the 1840s, after which steam power became common in these areas as well.[3] Wheat production in these areas tended to be close to that necessary to satisfy local demand.[4]

After the 1850s, the situation changed dramatically. Following gold discoveries, self-government and the rise of European immigration, the population of New South Wales rose significantly. Between 1851 and 1871, the population of the Sydney Metropolitan area rose from 53,924 to 137,776, whilst the proportion of the total New South Wales population resident in this area remained the same, indicative of a similar rise of the non-urban population.[5] Over this period, the acreage of wheat under cultivation rose modestly but saw a dramatic shift in location from the coastal areas to areas west of the mountains and into areas previously unsettled. In 1851, coastal farms produced 48.5% of the total wheat production, falling to 10.9% in 1871 and to 5.2% by 1876.[6]

The difficulties of transport were not changed and little of the wheat produced in the west was transported to the coastal markets, it being predominantly directed to booming local area consumption. The decline of coastal wheat production is largely attributable to severe outbreaks of wheat rust in these areas and shortfalls were covered by imports of wheat brought by shipping.[7] In the coastal areas, successful mills were those close to shipping facilities with good access to the major markets; in country regions, most significant population centres had a steam-powered mill grinding wheat for the local area market by the mid 1880s.

At this stage, two technological developments came to fruition. The railway system was first built from Sydney to Parramatta in 1854 and had, by the 1880s, extended to most major rural centres. Rail transport not only opened up vast areas of the state to agriculture, it provided rapid and relatively cheap transport of wheat and flour in any direction around the state. In country areas, mills rapidly relocated to areas close to the railway stations, with the effect of concentrating the milling in a number of larger regional mills which displaced the local town mills. City mills benefited by the improved access to wheats and were often better placed to select and combine different grains to produce a better quality product, however, they also faced new competition from country mills delivering flour to the city markets. Balancing these effects was a system of tapering freight charges, introduced in 1876, culminating in the "milling in transit" rebates introduced in 1887. The effect of these was to equalise freight costs for all mills, irrespective of location, so that successful mills were those that were well-managed, had adequate and cost effective machinery and were large enough to take advantage of economies of scale.

Roller milling appeared in the 1880s and was a significant improvement on stone grinding, which had struggled along for many years with the disadvantages of heat through friction impairing the flour quality, the production only of whole-meal flours and the regular and expensive maintenance required to maintain optimum performance. Roller milling, first developed in the 1830s in Switzerland and Hungary, became significant when adopted by England and the United States in the 1870s and its advantages in production volumes, flour quality and ease of mechanisation were then recognised. The first roller mills were installed in Walter Duffield's Gawler Mill in South Australia in 1879. NSW saw two roller mills established in 1883, J. Pemmell Mill in Sydney and J & J Hayes Mill in Goulburn. By the end of the 1890s, virtually all major mills in NSW were using roller milling technology.[8] In this regard, the most significant factor was the virtual abandonment of stone-ground flours by the marketplace in favour of pure, white flour of several defined grades, such as could only be produced by roller mills.

With its wholesale adoption throughout the industry, roller milling did not immediately affect the geography of flour milling, except insofar as the capital investment required tended to eliminate small local mills. Larger firms invested in the new technology, either converting an existing mill or establishing a new mill. In many country centres, a new roller mill was opened through venture capital and the existing, long-established, successful grindstone mill was typically closed within a few years. Overall, though, roller milling saw minor concentration of the industry into larger mills at the larger centres, without dramatically changing the general production pattern.

The development of the flour milling industry in the first half of the twentieth century was a progression along the line established at the end of the nineteenth. Roller milling technology grew in size and sophistication, the quality of the flour produced inspiring improved cleaning, grading and dressing machines to further refine and improve the flour quality. This process saw continual re-equipment of existing mills until the late 1920s, when the economic downturn and the subsequent World War caused, as it did in many industries, a stagnation of growth and development. The effect on the distribution of mills was more gradual and tended to favour mills located in major cities, where access through transport to a wider source of grains enabled those mills to select blends of grains which could ensure consistently high-quality flour. Furthermore, export of flour had grown into a significant trade and those mills with easy port access were well placed to diversify their markets and ensure their viability and growth. The most successful formula involved a site large enough for expansion, in a city location close to major markets, with a rail siding for grain delivery and close access to a wharf for export delivery.

Steam technology for the production of power gave way, during this period, to electricity and this also gave a gradual advantage to the city mills. Electricity for industry was generally available earlier in the city than in the country centres and it was significantly cheaper and cleaner to use.

The latter half of the twentieth century brought great changes to the industry as transport technologies, electrical automation and greater resources to manage large-scale operations, including supervision and control of plant, became available. Pneumatic grain and flour handling technology and computerised electronic process control within the mills allowed far greater volumes of flour to be processed than ever before. In the 1960s and 1970s, a number of very large mills (by pre-war standards) were built, close to rail or major road transport routes; these were predominantly in city and coastal areas but a number of large regional mills also exist.

A great number of small and medium sized mills closed during this period, particularly in country centres. Typically, they were acquired by the larger milling corporations at a stage when capital investment was required to maintain profitability and the large corporations, as a rule, closed these mills to consolidate the market for their large mills.

A few small and medium sized mills survive in odd locations where a particular niche or advantage exists. Mostly, these mills operate as part of the total operations of a large milling company, producing specialty flours and niche products or have continued be operate where their profitability is supported by the purchasing and marketing opportunities available to a large milling consortium. Recently though, changes in city land values have meant that land is more valuable for redevelopment than continued operation and, as a consequence, the majority of the older city mills have ceased operations in the last two decades.

## 3.3 Comparative Context

The Mungo Scott Flour Mill at Summer Hill was one of many flour mills constructed in New South Wales immediately after the end of the First World War utilising the roller milling technology that had revolutionised the manufacture of white flour in Europe in the late 19th century. Gillespie Bros opened a new mill at Pyrmont in 1921, Crago Ltd constructed major extensions to their 1896 mill alongside the railway line at Newtown in the same year, John Darling and Son built a mill at Rhodes (now demolished) between 1918 and 1920, the Great Western Milling Co. Ltd constructed the Victoria Mill at Dulwich Hill (on the same railway line as the Mungo Scott mill), the Austral Mills at Parramatta were expanded in the early 1920s and A McLeod & Sons completed a mill at Merrylands in 1925. This activity reflected a general trend to relocate milling away from country centres to metropolitan Sydney, however, George Fielder & Co also erected new premises at West Tamworth in the first half of the 1920s.

Generally, these mills presented a uniform appearance, with rectangular brick gable-roofed buildings of four or five storeys, housing mill equipment and related components operating in vertical sequences, plus various ancillary buildings. Some mills incorporated silos at an early stage, whilst others added silos over the ensuing decades. All were serviced by rail and all were electrically powered.

A comparison of the capacity (gauged by output of sacks per hour of flour weighing 91 kilos or 200 lb) of each mill illustrates that the Mungo Scott mill's 47 sacks/h was a mid—to large sized example of a metropolitan roller flour mill. The John Darling mill at Rhodes had a 50 sacks/h capacity, Gillespie's at Pyrmont produced 60 sacks/h, the expanded Crago mill produced 50 sacks/h, Great Western Milling's Victoria Mill produced 30 sacks/h, whilst the Austral Mill at Parramatta was relatively small with a capacity of only 20 sacks/h, as was the Tamworth mill of George Fielder and Co at 17 sacks per hour and Edwin Davey and Sons opened at Ultimo in 1911 with a 15 sacks/h output and was rebuilt after a fire, electrified and expanded by 1930 to a 30 sacks/h capacity.[9]

In the mid-1930s an inquiry was held into the wheat, flour and bread industries. One of the tables prepared for the fourth report of the Commission was a table showing the distribution and capacity of

flour mills in Australia in 1932-33. The following two tables[10] indicate the capacity of the New South Wales metropolitan mills and compare them with the other states of Australia.

**Table 3.1 Capacity of New South Wales Metropolitan Mills, 1933**

| Output Capacity | Number of Metropolitan Mills in NSW |
|---|---|
| Less than 11 sacks per hour | 3 |
| 11-25 sacks per hour | 6 |
| 25-50 sacks per hour | 2 |
| More than 50 sacks per hour | 5 |

**Table 3.2 Capacity of Australian Metropolitan Mills, 1933**

| State | Number of Metropolitan Mills | Total Metropolitan Output |
|---|---|---|
| New South Wales | 16 | 518 sacks per hour |
| Victoria | 9 | 398 sacks per hour. |
| South Australia | 8 | 130.25 sacks per hour |
| Queensland | 3 | 143.75 sacks per hour |
| Western Australia | 11 | 103 sacks per hour. |
| Tasmania | 1 | 26.25 sacks per hour |

Of the mills constructed in Sydney during this century, not all remain in operation. Apart from the Mungo Scott mill, others still manufacturing flour products include the contemporary White Rose Mill at Homebush, the upgraded and remodelled McLeod's Merrylands mill and the later Clifford Love flour mill at Enfield. Others, such as the Crago mill at Newtown and the Victoria Mill at Dulwich Hill, have been redeveloped for residential purposes, whilst a number have been demolished, such as the Edwin Davey and the Gillespie mills at Pyrmont.

## 3.4 Endnotes

[1] Fox L, Old Sydney Windmills, L. Fox, Sydney, 1978.

[2] Linge G. J. R., Industrial Awakening - A Geography of Australian Manufacturing 1788-1890, A.N.U. Press, Canberra, 1979 p.525.

[3] Birmingham, Jack, Jeans, Industrial Archaeology in Australia - Rural Industry Heinneman, Richmond, 1983 p. 45.

[4] Linge, op. cit p. 525.

[5] Kelly M, Crocker R. Sydney Takes Shape Doak Press, Sydney, 1978, p.49

[6] Linge op. cit. p. 525.

[7] Linge op. cit. p. 526.

[8] Linge op. cit. p. 536.

[9] Australasian Bakers and Millers journals, 1921 – 1927, cited in Howard, R, Mungo Scott Flour Mill Heritage Assessment Survey, February, 1998

[10] Royal Commission on the Wheat, Flour and Bread industries, 25 January 1934–1 April 1936 (H. W. Gepp (Chair), T. S. Cheadle , C. W. Harper, E. P. M. Sheedy , S. M. Wadham 1932-34/IV/2425-67, 1934-37/IV/1-690

# 4.0 Physical Description

## 4.1 Introduction

The Mungo Scott Flour Mill comprises seven large buildings, a number of minor buildings and four sets of large flour and wheat storage silos. The layout of the site is shown in figure 4.1, with the major buildings and structures identified by number.

This report is concerned with the industrial equipment and facilities on the site and, as such, does not examine the range of buildings on the site for their architectural, historical or aesthetic heritage values, being primarily concerned with their contents. For this reason, the buildings are described below in functional terms only and are identified for their containing elements or items of potential industrial heritage value. The following descriptions deal with the buildings individually or collectively, according to their relevance to this study.

