

Appendix B

Former Maltworks, Thornleigh report

16 April 2014

Transurban Group
Level 9 / 1 Chifley Square
SYDNEY NSW 2000

Heritage impact assessment of Thornleigh Maltworks, 1 Pioneer Avenue, Thornleigh, NSW - NorthConnex

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was commissioned to conduct a heritage impact assessment of the locally listed Thornleigh Maltworks (*Hornsby Local Environmental Plan 2013 - #A66*), located at 1 Pioneer Avenue, Thornleigh, NSW in the Hornsby local government area (Lot 12 DP235680). The site would be developed for the purpose of providing the site amenities, bus transfer area and car parking spaces (referred to as the Pioneer Avenue compound) for the NorthConnex project (the project). This would require the demolition of a locally listed heritage item.

This assessment involved:

- a search of the relevant heritage databases including:
 - NSW State Heritage Inventory;
 - *Hornsby Local Environment Plan 2013* (Hornsby LEP 2013);
- desktop review of available documentary sources/ heritage reports on the identified structure using existing information (both online and at the Hornsby Shire Library); and
- a one day site inspection of the Thornleigh Maltworks.

The contents of this letter report have been compiled in accordance with the NSW Heritage Division's guidelines *Assessing Heritage Significance* (NSW Heritage Office 2001).

2.0 Proposed Activity

As part of the construction of the project, the requirement for staff amenities and parking compound that can accommodate the large project workforce for this project has been identified. The Pioneer Avenue compound has been selected owing to its position relative to project construction areas and major private and public transport hubs.

The proposed compound would generally consist of:

- parking spaces for light vehicles;
- a bus transfer area for up to 12 buses;
- employee change rooms and showers; and
- a first aid station.

The compound would be primarily used as a car parking location for construction personnel. A shuttle bus would be used to transfer workers to and from construction sites. This would limit the number of workforce parking spaces required within the individual construction compounds and the potential for impacts on public parking spaces in the surrounding streets.

The site would be established at the commencement of the construction period and would remain in use until construction works are complete. The employee car parking and shuttle bus would operate up to 24 hour per day and seven days per week.

Access to the site would primarily be from Lymoore Avenue with secondary access from Pioneer Avenue.

3.0 Relevant Legislation

3.1 Heritage Act 1977

The *Heritage Act 1977* was enacted to conserve the environmental heritage of NSW. Under section 32, places, buildings, works, relics, moveable objects or precincts of heritage significance are protected by means of either Interim Heritage Orders (IHO) or by listing on the State Heritage Register (SHR). Items that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the Heritage Council.

Archaeological relics (any relics that are buried) are protected by the provisions of section 139 of the *Heritage Act 1977*. Under this section it is illegal to disturb or excavate any land knowing or suspecting that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. Note that no formal listing is required for archaeological relics; they are automatically protected if they are of local significance or higher.

3.2 Hornsby Local Environmental Plan 2013

Clause 5.10 of the Hornsby LEP 2013 controls development in relation to heritage items within the Hornsby Shire area. Development consent is required for the following:

- demolishing or moving a heritage item;
- altering a heritage item;
- disturbing or excavating an archaeological deposit;
- erecting a building on land where a heritage item exists; and
- subdividing land where a heritage item exists.

All development that may impact on heritage listed items must consider the effect of the proposed development on the heritage significance of the item concerned. Development consent is not required as the project is permissible without consent by virtue of *State Environmental Planning Policy (Infrastructure) 2007*.

Schedule 5 of the Hornsby LEP 2013 provides a list of identified heritage items, conservation areas and streetscapes. One listed heritage item and focus of this study, the Thornleigh Maltworks (Hornsby LEP 2013 #A66, 'Remains of maltworks'), was identified in this schedule.