## 4.2 Buildings on the Mungo Scott Flour Mill site

### 4.2.1 Building 13 – Warehouse and Building 14 – The Flour Mill

These two buildings are the primary functional elements on the site and are the original buildings erected by Mungo Scott in 1922 and rebuilt in 1927. The buildings are virtually identical, five-storey, brick buildings on their exteriors and are symmetrical around their common wall, although the south-western corner of the mill building forms a segregated portion of the building known as the Smut Tower. Internally, the walls enclose timber floors supported by a timber post-and-beam structure and both buildings have an extensive attic level. Corrugated-iron clad gable roofs feature full length clerestories and windows in the Flour Mill are timber framed, double hung sashes, whilst those in the Warehouse and Packing building are steel framed with fixed and awning type sashes.

The two buildings house the core operations of the mill and all other structures on the site have ancillary functions. The milling operation occupies five floors vertically, with grain stored in bins located at the uppermost (attic) level and travelling, via gravity, through its primary process stages on the floors below. After the primary stages, product is transported around the mill by conveyors to further secondary process stages.

Originally, the products of the main and secondary processing stages would have been carried into the upper levels of the adjacent warehouse building, where it was variously packed into backs or sacks, made up into pallets and sent to trucks for delivery to market.

Since the 1960s, a large proportion of the product has been delivered into the bulk wheat silos and carried away in tankers, with bagged product progressively disappearing from this site. Although the mill is currently operating, the warehouse building is now vacant on all levels.

A skillion structure clad in corrugated iron is attached to the eastern side of these two buildings. It straddles the railway siding and provides shelter for activities relating to loading and unloading of trains.

### 4.2.2 Building 12 – Mill Offices

The Mill Offices are located on the northwest corner of the Warehouse and Packing building. External walls are of brick and the hipped roof is clad in metal sheeting. Windows are timber framed with double hung sashes. The building is two storeys in height, with flat roofed extensions on the southern side which include an eternal reinforced concrete stair. Internal walls are rendered and painted and finishes

appear to be of relatively recent origin. Apart from the mill offices, it also contains the mill laboratory, from which quality control and product testing were managed


Figure 4.1 Warehouse and Packing Building with the Flour Mill building in the background.

Figure 4.2 The Mill Office Building is attached to the northeast corner of the Warehouse building.

### 4.2.3 Building 15 – Clean Wheat Bins Building

This is a tall (equivalent to approximately six stores), rectangular building with a gabled roof topped by a blind clerestory. The whole structure is clad in corrugated iron and is painted. It contains sixteen rectangular silos (bins) which reach from first floor level to the roof level and discharge from their base at ground level. All grain is transported in sealed elevators, chutes or conveyors. Discharge conveyors run under the ground level floor and under the intervening roadway carrying the output of the silos into the mill building to the north. Overhead conveyors lead into this the roof level of this building from the adjacent Bulk Wheat Storage Silos.

### 4.2.4 Building 16 – Wheat Intake and Cleaning / General Store 2

Attached to the south side of the Clean Wheat Bins Building is a skillion-roofed single-storey building, with internal mezzanine, that was once the primary reception and storage area for bagged wheat, where the wheat was transferred in to the Clean Wheat bins. It is a utilitarian structure now used as a general store, however, the upper level was fitted out as a Carpenters Shop post WW2 and retains a number of machines from that use.

### 4.2.5 Building 17– Bulk Flour Storage Silos

The Bulk Flour Storage Silos consists of twenty cylindrical steel silos arranged in three rows, with associated filling and emptying facilities attached around the silos. The silos are of several distinct sizes, varying primarily in diameter. One group of silos appear to act as discharge silos, as they terminate above ground level, above truck-loading bays. Pneumatic flour conveyor lines run overhead between these silos and the Mill building on their eastern side.

### 4.2.6 Buildings 18 and 20 – Bulk Wheat Storage Silos

There are two groups of Bulk Wheat Silos, identified as Buildings 18 and 20, on the site. Overhead conveyors lead from each set of Bulk Wheat Storage Silos into the roof level of the Clean Wheat Bins Building.

Building 18 consists of six large cylindrical reinforced concrete silos arranged in two rows of three, with its metal-clad elevator tower on the eastern side of the group. The bases of the silos are enclosed in a corrugated-iron clad building, within which are the discharge chutes and service conveyors.

Building 20 is located next to the eastern boundary adjacent to the rail line and comprises four large cylindrical concrete silos constructed in a square arrangement over a reinforced concrete slab. The metal clad elevator tower is located on the northern side and an escape ladder is located on the southern side of the silos.

Figure 4.3 The Clean Wheat Bins Building. It is entirely occupied by timber silos.

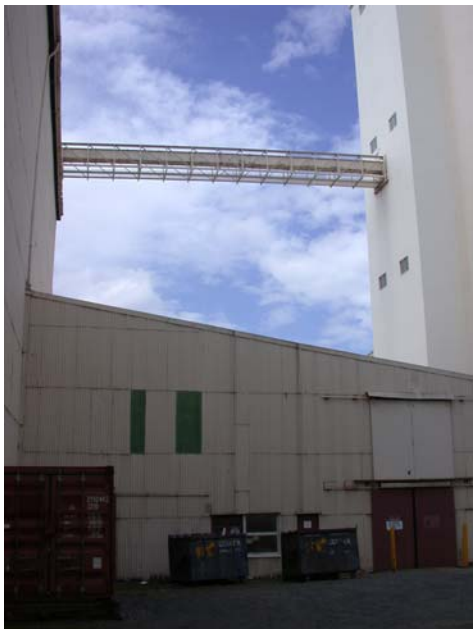

Figure 4.4 The Wheat Intake and Cleaning Building, now used as General Store 2

Figure 4.5 The Bulk Flour Storage Silos. These silos hold the mill product until loaded into road tankers.

Figure 4.6 The Bulk Wheat Storage Silos. These silos hold reserves of grain received from the farm ready for processing in the mill.

### 4.2.7 Building 21 – Workshop

Building 21 is a single storey gabled roofed building clad in corrugated iron, containing a general mechanical workshop. It incorporates the remains of the WW2-era air-raid shelter, a brick and concrete structure erected in the early 1940s in case of air attack. It contains several machines associated with general maintenance and light fabrication, including two specialist mill-roller lathes.


Figure 4.7 Interior of the Workshop, showing general workshop features such as workbenches and equipment

Figure 4.8 One of the two lathes set up specifically for cutting and grooving the mill rollers.

# 5.0 Description – Machinery and Equipment

## 5.1 Introduction

The machinery and equipment contained within the Mungo Scott Flour Mill is a mixture of older machines that have been in use for many years, represented primarily by the roller mills themselves, and a wide range of machines and equipment which are of relatively recent origin. It is generally equipped with up-to-date transport, supervisory and process control equipment and the older machinery has been updated or upgraded to operate as part of the modern mill systems.

A large component of the mill machinery and equipment is to be taken from the site when Allied Mills shut down the mill and relinquish ownership. Any machinery and equipment which is not taken will form part of the sale and will become the property of the new owners. A full list of items of machinery and equipment to be taken from the site (i.e. excluded from the sale) is included as Appendix A to this report.

This list, however, is not easily translated into a clear picture of what will remain after the closure of the mill, partly owing to its arrangement according to asset identification number rather than by location or purpose. It is understood, though, that virtually all of the modern, operable equipment is to be removed, including all of the laboratory equipment. Most of the workshop equipment will also be removed.

## 5.2 Machinery

### 5.2.1 Building 13 – Warehouse and Building 14 – The Flour Mill

#### Warehouse

The Warehouse Building is currently vacant and has had little significant use for the last decade, following the adoption of bulk flour storage and transport in the 1970s. The building has five floors, the majority of which once provided open storage space. Equipment within the building when in use would be for managing the product in bags and moving bags between floors and into and out of the building.

Figure 5.1 Warehouse and Packing Building Level 3, showing Bag Sealing machine and platform scales. All windows have been sealed with orange plastic prior to fumigation.

Figure 5.2 Warehouse and Packing Building Level 3, showing bag chute running between floors.

The building contains virtually no remnant equipment today that is a relic of its use as a flour warehouse. There is a bag stitching machine and set of platform scales standing on the third floor level, and a single bag chute, formed of steel sheets, runs from the floor above and continues to the floor below. The bag stitching machine is of recent manufacture, with a short floor-level conveyor for carrying the bag past the stitching head. Although the small platform scale probably dates from the early-to-mid twentieth century, it is a common type. Neither machine is permanently affixed to the floor.

Some components of the modern pneumatic flour handling plant has also been installed in this building. Apart from these elements, the physical features of the building itself, including its high-load capacity floors, evidence of the loading docks on the ground level and remnant bag-chute openings, represent the evidence of its former use.

### Flour Mill

The milling operation occupies five floors vertically, with grain stored in bins located at the uppermost (attic) level and travelling, via gravity, through its primary process stages on the floors below.

The south western corner of the mill building is formed into a discrete section of the building known as the Smut House, which contains its own vertical processing stage. The Smut House receives the wheat grains from the timber bins and cleans and screens the wheat prior to its use in the mill.

Wheat passes over a vibrating sieve, then through disc and cylinder separators on successive levels, after which it is transferred into the grinding bins in the flour mill.

Figure 5.3 Flour Mill Building - Smut House, showing grain sieve.

Figure 5.4 Flour Mill Building - Smut House, showing waste screenings of foreign seeds and grains.

The space beneath the roof below the clerestory of the mill contains the Grinding Bins, which hold the grain required for approximately a full day's processing, plus the distribution conveyor and elevators to bring the grain to this level and fill the bins.

The fourth floor is known as the Mill Sifter Floor and contains various machines for sifting flour from the bran. The majority of the space is occupied by four large quivering plansifters. A number of smaller sieving machines are located on this floor.

Figure 5.5 Flour Mill Building Level 4, showing two of the large plansifters.

Figure 5.6 Flour Mill Building Level 4, showing small quiver sifter.

The third floor of the mill is the Purifier Floor and contains a row of purifiers along the east wall plus various classifiers, finishers and separators. This floor has a spectacular array of pneumatic flour handling pipework, with in-line valves, direction switches and mixing chambers. The Smut House room in the south-east corner of the mill also contains a Wheat Cleaning Sieve which is part of the initial wheat preparation system.

Figure 5.7 Flour Mill Building Level 3, showing two of the large purifiers.

Figure 5.8 Flour Mill Building Level 3, showing pneumatic pipe valves and pipework.

The second floor of the Mill is the Screen Room and it contains a range of separators, disc mills and finishers. These are located sparsely within the floor, with considerable space taken up with pneumatic and gravity feed pipework.

Figure 5.9 Flour Mill Building Level 2, showing one of the rotary mills.

Figure 5.10 Flour Mill Building Level 2, showing feeder.

The first floor of the mill is the Milling Floor and contains the Break and Reduction roller mills. There are approximately twenty four mills on this floor, each performing one step on either of the Break and Reduction processes. All are virtually identical machines manufactured by Henry Simon Ltd, although the rollers installed in each mill vary. The centre of the room contains a partitioned office for the Head Miller, from which the operation of the mill is supervised.

It appears that none of these mills is to be retained by Allied Mills.

Figure 5.11 Flour Mill Building Level 1, showing rows of roller mills.

Figure 5.12 Flour Mill Building Level 1, showing roller mills.

The Lowest floor, at exterior ground level, is known as the Mill Basement and it is largely occupied with pneumatic pipework carrying products to and from the floors above, plus a range of in-line product weighers, magnetic separators and .

Figure 5.13 Flour Mill Building Basement Level, showing one of the weigher machines.

Figure 5.14 Flour Mill Building Basement Level, showing pair of product weighers.

### 5.2.2 Building 12 – Mill Offices

The Mill Offices building contains no milling machinery but the fully-equipped laboratory contains a wide range of precision instruments and mini processing machines that are used to replicate the milling process and test the characteristics of the grain and product flour continually as part of the operations of the flour mill. The majority, if not all, of this equipment is listed for removal by Allied Mills.

### 5.2.3 Building 15 – Clean Wheat Bins Building

The Clean Wheat Bins building contains machinery and equipment associated with the conveying and elevating of wheat grains, with facilities for testing moisture content and heat within the bins. The elevators appear, based upon the numerous spare buckets, to be of the continuous bucket type. These elevators have been converted from metal buckets to a buckets formed from poly-plastic material.

This equipment is generic to the task and is similar to grain handling machinery in any context, whether at rail sidings, ship wharves or at the flour mills.

Figure 5.15 These old steel buckets from the elevators in the Clean Wheat Bins Building have been replaced with new plastic type buckets.

Figure 5.16 Mill Offices - Laboratory. All of this equipment will be removed from site.

### 5.2.4 Building 16 – Wheat Intake and Cleaning / General Store 2

The Wheat Intake and Cleaning / General Store 2 contains no machinery and equipment of interest on its lower levels. The mezzanine level of this building however, has been converted to a Carpenters Shop and is fitted with a number of standard timber workshop machines. These include a Dovetailer by Danokaert, a PaulCall planer, a Planer and Bench Saw by Dominion, a two circular saw benches, a band saw and a set of grinding wheels. It appears that the majority of this equipment is listed for removal by Allied Mills.

Figure 5.17 Carpenter Shop, showing band saw and circular saw.

Figure 5.18 Carpenters Shop showing planer and grinding wheels.

### 5.2.5 Building 17– Bulk Flour Storage Silos

The Bulk Flour Storage Silos contain machinery and equipment associated with the conveying, storage and out-loading of flour. Much of this equipment is associated with the pneumatic flour transport system and is generic to industries handling dry powders. As flour is a food product, much of the equipment is manufactured from stainless steel and is sealed from the atmosphere.

### 5.2.6 Buildings 18 and 20 – Bulk Wheat Storage Silos

The Bulk Flour Storage Silos buildings contain machinery and equipment associated with the storing, conveying and elevating of wheat grains. Much of this equipment falls into the category of mechanical grain transport equipment, including horizontal and vertical screw conveyors, bucket elevators and discharge chutes. This equipment is generic to the task and is similar to grain handling machinery in any context, whether at rail sidings, ship wharves or at the flour mills.

Figure 5.19 Bulk Flour Storage Bins, showing one of the truck loading bays.

Figure 5.20 Bulk Wheat Storage Silos - Basement Level, showing chutes and enclosed discharge conveyors.

### 5.2.7 Building 21 – Workshop

The Workshop contains several machines associated with general maintenance and light fabrication, including two specialist lathes. The lathes are marked Henry Simon but are believed to be of German manufacture. The Workshop contains a number of John Heine & Sons metal fabrication machines, including a set of rolls, a plate edge bending machine and guillotine. These machines are all relatively common types, typically found in any similar workshop. The two lathes are general purpose machines which have been set up specifically to undertake the tasks of cutting the flutes on mill rollers. All of the major items of machinery in the Workshop appear to be listed for removal by Allied Mills.

Figure 5.21 Workshop. The two large lathes used for recutting the mill rollers.

Figure 5.22 Workshop - .the Heine & Sons Plate Edge Bending Machine

# 6.0 Assessment of Cultural Heritage Significance

## 6.1 Basis for the Assessment

Assessment of cultural significance endeavours to establish why a place is considered important and is valued by the community. Cultural significance is embodied in the fabric of the place (including its setting), the records of the place and the response that the place evokes in the community.

The *NSW Heritage Manual* (NSW Heritage Office, 1996) sets out a detailed process for conducting assessments of heritage significance. It provides a set of specific criteria for assessing the significance of an item. The following assessment has been prepared in accordance with the guidelines for *Assessing Heritage Significance, 2001*.

The Heritage Council of NSW has adopted specific criteria for heritage assessment which have been gazetted pertinent to the *Heritage Act 1977* (NSW). The seven criteria are:

| | |
|---|---|
| *Criterion (a)* | *an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);* |
| *Criterion (b)* | *an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);* |
| *Criterion (c)* | *an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);* |
| *Criterion (d)* | *an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;* |
| *Criterion (e)* | *an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);* |
| *Criterion (f)* | *an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area); and* |
| *Criterion (g)* | *an item is important in demonstrating the principal characteristics of a class of NSW's (or the local areas) cultural or natural places or cultural or natural environments.* |

As the criteria of *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 1999* (the Burra Charter) are very similar to those of the Heritage Manual, they are not considered separately.

## 6.2 Assessment of Significance

The following section addresses the machinery and equipment at Mungo Scott Flour Mill according to the assessment criteria above.

**Criterion (a)—An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)**

- The machinery and equipment at Mungo Scott Flour Mill forms a set of processing equipment of varying ages which together represent the total operation of an inner city roller flour mill during the twentieth century and which have performed the core work of the business.

- The machinery and equipment at Mungo Scott Flour Mill forms part of a flour mill which has been a significant contributor to the supply of flour in Sydney throughout the twentieth century.
- The Mungo Scott Flour Mill has played an important role in the industrial history and development of Summer Hill as a workplace.
- The Maintenance Workshop at Mungo Scott Flour Mill has been an important facility for maintenance of mill rollers for a large number of mills throughout NSW during the latter half of the twentieth century.

**Criterion (b)—An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)**

- The machinery and equipment at Mungo Scott Flour Mill is not associated with any person, or group of persons, of importance in NSW.

**Criterion (c)—An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)**

- The machinery and equipment at Mungo Scott Flour Mill does not demonstrate any aesthetic, creative or technical achievement, however, it exemplifies high-quality industrial food-processing equipment of the mid-twentieth century.

**Criterion (d)—An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons**

- The machinery and equipment at Mungo Scott Flour Mill does not demonstrate any strong or special association with a particular community or cultural group in New South Wales.

**Criterion (e)—An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)**

- The machinery and equipment at Mungo Scott Flour Mill form part of a flour mill which is a typical example of the twentieth century 'urban roller mill' phase of this industry, with its architecture, layout, location and technology.
- Although an example of a complete wheat processing facility, the combination of older and newer machinery and the integration of old technologies, such as bucket elevators, with new technologies such as pneumatic transport, means that he mill is not a good example of any single period of technology but demonstrates ongoing adaptation and modification to suit market and operating conditions over eighty years.

**Criterion (f)—An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)**

- The machinery and equipment at Mungo Scott Flour Mill forms part of one of the last few operating flour mills dating from the early twentieth century in the Sydney Metropolitan area.
- The machinery and equipment at Mungo Scott Flour Mill, in general, is neither rare nor unusual in its industrial context. Much of the machinery and equipment is utilised in a wide range of industries and represents proprietorial products purchased from relevant (mostly European) manufacturers.

- With regard to the age of the roller mills, it is rare that machines of this age are still in use, however, they are nearing the end of their useful life and are superseded by newer, larger and more accurate machines which perform the same task.

**Criterion (g)—An item is important in demonstrating the principal characteristics of a class of NSW's (or the local area's) cultural or natural places or cultural or natural environments**

- The machinery and equipment at Mungo Scott Flour Mill is individually and collectively representative of the machinery typically utilised in a medium-sized roller flour mill established in the early twentieth century which has operated continuously since and has regularly modernised and upgraded the equipment according to market economics.
- The collection of roller mills at Mungo Scott Flour Mill represents the core activity of the flour mill and they symbolise the nature and conduct of the milling process. More than any other items of equipment, the rollers mills, either singly or together, are capable of communicating, through interpretation, an insight into flour milling technologies in the twentieth century.

## 6.3 Summary Statement of Cultural Significance

The machinery and equipment at Mungo Scott Flour Mill collectively represents an intact and operational twentieth century roller flour mill, which demonstrates a type of workplace and industry once common in the inner city but now typically located in the city fringes and in rural centres.

The primary significance of the machinery and equipment at Mungo Scott Flour Mill derives from its role within an assemblage of inter-related buildings and operating equipment designed to manufacture a foodstuff which has been a European cultural staple for a millennia. Flour milling remains an important industrial activity which has a history of evolving manufacturing techniques and the machinery and equipment at Mungo Scott are evidence of a historical phase in that evolution.

The collection of upgraded older machinery and modern equipment at Mungo Scott Flour Mill means that the mill is not a good example of any single period of technology, except the twentieth century generally, but it does demonstrate the ongoing adaptation and modification needed to suit competitive market conditions over eighty years.

## 6.4 Relative Significance of Components

### 6.4.1 Grades of Significance

The NSW Heritage Office has defined certain terms that can be used to describe the grades of significance for different components of a place (see the NSW Heritage Office publication *Assessing Heritage Significance* (2001)). The NSW Heritage Office publication also suggests that the standard gradings it outlines may need to be modified to suit particular applications and specific places.

The machinery and equipment at Mungo Scott Flour Mill has potential to be significant in its own right as items of machinery and equipment that may be rare, exceptional or technologically significant in the NSW, Australian or world context, either as items of flour milling equipment or in a more general technological or historical context. The machinery and equipment at Mungo Scott Flour Mill also has significance for its contribution to the heritage value of the Mungo Scott Flour Mill site in its ability to record, illustrate and demonstrate the history and significance of this mill.

In Table 6.1 below, the standard Heritage Office ranking criteria have been modified to express, firstly, the individual significance of the machinery, equipment and fabric of the Mungo Scott Flour Mill and,

second, the contribution that individual elements of the machinery, equipment and fabric of the Mungo Scott Flour Mill make to the heritage significance of the site as a whole.