4.0 Historical Context

4.1 The Thornleigh Maltworks

The Thornleigh Maltworks were officially opened on 29 August 1913 by the 19th Premier of New South Wales, the Honourable William Holman. During the ceremony, Premier Holman announced that he had accepted the invitation to attend the 'interesting and novel' occasion with pleasure, and that he considered the Maltworks to be a valuable industrial enterprise for the state of New South Wales (Anon 1913c). Among the large crowd of locals who attended the ceremony were representatives of the Tooheys Limited brewing company and the Department of Agriculture, as well as the renowned Sydney brewer A.W. Tooth of Tooth and Company Limited.

The opening of the Thornleigh Maltworks represented a significant step forward in the industrialisation of the local area, as well as in the progression of the Australian malting industry. Prior to the opening of the Thornleigh Maltworks, only one malting house was in operation in New South Wales. This malting house was located in Mittagong, approximately 130 kilometres outside of Sydney, and despite being estimated to have doubled in capacity since its installation, was not able to produce the volume of malt required by the major Sydney breweries that it serviced. Consequently, New South Wales continued to purchase malt from other states at an estimated annual cost of around £130,000 (Anon 1911a).

In September of 1911, the impetus to open a second malt house in New South Wales culminated in a proposal to construct a malting house on the Main Northern Line, between Sydney and Hornsby. In October of that same year, the New South Wales Malting Company (NSW Malting Co.) purchased 12 acres of orchard from a Mr. Cheetham in Thornleigh (Anon 1911b) and by November 1912 the construction of the Maltworks and an associated railway siding was well underway (Anon 1912) with the works being completed by July of 1913 (Anon 1913b). At that time, the NSW Malting Co. was identified as the only public malting company operating in New South Wales (Anon 1913a). The total costs of construction were estimated at around £15,000, and the new Maltworks were expected to produce between 90,000 and 100,000 bushels of malt per season, the equivalent of around one fifth of the amount of malt still being purchased from other states (Anon 1913c).

The Maltworks operated smoothly under the guidance of William George Chilvers, a highly experienced and renowned maltster who had gained experience malting both in England and Australia prior to accepting the position at Thornleigh. Following his death in 1937, Chilvers was succeeded by his son Hugh Cecil. The Chilvers family lived in a three bedroom house that was constructed in 1913 within 50 metres of the Maltworks. Throughout its years of operation, between 12 and 20 men were employed at the Maltworks at any one time (pers. comm., H. Chilvers to T. Kennedy).

Over time, the Maltworks established itself as an important feature of the local community and agriculture industry; in 1915 agricultural students from Granville and Sydney Technical Colleges visited in the orchards attached to the Maltworks for a lesson in pruning apple trees (Anon 1915), and from the 1910s to the 1940s both William and Hugh Chilvers acted as the lead judges of barely crops at the annual Sydney Royal Easter Show (numerous).

In 1966, the NSW Malting Co. sold the Thornleigh Maltworks to Barrett Bros. and Burston and Co. Pty. Ltd., an English malting company established in the 1860s. Following this change of hands, the Maltworks were subject to extensive remodelling and modernisation at a cost of around £2,356,000 (Anon 1968). Production recommenced under the new owners by the end of 1967 (Barrett Bros. and Burstone Co. Pty. Ltd. 1972, 11), and continued up until the late 2000s when the site was closed.

4.2 A Family Enterprise

The Chilvers family have significant connections with the early Australian malting industry, as well as with the Hornsby Shire local area. William George Chilvers was born in Hunslet, Leeds, on 19 September 1872 to George Chilvers, also a maltster, and his wife Rose Ellen Mole. Prior to migrating to Australia, Chilvers worked for the English malting firm of William Jones and Sons Ltd, where he was responsible for overseeing the operation of over 30 large maltings (Anon 1904b). When Jones and Sons Ltd. purchased maltings in Toowoomba, Queensland, they invited Chilvers to relocate to Australia and oversee operations (Anon 1904b). At the time, Chilvers was considered to be a leader in his field; and had been described as 'practically the best maltster obtainable in England to-day' (Anon 1904a).

Chilvers worked at the Toowoomba Maltings until he relocated to Sydney in 1912 to oversee the construction and manage the operation of the Thornleigh Maltworks. He brought with him his wife, Alice Maud Shellard, and their seven children; Birdie Violet, Iris Constance, Audrey Lillian, Hugh Cecil, Millicent Grace, Arthur Herbert and

Douglas Algenon (Anon 2014b). The family lived in a three bedroom home located within 50 metres of, and constructed at the same time as, the original Maltworks buildings.

William Chilvers passed away on 1 September 1937, at which time his son Hugh Cecil Chilvers took over management of the Maltworks. Hugh had been his fathers' understudy for many years previously, and represented the fifth generation of Chilvers to take up the role of maltster (pers. comm., H. Chilvers to T. Kennedy). Following the sale of the Maltworks to Barrett Bros. and Burston and Co. Pty. Ltd in 1966, Hugh retired as manager but stayed on for a further 10 years as Plant Manager under the new owners.

Both William and Hugh were notable local personalities within the Hornsby Shire area; from the 1910s through to the 1930s both father and son were invited to act as expert judges of barley crops at the annual Sydney Royal Easter Show, and the Chilvers family regularly appeared in local newspapers (Anon 1916). Hugh was particularly well known throughout New South Wales as a result of his skills as a cricketer; between 1929 and 1937 he played 32 first-class matches for New South Wales, 25 of which were Sheffield Shield matches alongside fellow cricketer Donald Bradman. Hugh's performances on the cricket pitch have earned him the description of 'the best spin bowler never to play for Australia' (Anon 2014a).

5.0 Desktop Review

5.1 NSW Heritage Inventory

A search of the NSW Heritage Inventory for the Study Area and its surrounds identified that one locally listed heritage item, the 'remains of maltworks' (Hornsby LEP 2013 #A66), is located within the Study Area. The item is described as:

The old Maltings occupied the same site and two of the existing buildings (railway shed and small office) may belong to that period, as they are very similar to those shown on a '1960s painting by J. Segall, now in the manager's office [sic] Material Exterior : brick and concrete Material Interior : not inspected

NSW State Heritage Inventory

The statement of significance subsequently states that the item is an:

Unusual industry which continues to use an older building layout and style though the present buildings date to the late 1960s. Important industry for the region and employer in the locality.

NSW State Heritage Inventory

The remains of the Thornleigh Maltworks are not listed on the State Heritage Register. The closest State Heritage listed item to the Study Area is the Gilligaloola' residence (SHR #271), which is located around 1.3 kilometres to the east. Aerial photography has also concluded that the listing description is incorrect and that the two existing buildings from the early history of the site are the germination building and the Manager's House. (see Section 5.3).

5.2 Previous Heritage Reports

5.2.1 Higginbotham 1993

Higginbotham Consultant Archaeological Services were commissioned in 1993 by Perumal Murphy Wu Pty Ltd (on behalf of Hornsby Shire Council and the Department of Planning) to prepare a report on the historical archaeology of the Hornsby Shire (Kass 1993; Higginbotham 1993). This report formed part of the wider Hornsby Heritage Study conducted to inform the listing of local heritage for the first Hornsby Shire Local Environmental Plan in 1994.

The report identified 95 historical archaeological sites within the Hornsby Shire area. Within the historical theme of 'Industrialisation', Higginbotham identified the Thornleigh Maltings (Report Listing No. 077) as an important local historic site (Higginbotham 1993: 14). The report asserted that the Maltworks were still in use, but had been entirely remodelled but did not identify any specific recommendations for the conservation, protection or archival recording of the site.

5.2.2 SKM 2004

SKM were commissioned by the Australian Government in early 2002 to undertake the F3 to Sydney Orbital Link Study, which included a non-Indigenous heritage assessment component. The report stated that the remains of the Thornleigh Maltworks had been identified by Hornsby Council as an item of regional heritage significance, and that it was therefore possible for the site to be considered for State heritage listing ((Sinclair Knight Merz Pty Ltd 2004, 15–18)).