**Table 6.1 Adapted Standard Grades of Significance, NSW Heritage Office.**

| Ranking | Significance Level of the machinery and equipment at Mungo Scott Flour Mill in its own right | Significance Level of the machinery and equipment at Mungo Scott Flour Mill as components of the Site |
|---|---|---|
| Exceptional | Rare or outstanding machinery, equipment and fabric which is significant technologically or as an exemplar of the technological development of the Flour Milling industry. Unusually high degree of original fabric. | Rare or outstanding machinery, equipment and fabric which directly contributes to the significance of Mungo Scott Flour Mill. Unusually high degree of original fabric or attributes that embody heritage significance. |
| High | Machinery, equipment and fabric that demonstrates key aspects of Flour Milling and its historical or social significance. High degree of original fabric and/or alterations that do not detract from significance. | Machinery, equipment and fabric that demonstrates primary aspects of the Mungo Scott Flour Mill's heritage significance. High degree of original fabric, particularly relating to earlier generations of technology. |
| Moderate | Representative, common or modified machinery, equipment and fabric which illustrates or demonstrates aspects of flour milling. | Contemporary, common or modified machinery, equipment and fabric which nevertheless contributes to the overall significance of the Mungo Scott Flour Mill. |
| Little | Modern and modernised and altered or significantly degraded machinery flour milling machinery, equipment and fabric, or machinery, equipment and fabric which is not specific to flour milling. | Added or altered machinery, equipment and fabric which forms part of the Mungo Scott Flour Mill but which contributes little value to the overall heritage significance of the Mungo Scott Flour Mill. |
| Intrusive | Machinery, equipment and fabric that is numerically common, of generic type or is manufactured in large numbers for mundane purposes. | Added, or altered machinery, equipment and fabric that are not relevant to flour milling and obscures or complicates the heritage values of the Mungo Scott Flour Mill. |

### 6.4.2 Grading Individual Elements

The two Heritage Value rankings expressed in Table 6.2 below indicate firstly, the heritage value of the individual items of the machinery and equipment at Mungo Scott Flour Mill as items of industrial history and heritage significance and, second, the extent to which the items of machinery and equipment contribute to the overall significance of the Mungo Scott Flour Mill.

As stated in Section 5.1, the exact inventory of machines that will remain on the site after the completion of salvage by Allied Mills is difficult to determine, apart from a general expectation that all of the modern, operable equipment is to be removed, including all of the laboratory equipment and most of the workshop equipment. For this reason, for example, no workshop machinery is included in the table below.

It should be noted that, while the relative significance of the roller mills and bag chutes / openings is exceptional in comparison to other elements of the machinery and equipment, their general industrial heritage significance is not high. Their heritage value is primarily associated with their role as key processing machines for the operation of this mill.

**Table 6.2 Machinery and Equipment Heritage Value Schedule.**

| Component | Historic Period / Character | Contribution to Site Heritage Values | Overall Heritage Value Ranking |
|---|---|---|---|
| Roller Mills | Mid-twentieth century | Exceptional | Moderate |
| Bag Chutes and remnant openings (Warehouse Building) | Intact evidence of the building's original use | Exceptional | Little |
| Other Milling equipment (as remaining after salvage) | Late-twentieth century | High | Little |
| Timber-cased Bucket Elevators (Clean Wheat Bins Building) | Older technology often associated specifically with wheat. | High | Moderate |
| Bulk Grain Storage Silos | Mid-twentieth century | High | Little |
| Bulk Flour Bins | Late-twentieth century | High | Little |
| Screw, belt and pneumatic conveyors | Generic equipment applied to wheat/flour | Moderate | Little |
| Weighbridge/s | Mid-twentieth century | Little | Little |

# 7.0 Appendices

## Appendix A

Mungo Scott Flour Mill: Exclusions From Sale List (provided by Allied Mills).

## Appendix B

*The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999.*

## Appendix A

**‘**Mungo Scott Flour Mill: Exclusions From Sale List (provided by Allied Mills).

| Asset | Description |
|---|---|
| SHAFENA00001 | FRESH START FEEDER |
| SHDDMNA00001 | METAL DETECTOR BRAN PACKING LINE |
| SHFBLM100001 | BLOWER MOTOR-ARNOTTS NOODLE FLOUR PRODUCT SECURITY |
| SHFBLNA00001 | DELTA BLOWER |
| SHFBONA00001 | OUTLOADING BAY #3 FOR FSB FLOUR |
| SHFCMCD00001 | SERIAL DEVICE SERVER NPORT 5110 |
| SHFCSM100001 | GEAR BOX ARNOTTS NOODLE FLOUR PRODUCT SECURITY |
| SHFDCNA00001 | STARBAGS ARNOTTS NOODLE FLOUR PRODUCT SECURITY |
| SHFDVVV00001 | SOFT FLOUR DIVERTER ARNOTTS NOODLE PROD SECURITY |
| SHFIDNA00001 | BAY 3 OUTLOADING FLOUR STERILATOR |
| SHFIDNA00002 | INFESTATION DESTROYER |
| SHFLPNA00001 | LAPTOP PLC ACCESS MILL-TODD MAMO |
| SHFMDNA00001 | INLINE 10000GAUSS MAGNET BEFORE WESTERN SIFTER |
| SHFMDNA00002 | INLINE 10000 GAUSS BLOW THROUGH MAGNET BEFORE TRUC |
| SHFSFNA00001 | GREAT WESTERN SIFTER |
| SHFSFNA00002 | PRODUCT SECURITY SIEVING SYSTEM ARNOTTS NOODLE |
| SHHZEZZ07311 | OFFICE EQUIPMENT THROUGHOUT |
| SHHZFZZ07491 | BUFFET HUTCH SERIES 33 L DERRETT |
| SHHZFZZ07496 | DESK PEDESTAL/RETURNS SERIES 33 |
| SHHZFZZ07497 | DESK SERIES 33 L DERRETT |
| SHHZLZZ01503 | LABORATORY EQUIPMENT THROUGHOUT |
| SHHZLZZ01840 | FARINOGRAPH (NEW) |
| SHHZLZZ01919 | INFRALYZER 2000 |
| SHHZLZZ03323 | BRABENDER EXTENSOGRAPH |
| SHHZLZZ09052 | Minolta Chroma Meter cr-400 colour meter |
| SHHZPZZ00749 | S/HILL SECURITY LIGHTS |
| SHHZPZZ00750 | S/HILL FLUORESCENT LIGHTS |
| SHHZPZZ00753 | S/HILL WEIGHBRIDGE LIGHTS |
| SHHZPZZ00754 | S/HILL STORE LIGHTS |
| SHHZPZZ00766 | NARRABRI FARM CENTRE IMPROVE |
| SHHZPZZ00767 | BUHLER TEST MILL (EX PYRMONT) |
| SHHZPZZ00768 | DIGITAL PC 575 BRUCE KEEGAN |
| SHHZPZZ00771 | HEAT SEALER HAND OPERATED |
| SHHZPZZ00772 | FEEDER DRIVE SHAFT |
| SHHZPZZ00774 | WELDER CIG TRANSARC TRADESMAN |
| SHHZPZZ00775 | 6inch WELLSAW |
| SHHZPZZ00776 | WELDER LINCOLN |
| SHHZPZZ00777 | CIRCULAR SAW (DOMINION) |
| SHHZPZZ00778 | CIRCULAR SAW (ACCRO) |
| SHHZPZZ00779 | PLANER (PAULCALL) |
| SHHZPZZ00780 | DOVETAILER (DANOKAERT) |
| SHHZPZZ00781 | KEYBOARD WANG 724 (OLIVIER) |
| SHHZPZZ00782 | KEYBOARD WANG 724 (SESTAN) |
| SHHZPZZ00783 | KEYBOARD WANG 724 (O'BRIEN) |
| SHHZPZZ00796 | ENTOLETER - SPONGE |
| SHHZPZZ00797 | FIRE HOSE |
| SHHZPZZ00799 | VACCUUM CLEANER |
| SHHZPZZ00800 | 3COM ETHERLINK III ON PCMCIA |
| SHHZPZZ00801 | CHRONDOMETER |
| SHHZPZZ00802 | FURN.ASSETS OF WRITE-OFF NO 6 |
| SHHZPZZ00803 | MEMORY UPGRADE 1MB-LAPTOP P.L. |
| SHHZPZZ00804 | VIBRATORY BAG TRANSPORTER |
| SHHZPZZ00805 | PLATFORM SCALE |

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| SHHZPZZ00806 | MOBILE BAG ELEVATOR |
| SHHZPZZ00807 | HAND PALLET TRUCK |
| SHHZPZZ00808 | PLATFORM SCALE ASCO |
| SHHZPZZ00809 | PLATFORM SCALE AJAX |
| SHHZPZZ00810 | PLATFORM SCALE - AVERY |
| SHHZPZZ00811 | PLATFORM SCALE - ASCO |
| SHHZPZZ00812 | SCALE TOLEDO |
| SHHZPZZ00813 | PLATFORM SCALE AVERY |
| SHHZPZZ00814 | PLATFORM SCALE 33KG TOLEDO |
| SHHZPZZ00815 | PLATFORM SCALE 150KG AVERY |
| SHHZPZZ00816 | 14inch VGA MONITOR (G.MCMAHON) |
| SHHZPZZ00817 | ANSWERING MACHINES (2) |
| SHHZPZZ00818 | ASH FURNACE |
| SHHZPZZ00819 | AIR CONDITIONER |
| SHHZPZZ00820 | STERISTIRRER / HOTPLATE |
| SHHZPZZ00822 | HEATER 4-ELEMENT LAB SELBY |
| SHHZPZZ00823 | WATER BATH QUALTEX |
| SHHZPZZ00824 | HEATER/STIRRER THERMALYNE |
| SHHZPZZ00834 | KEYBOARD WANG 724 (CUTCLIFFE) |
| SHHZPZZ00835 | HAND PALLET TRUCK |
| SHHZPZZ00836 | AUTOMODEM NETCOMM E7F-PCMCIA |
| SHHZPZZ00837 | ZODIAC MANAGERIAL CHAIR (RECEPTION) |
| SHHZPZZ00838 | DECOLATOR MOORE S/N 6239 |
| SHHZPZZ00839 | WATER STILL |
| SHHZPZZ00840 | COMPUTER PRINTER OKIDATA 320 |
| SHHZPZZ00841 | PLATFORM SCALE AVERY |
| SHHZPZZ00842 | ASPIRATOR - TWIN LEG |
| SHHZPZZ00857 | LABORATORY SIFTER |
| SHHZPZZ00858 | FEEDER - NOVADEL |
| SHHZPZZ00859 | KEYBOARD WANG 724 (TAMWORTH) |
| SHHZPZZ00860 | KEYBOARD WANG 724 (SALES) |
| SHHZPZZ00861 | KEYBOARD WANG 724(BOLTON-HOME) |
| SHHZPZZ00862 | KEYBOARD WANG 724 (WHEADON) |
| SHHZPZZ00863 | KEYBOARD WANG 724 (PARKINSON) |
| SHHZPZZ00864 | KEYBOARD WANG 724 (TRISH) |
| SHHZPZZ00865 | KEYBOARD WANG 724 (SCOTT) |
| SHHZPZZ00866 | SONICA 8890 VGA MONITOR (MIS) |
| SHHZPZZ00867 | WANG SVGA MONITOR (DERRETT) |
| SHHZPZZ00868 | WANG SVGA MONITOR (D.JONES) |
| SHHZPZZ00869 | MODEM (NT SERVER) |
| SHHZPZZ00870 | TOSHIBA PORT REPLICATOR |
| SHHZPZZ00872 | WANG VGA MONITOR (L.PETERSEN) |
| SHHZPZZ00873 | ASSETS OF WRITE-OFF NO 14 |
| SHHZPZZ00874 | TELEPHONES (2) |
| SHHZPZZ00875 | P.C. AUSPAC 386/20 |
| SHHZPZZ00876 | WANG SVGA MONITOR (GUAN) |
| SHHZPZZ00877 | WANG SVGA MONITOR (STEPHENS) |
| SHHZPZZ00883 | SIMON M3 ENTOLETER(T/F EX VIC) |
| SHHZPZZ00884 | AXIS NPS 550 PRINT SERVER |
| SHHZPZZ00885 | 14inch SVGA MONITOR (G.MCMAHON) |
| SHHZPZZ00886 | BUNDI CLOCK |
| SHHZPZZ00887 | PUMP JULABO |
| SHHZPZZ00888 | OVEN QUALTEX |
| SHHZPZZ00889 | HOT AIR OVEN MALONEY |
| SHHZPZZ00891 | CENTRIFUGE MSE |