5.3 Aerial Photography and Archival Documentation

A review of aerial photography and archival documents of the Study Area from 1930 to the present day shows how the layout and structural components of the Thornleigh Maltworks site have changed over time (refer to **Figure 1** to **Figure 3**). Two distinct phases of construction have been identified; the original construction works, which were commissioned by the NSW Malting Co. and occurred between 1911 and 1913 (refer to **Figure 1**), and the remodelling and modernisation works, which were commissioned by Barrett Bros. and Burston and Co. Pty. Ltd and took place between 1966 and 1968 (refer to **Figure 3**).

5.3.1 Initial Construction and Production – 1917 to 1930s

The initial construction and development of the Maltworks took place in the rural landscape of Thornleigh prior to its industrialisation with the principal structures of the Maltworks being surrounded by orchards to the north and south. The excavation pit associated with the Thornleigh Brickworks can be seen to the southeast opposite the Northern Rail Line.

From an assessment of the 1930s aerial photograph, it is likely that the arrangement of structures is similar to the original layout of the Maltworks and includes the main malting complex and the Manager's House; the initial railway siding; and a small grain storage shed located to the south of the main complex. The main malting complex consisted of a germination building (still extant) and at least two pyramidal roofed kilns for drying the germinated cereal grain. The Manager's House was constructed as a family home by William Chilvers for the purpose of being able to oversee the construction of the maltworks and to supervise the malting process while accommodating his young family.

Based on a comparison of aerial and early photography, it can be determined that the germination building within the Main malting complex and the Manager's House are the only original structures from this early part of the Maltworks history. It is also likely that the current rail siding follows the original siding route, although it is unclear if the trackwork is original or was upgraded when the siding was extended further into the compound.

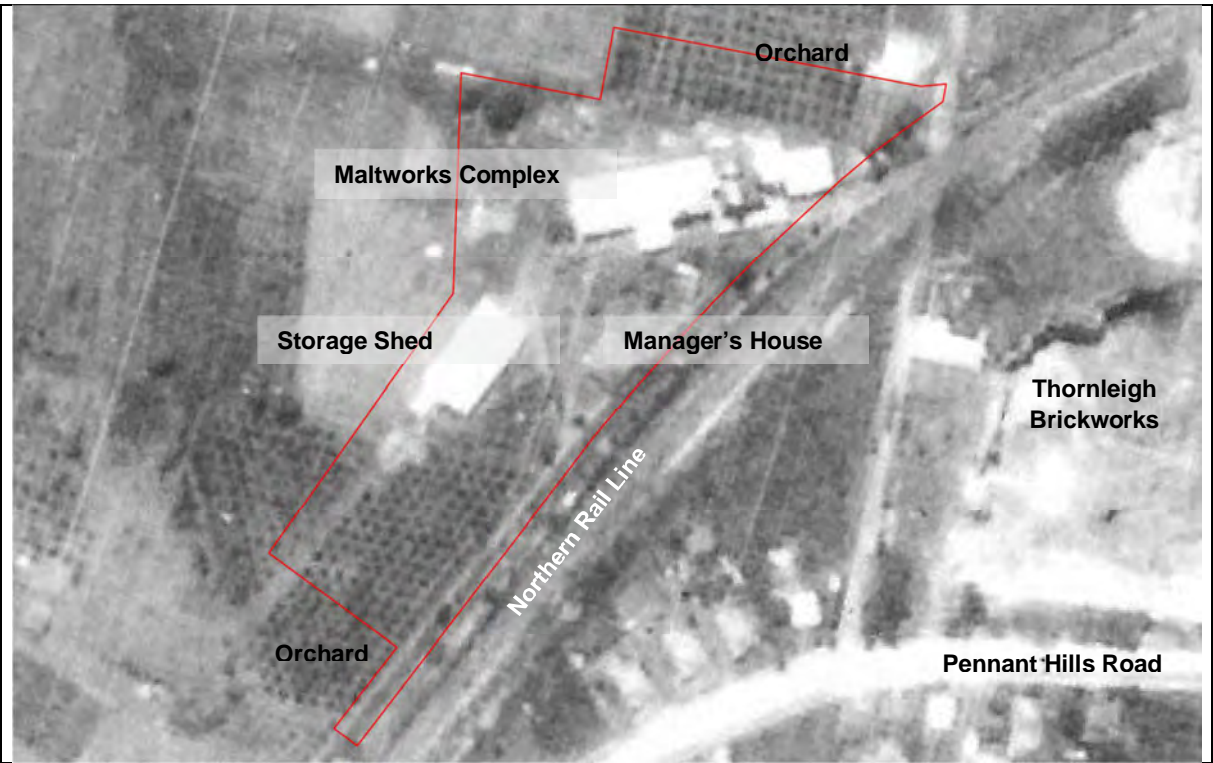
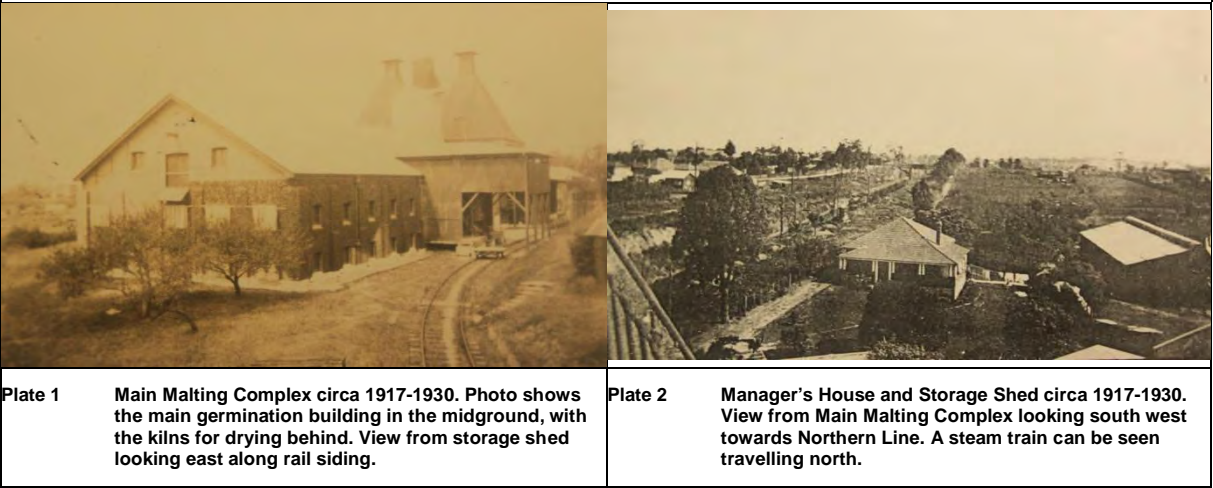


Figure 1 Aerial Photography 1930
(Source: Department of Land and Property Information, NSW Government)



	
<p>Plate 3 Undated painting of the Maltworks showing the main germination building in the foreground and red kilns behind that. The chimneys of the Thornleigh Brickworks can be seen in the background.</p>	<p>Plate 4 Undated photo of the Manager's house.</p>

5.3.2 Expansion, Stabilisation and Urban Creep – 1940s to 1965

The years from World War II to the mid 1960s was a period denoted by expanded storage capacity followed by extensive stability for the maltworks. An extension to the grain storehouses was undertaken between 1930 and the 1943 as evidenced from aerial photography. In addition to this one can see a decline in the number and size of orchards in the area combined with an increase in urban development. This trend increases through to the 1960s where we see the removal of the orchards at a time when industrialisation of the area begins in earnest. During this time, the maltworks remained relatively unchanged, save for minor landscape modifications, and path improvement.