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| SHHZPZZ00892 | SPECTROMETER SPECTRONIC-20 |
| SHHZPZZ00894 | MICROWAVE TOSHIBA (AMENITIES) |
| SHHZPZZ00895 | FRIDGE NORGE (AMENITIES) |
| SHHZPZZ00897 | Radio Portable Motorola |
| SHHZPZZ00898 | RADIO PORTABLE MOTOROLA |
| SHHZPZZ00899 | RADIO PORTABLE MOTOROLA |
| SHHZPZZ00900 | RADIO PORTABLE MOTOROLA |
| SHHZPZZ00901 | RADIO PORTABLE MOTOROLA |
| SHHZPZZ00902 | RADIO PORTABLE MOTOROLA |
| SHHZPZZ00904 | MOBILE PHONE |
| SHHZPZZ00905 | SARTORIUS BALANCE |
| SHHZPZZ00910 | CONVERTER HBM W-1500 (A/C'S) |
| SHHZPZZ00911 | DIGITAL CHECK WEIGHER |
| SHHZPZZ00912 | TYPEWRITER Y CHAN |
| SHHZPZZ00913 | TYPEWRITER OLIVETTI-ET2400 |
| SHHZPZZ00914 | AVTEC 9600 EXT. MODEM (NCR) |
| SHHZPZZ00915 | 4MB MEMORY EXP. KIT (P.LITTLE) |
| SHHZPZZ00916 | KYOCERA LASER PRINTER (ANNA) |
| SHHZPZZ00917 | LASER PRINTER SN NLBB795801 |
| SHHZPZZ00919 | DRAFTING MACHINE |
| SHHZPZZ00920 | ASSETS OF WRITE-OFF NO 13 |
| SHHZPZZ00921 | FAX - J DRURY (HOME) |
| SHHZPZZ00922 | DESK - M DENNIS |
| SHHZPZZ00925 | 16 PORT SERIAL IOP |
| SHHZPZZ00926 | COMPAC PC MEMORY UPGRADE |
| SHHZPZZ00927 | WELDER MIGOMAG 300 |
| SHHZPZZ00928 | TYPEWRITER CANON MX350 |
| SHHZPZZ00929 | INKJET COLOUR PRINTER |
| SHHZPZZ00930 | TRANSMEG WELDING MACHINE |
| SHHZPZZ00931 | WELDING FUMES EXHAUST |
| SHHZPZZ00934 | MULTIPLEXER 8-PORT NETM.28(CR) |
| SHHZPZZ00935 | MULTIPLEXER 8-PORT NETM.28(CR) |
| SHHZPZZ00936 | WANG 441/20SC (D. JONES) |
| SHHZPZZ00937 | WHITE BOARD |
| SHHZPZZ00938 | DESK (J DRURY) |
| SHHZPZZ00939 | FASCIMILE (J DRURY) |
| SHHZPZZ00940 | COPIER CANON-PC7 S/N F121200 |
| SHHZPZZ00941 | INTERFACE UPGRADE KIT-BAND PRT |
| SHHZPZZ00942 | MULTIPLEXER 8-PORT NETM.28(CR) |
| SHHZPZZ00943 | MULTIPLEXER 8-PORT NETM.28(CR) |
| SHHZPZZ00944 | WANG P.C. LP452/25 |
| SHHZPZZ00945 | 1 VIEWSONIC 17inch MONITOR (NCR) |
| SHHZPZZ00946 | WANG PC441/20SC (GUAN) |
| SHHZPZZ00947 | WANG PC441/20SC (STEPHENS) |
| SHHZPZZ00949 | LAB MILL 3100 & FALLING NUMBER |
| SHHZPZZ00950 | DESKPRO 2000 SN 771HVU50007 |
| SHHZPZZ00951 | DIGITAL 575 SN 62226299 |
| SHHZPZZ00952 | AMBASSADOR SHREDDER S/N 402087 |
| SHHZPZZ00953 | WANG PC486/25 (NICHOLSON) |
| SHHZPZZ00954 | WANG LP461/25 (A.TAMINE) |
| SHHZPZZ00955 | ECOSYS LASER PRINTER |
| SHHZPZZ00956 | DESKPRO 4000 SN 7720BBD20498 |
| SHHZPZZ00958 | DESKPRO 4000 PC SN H743BNL20349 |
| SHHZPZZ00959 | PC PENTIUM DIGITAL VENTURIS P100 |
| SHHZPZZ00960 | MODEM |

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| SHHZPZZ00961 | COMPAQ DESKPRO 4000 & CD ROM |
| SHHZPZZ00962 | OCTOPUS CABLES & ANNEX UPGRADE |
| SHHZPZZ00963 | 16 PORT SERIAL LINE CARD |
| SHHZPZZ00964 | DIGITAL 5100 SN 62326959 |
| SHHZPZZ00965 | WANG LP451/25 (K.LAWSON) |
| SHHZPZZ00966 | DESKPRO 2000 SN 7711HVU50127 |
| SHHZPZZ00967 | PRINTER MAT.WANG VS-PM019(MIS) |
| SHHZPZZ00968 | FAX -L500 |
| SHHZPZZ00969 | MIXER HOBART |
| SHHZPZZ00970 | PH METER RADIOMETER PHM82 |
| SHHZPZZ00971 | FALLING NUMBER 1400 |
| SHHZPZZ00979 | PRINTER 180CPS (CR) |
| SHHZPZZ00980 | PRINTER TOSHIBA LASER (LITTLE) |
| SHHZPZZ00981 | HP5M S/HILL SN SG1S027206 |
| SHHZPZZ00982 | FAX - L500 CANON |
| SHHZPZZ00983 | LEATHER LOUNGE 1ST FL RECEPTN |
| SHHZPZZ00984 | RICOH FAX 60 |
| SHHZPZZ00985 | FAX CANON-210 S/N N1802700 |
| SHHZPZZ00986 | TURBO DAT DRIVE S/HILL |
| SHHZPZZ00987 | WANG PC 461/33 (L.PETERSEN) |
| SHHZPZZ00988 | LEATHER LOUNGE - 1ST FL RECEPT |
| SHHZPZZ00989 | WANG LP451/25 (ZANELLA) |
| SHHZPZZ00993 | LASER PRINTER - COMMODITY |
| SHHZPZZ00994 | AST BRAVO PC (G.HUXLEY) |
| SHHZPZZ00995 | WANG LP451/486SX (V.EDWARDS) |
| SHHZPZZ00996 | WANG LP451/486SX (D.O'BRIEN) |
| SHHZPZZ00997 | WANG LP451/486SX (B.KELLY) |
| SHHZPZZ00998 | BALANCE ANALYTICAL LECO |
| SHHZPZZ00999 | AT WANG PC-260-1 (TRISH) |
| SHHZPZZ01000 | PRINTER-PART OF 201066 (CR) |
| SHHZPZZ01001 | ELECTRONIC WHITEBOARD |
| SHHZPZZ01002 | PC-240 20MB WANG (BOLTON-HOME) |
| SHHZPZZ01003 | LAB PLANSIFTER SIMON |
| SHHZPZZ01004 | BLOWER SEMOLINA (14.8) |
| SHHZPZZ01006 | SEW. MACH'N UNION SPEC.(SPARE) |
| SHHZPZZ01007 | SEW. MACH'N UNION SPEC.(SPARE) |
| SHHZPZZ01008 | SEW. MACH'N UNION SPEC.(SPARE) |
| SHHZPZZ01009 | CHLORINE GAS BREATHING APPARTS |
| SHHZPZZ01010 | WANG PC461/486SX (B.ESPLIN) |
| SHHZPZZ01011 | DIGITAL VENTURIS SN TA531PB116 |
| SHHZPZZ01012 | DIGITAL VENTURIS 575 SN SN62429878 |
| SHHZPZZ01013 | TOSHIBA 410 SN 05615347 |
| SHHZPZZ01014 | 20GB EXTERNAL TAPE DRIVE |
| SHHZPZZ01015 | LEATHER LOUNGE 1ST FL RECEPTN |
| SHHZPZZ01016 | WANG P E DTI - C WALKER |
| SHHZPZZ01017 | J1200 DUAL PORT |
| SHHZPZZ01018 | PUNCH BINDER |
| SHHZPZZ01019 | AT 40MB VGA WANG PC350 (SCOTT) |
| SHHZPZZ01020 | AMYLOGRAPH BRABENDER V35 |
| SHHZPZZ01021 | AMYLOGRAPH BRABENDER V35 |
| SHHZPZZ01023 | PRINTER EPSON LQ-1050(FRANGELL |
| SHHZPZZ01024 | COMPUTER ELITE P586 VL |
| SHHZPZZ01025 | PC-240 640K 20MB WANG (SALES) |
| SHHZPZZ01027 | FRM MOULDER/STAND: TEST BAKERY |
| SHHZPZZ01028 | ONE 1.05GB DISK DRIVE |

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| SHHZPZZ01029 | UNION SPECIAL SEWING HEAD |
| SHHZPZZ01030 | FARINOGRAPH |
| SHHZPZZ01031 | CANNON FAX - ADMIN |
| SHHZPZZ01033 | LASER PRINTER SN 394086 |
| SHHZPZZ01034 | LASER PRINTER KYOCERA 3500 |
| SHHZPZZ01035 | 2 X IDAS SOFTWARE |
| SHHZPZZ01036 | TOSHIBA 460CDT SN 770013780 |
| SHHZPZZ01038 | 16 PORT TERMINAL SERVER (NO.1) |
| SHHZPZZ01039 | 16 PORT TERMINAL SERVER (NO.2) |
| SHHZPZZ01040 | 16 PORT TERMINAL SERVER (NO.3) |
| SHHZPZZ01041 | TECTRONIX 340 SN BE03K36 |
| SHHZPZZ01043 | OCTAGON 200 TEST SIEVE |
| SHHZPZZ01044 | INKJET - CADJET |
| SHHZPZZ01045 | TOSHIBA 486 NOTEBOOK SN 08212767 |
| SHHZPZZ01046 | PRINTER LASER KYOCERA (A/C'S) |
| SHHZPZZ01047 | TRAINING ROOM EQUIPMENTS |
| SHHZPZZ01048 | POWER CONDITIONER - C/ROOM |
| SHHZPZZ01049 | COMPUTER CABLES SUMMER HILL |
| SHHZPZZ01050 | CACHE MEMORY OPTION 32KB (CR) |
| SHHZPZZ01051 | LICENCE FEE - INSTALLATION SER |
| SHHZPZZ01052 | WANG VS MEMORY UPGRADE |
| SHHZPZZ01053 | CONCENTRATOR - BUHLER |
| SHHZPZZ01054 | COMPAC PC 486 - J DRURY |
| SHHZPZZ01055 | COMPAQ PROLIANT 1500 SERVERS X 2 |
| SHHZPZZ01056 | PLANT - YENDA (M.I.A.) |
| SHHZPZZ01057 | OFFICE AUTOMATION-GROUP |
| SHHZPZZ01058 | MULTIPLEXERS + ACCESSORIES |
| SHHZPZZ01059 | MSP SOFTWARE - MASTERPACK |
| SHHZPZZ01060 | LICENCE FEES - STARSENTRY |
| SHHZPZZ01061 | NCR 3450 SYSTEM |
| SHHZPZZ01062 | PLANT - CROPPA CREEK |
| SHHZPZZ01063 | NCR SMART HUBS - COMPUTER ROOM |
| SHHZPZZ01064 | PROJECT MANAGEMENT/TRAINING |
| SHHZPZZ01065 | PROJECT MANAGEMENT/TRAINING |
| SHHZPZZ01067 | MSP SOFTWARE - NSW 80% SHARE |
| SHHZPZZ01068 | NCR 3450 SYSTEM-NSW 80% SHARE |
| SHHZPZZ01069 | INK JET PRINTER |
| SHHZPZZ01074 | CABLING AT SUMMER HILL |
| SHHZPZZ01083 | 18 EDWARD ST, SUMMER HILL |
| SHHZPZZ01084 | FREEHOLD LAND TAMWORTH |
| SHHZPZZ01087 | 18 EDWARD STREET SUMMER HILL |
| SHHZPZZ01091 | 20 EDWARD STREET SUMMER HILL |
| SHHZPZZ01479 | BLOWER(OFFAL) |
| SHHZPZZ01495 | PALLETISER |
| SHHZPZZ01496 | PALLETISER |
| SHHZPZZ01499 | MILL-FLOUR TEST |
| SHHZPZZ01557 | STRETCHWRAPPER-PALLET |
| SHHZPZZ01561 | BLOWER (SEMOLINA BLOWER) |
| SHHZPZZ01580 | BLOWER (NO 1 FLOUR BLOWER) |
| SHHZPZZ01609 | SIFTER NO1 |
| SHHZPZZ01610 | SIFTER NO2 |
| SHHZPZZ01611 | SIFTER NO3 |
| SHHZPZZ01612 | SIFTER NO4 |
| SHHZPZZ01613 | SIFTER NO5 |
| SHHZPZZ01789 | ROLL GRINDER |

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| SHHZPZZ01812 | MAGNETS-CHUTE (X13) |
| SHHZPZZ01828 | ASPIRATOR/COMBINATOR NO 2 |
| SHHZPZZ01829 | ASPIRATOR/COMBINATOR NO 1 |
| SHHZPZZ01857 | BLOWER |
| SHHZPZZ01895 | CLASSIFIER |
| SHHZPZZ01896 | CLASSIFIER |
| SHHZPZZ01994 | MCC1-PACKING |
| SHHZPZZ02023 | BAG PLACER |
| SHHZPZZ02039 | BALER W/- FEED HOPPER REMIX |
| SHHZPZZ02040 | MCC2-PACKING |
| SHHZPZZ02127 | REDRESSER |
| SHHZPZZ02163 | ROLLER MILL A REDUCTION NO30 |
| SHHZPZZ02266 | PIN MILL |
| SHHZPZZ02267 | PIN MILL |
| SHHZPZZ02268 | PIN MILL |
| SHHZPZZ02269 | PIN MILL |
| SHHZPZZ02270 | PIN MILL |
| SHHZPZZ02271 | PIN MILL |
| SHHZPZZ02390 | BLOWER (SPONGE FLOUR BLOWER) |
| SHHZPZZ02394 | BLOWER |
| SHHZPZZ02502 | FEEDER-LOSS IN WEIGHT |
| SHHZPZZ02505 | CONVEYOR/CHECKWEIGHER |
| SHHZPZZ02543 | BLOWER (CLEAN BRAN BLOWER) |
| SHHZPZZ02544 | BLOWER (AM SHARPS BLOWER) |
| SHHZPZZ02583 | INK JET PRINTER (VALVE PACKAGING LINE) |
| SHHZPZZ02641 | BLOWER |
| SHHZPZZ02731 | WEIGHBRIDGE |
| SHHZPZZ02753 | SEPARATOR-DISC CYLINDER |
| SHHZPZZ02868 | BLOWER (MEAL BLOWER) |
| SHHZPZZ02869 | BLOWER |
| SHHZPZZ02874 | BLOWER (BARESHAFT) |
| SHHZPZZ02913 | FEEDER-LOSS IN WEIGHT |
| SHHZPZZ02933 | SIFTER-MULTISTAGE |
| SHHZPZZ02959 | BLOWER (B FLOUR BLOWER) |
| SHHZPZZ03032 | PCMGOLD SOFTWARE & LICENCE |
| SHHZPZZ03034 | WEIGHER-FLOUR |
| SHHZPZZ03036 | WEIGHER-FLOUR NO 1 |
| SHHZPZZ03037 | WEIGHER-FLOUR NO 2 |
| SHHZPZZ03038 | WEIGHER (AHW MED MO ) |
| SHHZPZZ03047 | SEAL-ROTARY |
| SHHZPZZ03069 | BLOWER DELTA |
| SHHZPZZ03070 | WEIGHER-FLOUR |
| SHHZPZZ03129 | STITCHER-BAG |
| SHHZPZZ03132 | SEAL-ROTARY |
| SHHZPZZ03137 | SPECIAL BRAN WEIGHER |
| SHHZPZZ03205 | MAGNET-RARE EARTH |
| SHHZPZZ03220 | METAL DETECTOR |
| SHHZPZZ03226 | WEIGHER-FLOUR B |
| SHHZPZZ03227 | MILL MIX WEIGHER |
| SHHZPZZ03228 | WEIGHER-SPONGE |
| SHHZPZZ03229 | WEIGHER-AM SHARPS |
| SHHZPZZ03231 | FEEDER-LOSS IN WEIGHT |
| SHHZPZZ03298 | WEIGHER-SPONGE |
| SHHZPZZ03321 | AIR COMPRESSOR |
| SHHZPZZ03472 | STITCHER-BAG |

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| SHHZPZZ03622 | WEIGHER-FLOUR |
| SHHZPZZ03628 | GROOVER |
| SHHZPZZ03636 | CHECKWEIGHER |
| SHHZPZZ03683 | BLOWER |
| SHHZPZZ03742 | FINISHER-BRAN NO2 |
| SHHZPZZ03769 | FINISHER-BRAN NO1 |
| SHHZPZZ03780 | FINISHER-BRAN 4 BK FINE |
| SHHZPZZ03781 | FINISHER-BRAN 4 BK CSE |
| SHHZPZZ03801 | MAGNET SPEAR IN LINE |
| SHHZPZZ03865 | BLOWER(RINSING AIR) |
| SHHZPZZ03977 | FINISHER-VIBRO NO2 |
| SHHZPZZ03978 | FINISHER-VIBRO NO1 |
| SHHZPZZ04028 | PRINTER-LABEL |
| SHHZPZZ04029 | MAGNET |
| SHHZPZZ04071 | STRETCHWRAPPER-PALLET |
| SHHZPZZ04176 | SIFTER-QUIVER NO 1 |
| SHHZPZZ04177 | SIFTER-QUIVER NO 2 |
| SHHZPZZ04178 | SIFTER-QUIVER NO 3 |
| SHHZPZZ04179 | SIFTER-QUIVER NO 2 |
| SHHZPZZ04180 | SIFTER-QUIVER NO 1 |
| SHHZPZZ04181 | SIFTER-QUIVER NO 3 |
| SHHZPZZ04182 | SIFTER-QUIVER NO 4 |
| SHHZPZZ04183 | SIFTER-QUIVER NO 5 |
| SHHZPZZ04184 | SIFTER-QUIVER NO 6 |
| SHHZPZZ04319 | CONTROL PANEL-FORTIFIED FLOUR SYSTEM |
| SHHZPZZ04428 | METAL DETECTOR |
| SHHZPZZ04465 | LATHE-CENTRE |
| SHHZPZZ04523 | BLOWER |
| SHHZPZZ04635 | FINISHER-BRAN |
| SHHZPZZ04836 | METERING STATION NO 1 |
| SHHZPZZ04921 | BAG SETTLER |
| SHHZPZZ04922 | BAG SETTLER |
| SHHZPZZ05039 | SEPARATOR-CYLINDER (UNIFLOW) |
| SHHZPZZ05040 | SEPARATOR-CYLINDER (UNIFLOW) |
| SHHZPZZ05052 | CCTV SYSTEM |
| SHHZPZZ05145 | SWEEPER-FLOOR |
| SHHZPZZ05214 | INKJET CODING SYSTEM |
| SHHZPZZ05490 | MAGNATTACK GRATE WITH TOP DRAWER |
| SHHZPZZ05595 | 2 ROW MAGNETIC GRATE SEPARATOR |
| SHHZPZZ05812 | NEW CONTROL UNIT FOR #2 FLOUR WEIGHER |
| SHHZPZZ05813 | NEW CONTROL UNIT FOR AHW SEMO WEIGHER |
| SHHZPZZ05814 | NEW CONTROL UNIT FOR AM SHARPS WEIGHER |
| SHHZPZZ05815 | NEW CONTROL UNIT FOR B FLOUR WEIGHER |
| SHHZPZZ05816 | NEW CONTROL UNIT FOR CSE SEMO WEIGHER |
| SHHZPZZ05817 | NEW CONTROL UNIT FOR SPECIAL BRAN |
| SHHZPZZ05825 | ENTOLETER |
| SHHZPZZ05826 | ENTOLETER |
| SHHZPZZ05831 | REDRESSER |
| SHHZPZZ06163 | PANEL-AUTO CONDITIONING BINS\ROLL WHEAT |
| SHHZPZZ06413 | NEW CONTROL UNIT FOR WEIGHER |
| SHHZPZZ06414 | NEW CONTROL UNIT FOR WEIGHER |
| SHHZPZZ06415 | NEW CONTROL UNIT FOR WEIGHER |
| SHHZPZZ06416 | NEW CONTROL UNIT FOR WEIGHER |
| SHHZPZZ06417 | NEW CONTROL UNIT FOR WEIGHER #1 |
| SHHZPZZ06651 | AIR DRYER |