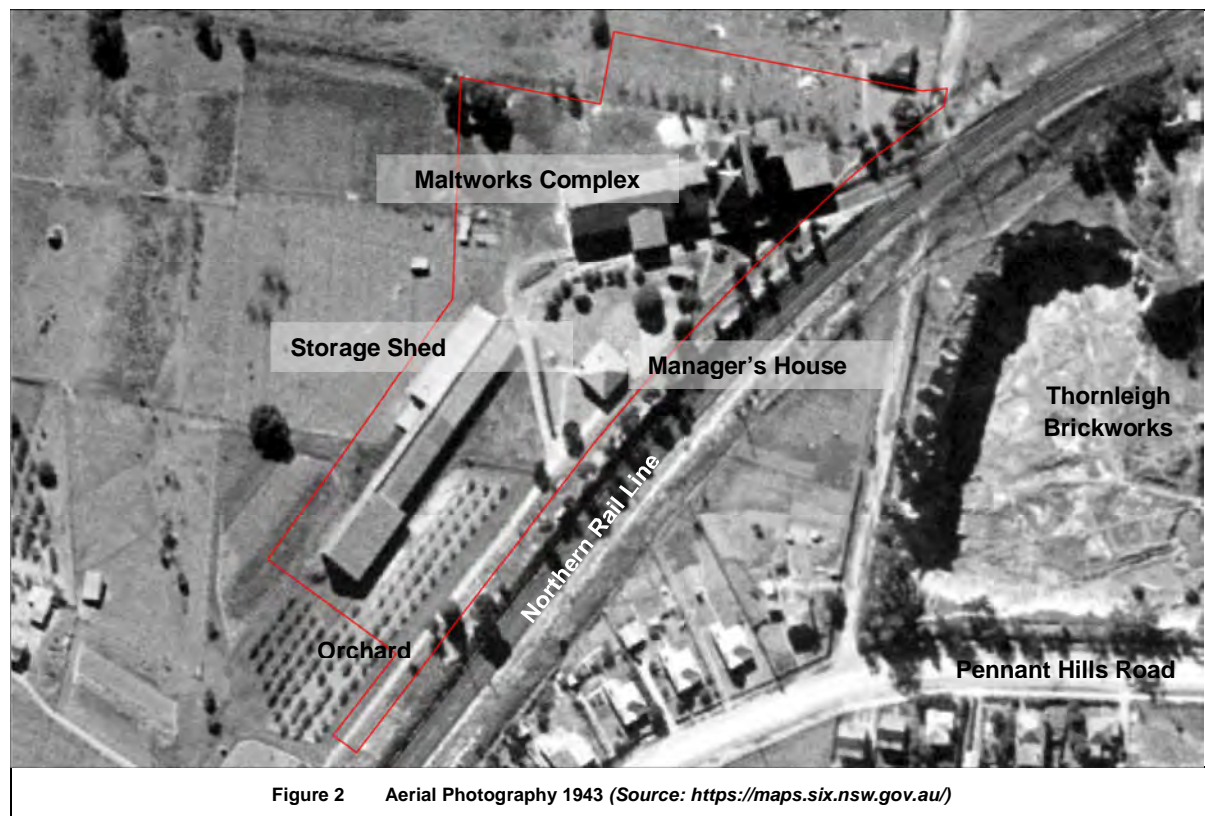




Plate 5 Steam train exiting the Gonarro Siding that serviced the Maltworks circa mid-20th century



Plate 6 Photo showing the original kilns and the germination building covered in ivy

5.3.3 Modernisation - 1966 to 2000s

With the closure of the maltworks in Mittagong in the 1970s, the Thornleigh maltworks found itself becoming one of the principal suppliers of malt to NSW. This combined with a destructive fire in the transit bins in 1970 marked a period of significant redevelopment of the site. The timber kilns and transit bins were replaced during this time and a new steephouse for washing of grains was constructed to the west of the germination building. Administration, laboratory testing facilities and workshops were added to the south of the malting complex. The germination building was also upgraded to accommodate new machinery to assist with the germination process. In addition to the new upgrades for the main malting complex, the southern half of the maltworks saw significant works being undertaken including the construction of new grain treatment/storage sheds and silos. Finally in the north of the site, the other major infrastructure was a water treatment plant that was built to treat the excess water generated by the plant during the cleaning process. These major developments within the site were set against a backdrop of extensive industrialisation of the Thornleigh area that also saw the construction of Pioneer Avenue to service the new industries of the area.