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| SHHZPZZ06724 | STITCHER & STAND |
| SHHZPZZ06744 | 2X250MM ERIEZ MAGNAETS |
| SHHZPZZ07008 | CONFINE SPACE EQUIPMENT |
| SHHZPZZ07109 | RUNWAY/TROLLEY/CHAIN BLOCK |
| SHHZPZZ07110 | RUNWAY/TROLLEY/CHAIN BLOCK |
| SHHZPZZ07137 | MAGNET ROUND NOSE PLATE |
| SHHZPZZ07173 | MAGNET DIRECT CONTACT PROBE |
| SHHZPZZ07191 | PUMP CIRC.THERM.BRABENDER T150 |
| SHHZPZZ07192 | PUMP CIRC.THERM.BRABENDER T150 |
| SHHZPZZ07294 | BUFFETS SERIES 33 L DERRETT |
| SHHZPZZ07417 | INDICATOR -WEIGHBRIDGE DIGITAL |
| SHHZPZZ07587 | POWER FACTOR EQUIP - CONSULTNT |
| SHHZPZZ07683 | Wang Laser Printer |
| SHHZPZZ07992 | AIR COMPRESSOR |
| SHHZPZZ08006 | HEAVY DUTY DRILL PRESS SHARP |
| SHHZPZZ08007 | LATHE HERBERT |
| SHHZPZZ08160 | BAND SAW (BROCK) |
| SHHZPZZ08161 | PLANER & BENCH SAW (DOMINION) |
| SHHZPZZ08162 | PNEUM. SIEVE STRETCHER |
| SHHZPZZ08167 | CUT-OFF MACHINE 355MM HITACHI |
| SHHZPZZ08170 | SHEET METAL EDGE FOLDER HEINE |
| SHHZPZZ08175 | FIRE HOSE |
| SHHZPZZ08181 | SECURITY SIEVE (ST REGIS PACK) |
| SHHZPZZ08182 | HAND PALLET TRUCK |
| SHHZPZZ09087 | Aerzen GM35S Delta Blower Bulk Bin 14 Outloading |
| SHHZPZZ09170 | 6 x Obscuration Monitors (Dust Monitors) CEA 10602 |
| SHHZPZZ09183 | Wheat Intake Filter CEA 10450 |
| SHHZPZZ09184 | Infestation Destroyer Magnet CEA 10632 |
| SHHZTZZ01595 | IT EQUIPMENT THROUGHOUT |
| SHHZTZZ01831 | NT SERVER UPGRADE #1 |
| SHHZTZZ01832 | NT SERVER UPGRADE #2 |
| SHHZTZZ03738 | DELL OPTIPLEX GXI PIII 450 |
| SHHZTZZ05072 | Dell Computer ex Rockhampton |
| SHHZTZZ06331 | Invoice Printer. |
| SHHZTZZ09025 | Colour Plotter HP designjet 500 42AO |
| SHHZTZZ09026 | Dot Matrix Printer T2245 Summer Hill Warehouse |
| SHLACNA00001 | AIR CONDITIONER FOR LABORATORY |
| SHLLENA00001 | UNITY SPECTRASTAR 2400 - SHILL MILL |
| SHLLENA00002 | LECO TRUSPEC NITROGEN DETERMINATOR - SHILL MILL |
| SHLLENA00003 | LECO 250 BALANCE & I/FACE + PRINTER |
| SHOOENA00001 | BENQ 2000 ANSI XGA PROJECTOR |
| SHPBSNA00001 | CAROUSEL BAG PLACER ARMS |
| SHPPBNA00001 | NEW PACKAGING PLATES / BLOCKS |
| SHPPBNA00002 | BISCUIT FLOUR 20 PACKAGING PLATES/ARTWORK |
| SHPPBNA00003 | MEDIUM FLOUR 20 PACKAGING PLATES/ARTWORK |
| SHPPBNA00004 | BRUMBYS BAKERS 15 ARTWORK |
| SHPPBNA00005 | PLAIN & PIZZA FLOUR PACKAGING PLATES & BLOCKS |
| SHPPBNA00006 | PACKAGING PLATES & BLOCKS F05 |
| SHPSWNA00001 | STEP7 SOFTWARE PACKAGE CAROUSEL BAG PLACER ARMS |
| SHWPRNA00001 | PRINTER HP LASERJET 4200TN DUAL TRAY DEL DOCKETS |

## Appendix B

*The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999.*

# The Burra Charter

(The Australia ICOMOS Charter for Places of Cultural Significance)

## Preamble

Considering the International Charter for the Conservation and Restoration of Monuments and Sites (Venice 1964), and the Resolutions of the 5th General Assembly of the International Council on Monuments and Sites (ICOMOS) (Moscow 1978), the Burra Charter was adopted by Australia ICOMOS (the Australian National Committee of ICOMOS) on 19 August 1979 at Burra, South Australia. Revisions were adopted on 23 February 1981, 23 April 1988 and 26 November 1999.

The Burra Charter provides guidance for the conservation and management of places of cultural significance (cultural heritage places), and is based on the knowledge and experience of Australia ICOMOS members.

Conservation is an integral part of the management of places of cultural significance and is an ongoing responsibility.

### Who is the Charter for?

The Charter sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers and custodians.

### Using the Charter

The Charter should be read as a whole. Many articles are interdependent. Articles in the Conservation Principles section are often further developed in the Conservation Processes and Conservation Practice sections. Headings have been included for ease of reading but do not form part of the Charter.

The Charter is self-contained, but aspects of its use and application are further explained in the following Australia ICOMOS documents:

- Guidelines to the Burra Charter: Cultural Significance;
- Guidelines to the Burra Charter: Conservation Policy;
- Guidelines to the Burra Charter: Procedures for Undertaking Studies and Reports;
- Code on the Ethics of Coexistence in Conserving Significant Places.

### What places does the Charter apply to?

The Charter can be applied to all types of places of cultural significance including natural, indigenous and historic places with cultural values.

The standards of other organisations may also be relevant. These include the Australian Natural Heritage Charter and the Draft Guidelines for the Protection, Management and Use of Aboriginal and Torres Strait Islander Cultural Heritage Places.

### Why conserve?

Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records, that are important as tangible expressions of Australian identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious.

These places of cultural significance must be conserved for present and future generations.

The Burra Charter advocates a cautious approach to change: do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained.

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## Articles

### Article 1. Definitions

For the purposes of this Charter:

**1.1** *Place* means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

## Explanatory Notes

The concept of place should be broadly interpreted. The elements described in Article 1.1 may include memorials, trees, gardens, parks, places of historical events, urban areas, towns, industrial places, archaeological sites and spiritual and religious places.

**1.2** *Cultural significance* means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural significance is embodied in the *place* itself, its *fabric*, *setting*, *use*, *associations*, *meanings*, records, *related places* and *related objects*.

Places may have a range of values for different individuals or groups.

The term cultural significance is synonymous with heritage significance and cultural heritage value.

Cultural significance may change as a result of the continuing history of the place.

Understanding of cultural significance may change as a result of new information.

**1.3** *Fabric* means all the physical material of the *place* including components, fixtures, contents, and objects.

Fabric includes building interiors and sub-surface remains, as well as excavated material.

Fabric may define spaces and these may be important elements of the significance of the place.

**1.4** *Conservation* means all the processes of looking after a *place* so as to retain its *cultural significance*.

**1.5** *Maintenance* means the continuous protective care of the *fabric* and *setting* of a *place*, and is to be distinguished from repair. Repair involves *restoration* or *reconstruction*.

The distinctions referred to, for example in relation to roof gutters, are:

- maintenance — regular inspection and cleaning of gutters;
- repair involving restoration — returning of dislodged gutters;
- repair involving reconstruction — replacing decayed gutters.

**1.6** *Preservation* means maintaining the *fabric* of a *place* in its existing state and retarding deterioration.

It is recognised that all places and their components change over time at varying rates.

**1.7** *Restoration* means returning the existing *fabric* of a *place* to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

**1.8** *Reconstruction* means returning a *place* to a known earlier state and is distinguished from *restoration* by the introduction of new material into the *fabric*.

New material may include recycled material salvaged from other places. This should not be to the detriment of any place of cultural significance.

**1.9** *Adaptation* means modifying a *place* to suit the existing *use* or a proposed use.

**1.10** *Use* means the functions of a place, as well as the activities and practices that may occur at the place.

**1.11** *Compatible use* means a *use* which respects the *cultural significance* of a *place*. Such a use involves no, or minimal, impact on cultural significance.

**1.12** *Setting* means the area around a *place*, which may include the visual catchment.

**1.13** *Related place* means a *place* that contributes to the *cultural significance* of another place.

**1.14** *Related object* means an object that contributes to the *cultural significance* of a *place* but is not at the place.

**1.15** *Associations* mean the special connections that exist between people and a *place*.

Associations may include social or spiritual values and cultural responsibilities for a place.

**1.16** *Meanings* denote what a *place* signifies, indicates, evokes or expresses.

Meanings generally relate to intangible aspects such as symbolic qualities and memories.

**1.17** *Interpretation* means all the ways of presenting the *cultural significance* of a *place*.

Interpretation may be a combination of the treatment of the fabric (e.g. maintenance, restoration, reconstruction); the use of and activities at the place; and the use of introduced explanatory material.

## Conservation Principles

**Article 2. Conservation and management**

**2.1** *Places* of *cultural significance* should be conserved.

**2.2** The aim of *conservation* is to retain the *cultural significance* of a *place*.

**2.3** *Conservation* is an integral part of good management of *places* of *cultural significance*.

**2.4** *Places* of *cultural significance* should be safeguarded and not put at risk or left in a vulnerable state.

**Article 3. Cautious approach**

**3.1** *Conservation* is based on a respect for the existing *fabric*, *use*, *associations* and *meanings*. It requires a cautious approach of changing as much as necessary but as little as possible.

The traces of additions, alterations and earlier treatments to the fabric of a place are evidence of its history and uses which may be part of its significance. Conservation action should assist and not impede their understanding.

**3.2** Changes to a *place* should not distort the physical or other evidence it provides, nor be based on conjecture.

**Article 4. Knowledge, skills and techniques**

**4.1** *Conservation* should make use of all the knowledge, skills and disciplines which can contribute to the study and care of the *place*.

**4.2** Traditional techniques and materials are preferred for the *conservation* of significant *fabric*. In some circumstances modern techniques and materials which offer substantial conservation benefits may be appropriate.

The use of modern materials and techniques must be supported by firm scientific evidence or by a body of experience.

**Article 5. Values**

**5.1** *Conservation* of a *place* should identify and take into consideration all aspects of cultural and natural significance without unwarranted emphasis on any one value at the expense of others.

Conservation of places with natural significance is explained in the Australian Natural Heritage Charter. This Charter defines natural significance to mean the importance of ecosystems, biological diversity and geodiversity for their existence value, or for present or future generations in terms of their scientific, social, aesthetic and life-support value.

**5.2** Relative degrees of *cultural significance* may lead to different *conservation* actions at a place.

A cautious approach is needed, as understanding of cultural significance may change. This article should not be used to justify actions which do not retain cultural significance.

**Article 6. Burra Charter Process**

**6.1** The *cultural significance* of a *place* and other issues affecting its future are best understood by a sequence of collecting and analysing information before making decisions. Understanding cultural significance comes first, then development of policy and finally management of the place in accordance with the policy.

The Burra Charter process, or sequence of investigations, decisions and actions, is illustrated in the accompanying flowchart.

**6.2** The policy for managing a *place* must be based on an understanding of its *cultural significance*.

**6.3** Policy development should also include consideration of other factors affecting the future of a *place* such as the owner's needs, resources, external constraints and its physical condition.

**Article 7. Use**

**7.1** Where the *use* of a *place* is of *cultural significance* it should be retained.

**7.2** A *place* should have a *compatible use*.

The policy should identify a use or combination of uses or constraints on uses that retain the cultural significance of the place. New use of a place should involve minimal change, to significant fabric and use; should respect associations and meanings; and where appropriate should provide for continuation of practices which contribute to the cultural significance of the place.

**Article 8. Setting**

*Conservation* requires the retention of an appropriate visual *setting* and other relationships that contribute to the *cultural significance* of the *place*.

Aspects of the visual setting may include use, siting, bulk, form, scale, character, colour, texture and materials.

New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate.

Other relationships, such as historical connections, may contribute to interpretation, appreciation, enjoyment or experience of the place.

**Article 9. Location**

**9.1** The physical location of a *place* is part of its *cultural significance.* A building, work or other component of a place should remain in its historical location. Relocation is generally unacceptable unless this is the sole practical means of ensuring its survival.

**9.2** Some buildings, works or other components of *places* were designed to be readily removable or already have a history of relocation. Provided such buildings, works or other components do not have significant links with their present location, removal may be appropriate.

**9.3** If any building, work or other component is moved, it should be moved to an appropriate location and given an appropriate *use*. Such action should not be to the detriment of any *place* of *cultural significance*.

**Article 10. Contents**

Contents, fixtures and objects which contribute to the *cultural significance* of a *place* should be retained at that place. Their removal is unacceptable unless it is: the sole means of ensuring their security and *preservation*; on a temporary basis for treatment or exhibition; for cultural reasons; for health and safety; or to protect the place. Such contents, fixtures and objects should be returned where circumstances permit and it is culturally appropriate.

**Article 11. Related places and objects**

The contribution which *related places* and *related objects* make to the *cultural significance* of the *place* should be retained.

**Article 12. Participation**

*Conservation, interpretation* and management of a *place* should provide for the participation of people for whom the place has special *associations* and *meanings*, or who have social, spiritual or other cultural responsibilities for the place.

**Article 13. Co-existence of cultural values**

Co-existence of cultural values should be recognised, respected and encouraged, especially in cases where they conflict.

For some places, conflicting cultural values may affect policy development and management decisions. In this article, the term cultural values refers to those beliefs which are important to a cultural group, including but not limited to political, religious, spiritual and moral beliefs. This is broader than values associated with cultural significance.

## Conservation Processes

### Article 14. Conservation processes

*Conservation* may, according to circumstance, include the processes of: retention or reintroduction of a *use*; retention of *associations* and *meanings*; *maintenance, preservation*, *restoration*, *reconstruction, adaptation* and *interpretation*; and will commonly include a combination of more than one of these.

There may be circumstances where no action is required to achieve conservation.

### Article 15. Change

**15.1** Change may be necessary to retain *cultural significance*, but is undesirable where it reduces cultural significance. The amount of change to a *place* should be guided by the *cultural significance* of the place and its appropriate *interpretation*.

When change is being considered, a range of options should be explored to seek the option which minimises the reduction of cultural significance.

**15.2** Changes which reduce *cultural significance* should be reversible, and be reversed when circumstances permit.

Reversible changes should be considered temporary. Non-reversible change should only be used as a last resort and should not prevent future conservation action.

**15.3** Demolition of significant *fabric* of a *place* is generally not acceptable. However, in some cases minor demolition may be appropriate as part of *conservation*. Removed significant fabric should be reinstated when circumstances permit.

**15.4** The contributions of all aspects of *cultural significance* of a *place* should be respected. If a place includes *fabric*, *uses*, *associations* or *meanings* of different periods, or different aspects of cultural significance, emphasising or interpreting one period or aspect at the expense of another can only be justified when what is left out, removed or diminished is of slight cultural significance and that which is emphasised or interpreted is of much greater cultural significance.

### Article 16. Maintenance

*Maintenance* is fundamental to *conservation* and should be undertaken where *fabric* is of *cultural significance* and its *maintenance* is necessary to retain that *cultural significance*.

### Article 17. Preservation

*Preservation* is appropriate where the existing *fabric* or its condition constitutes evidence of *cultural significance,* or where insufficient evidence is available to allow other *conservation* processes to be carried out.

Preservation protects fabric without obscuring the evidence of its construction and use. The process should always be applied:

- where the evidence of the fabric is of such significance that it should not be altered;
- where insufficient investigation has been carried out to permit policy decisions to be taken in accord with Articles 26 to 28.

New work (e.g. stabilisation) may be carried out in association with preservation when its purpose is the physical protection of the fabric and when it is consistent with Article 22.

### Article 18. Restoration and reconstruction

*Restoration* and *reconstruction* should reveal culturally significant aspects of the *place*.

### Article 19. Restoration

*Restoration* is appropriate only if there is sufficient evidence of an earlier state of the *fabric*.

**Article 20. Reconstruction**

**20.1** *Reconstruction* is appropriate only where a *place* is incomplete through damage or alteration, and only where there is sufficient evidence to reproduce an earlier state of the *fabric*. In rare cases, reconstruction may also be appropriate as part of a *use* or practice that retains the *cultural significance* of the place.

**20.2** *Reconstruction* should be identifiable on close inspection or through additional *interpretation*.

**Article 21. Adaptation**

**21.1** *Adaptation* is acceptable only where the adaptation has minimal impact on the *cultural significance* of the *place*.

Adaptation may involve the introduction of new services, or a new use, or changes to safeguard the place.

**21.2** *Adaptation* should involve minimal change to significant fabric, achieved only after considering alternatives.

**Article 22. New work**

**22.1** New work such as additions to the *place* may be acceptable where it does not distort or obscure the *cultural significance* of the place, or detract from its *interpretation* and appreciation.

New work may be sympathetic if its siting, bulk, form, scale, character, colour, texture and material are similar to the existing fabric, but imitation should be avoided.

**22.2** New work should be readily identifiable as such.

**Article 23. Conserving use**

Continuing, modifying or reinstating a significant *use* may be appropriate and preferred forms of *conservation*.

These may require changes to significant *fabric* but they should be minimised. In some cases, continuing a significant use or practice may involve substantial new work.

**Article 24. Retaining associations and meanings**

**24.1** Significant *associations* between people and a *place* should be respected, retained and not obscured. Opportunities for the *interpretation*, commemoration and celebration of these associations should be investigated and implemented.

For many places associations will be linked to use.

**24.2** Significant *meanings*, including spiritual values, of a *place* should be respected. Opportunities for the continuation or revival of these meanings should be investigated and implemented.

**Article 25. Interpretation**

The *cultural significance* of many *places* is not readily apparent, and should be explained by *interpretation*. Interpretation should enhance understanding and enjoyment, and be culturally appropriate.

## Conservation Practice

**Article 26. Applying the Burra Charter process**

**26.1** Work on a *place* should be preceded by studies to understand the place which should include analysis of physical, documentary, oral and other evidence, drawing on appropriate knowledge, skills and disciplines.

The results of studies should be up to date, regularly reviewed and revised as necessary.

**26.2** Written statements of *cultural significance* and policy for the *place* should be prepared, justified and accompanied by supporting evidence. The statements of significance and policy should be incorporated into a management plan for the place.

Statements of significance and policy should be kept up to date by regular review and revision as necessary. The management plan may deal with other matters related to the management of the place.

**26.3** Groups and individuals with *associations* with a *place* as well as those involved in its management should be provided with opportunities to contribute to and participate in understanding the *cultural significance* of the place. Where appropriate they should also have opportunities to participate in its *conservation* and management.

**Article 27. Managing change**

**27.1** The impact of proposed changes on the *cultural significance* of a *place* should be analysed with reference to the statement of significance and the policy for managing the place. It may be necessary to modify proposed changes following analysis to better retain cultural significance.

**27.2** Existing *fabric, use, associations* and *meanings* should be adequately recorded before any changes are made to the *place*.

**Article 28. Disturbance of fabric**

**28.1** Disturbance of significant *fabric* for study, or to obtain evidence, should be minimised. Study of a *place* by any disturbance of the fabric, including archaeological excavation, should only be undertaken to provide data essential for decisions on the *conservation* of the place, or to obtain important evidence about to be lost or made inaccessible.

**28.2** Investigation of a *place* which requires disturbance of the *fabric*, apart from that necessary to make decisions, may be appropriate provided that it is consistent with the policy for the place. Such investigation should be based on important research questions which have potential to substantially add to knowledge, which cannot be answered in other ways and which minimises disturbance of significant fabric.

**Article 29. Responsibility for decisions**

The organisations and individuals responsible for management decisions should be named and specific responsibility taken for each such decision.

**Article 30. Direction, supervision and implementation**

Competent direction and supervision should be maintained at all stages, and any changes should be implemented by people with appropriate knowledge and skills.

**Article 31. Documenting evidence and decisions**

A log of new evidence and additional decisions should be kept.

**Article 32. Records**

**32.1** The records associated with the *conservation* of a *place* should be placed in a permanent archive and made publicly available, subject to requirements of security and privacy, and where this is culturally appropriate.

**32.2** Records about the history of a *place* should be protected and made publicly available, subject to requirements of security and privacy, and where this is culturally appropriate.

**Article 33. Removed fabric**

Significant *fabric* which has been removed from a *place* including contents, fixtures and objects, should be catalogued, and protected in accordance with its *cultural significance*.

Where possible and culturally appropriate, removed significant fabric including contents, fixtures and objects, should be kept at the place.

**Article 34. Resources**

Adequate resources should be provided for *conservation*.

The best conservation often involves the least work and can be inexpensive.

*Words in italics are defined in Article 1.*

# The Burra Charter Process

Sequence of investigations, decisions and actions