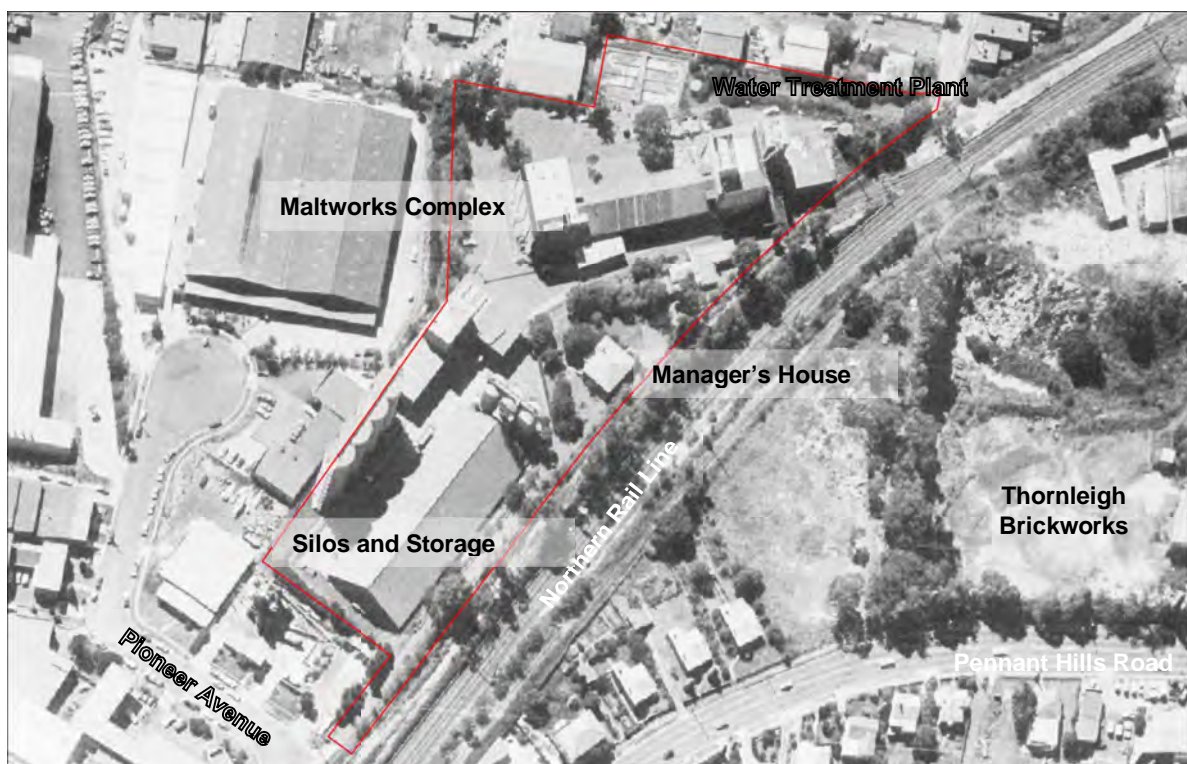


Figure 3 Aerial Photography 1978 (Source: Department of Land and Property Information, NSW Government)

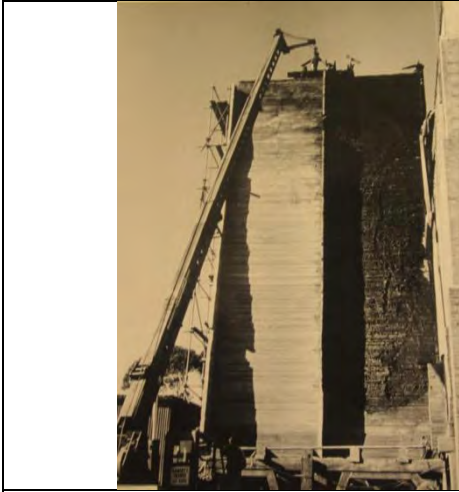


Plate 7 **Fire damage to the transit bins in 1970**



Plate 8 **Silos and grain receiving area circa, 1965-1970**

6.0 Site Inspection

A one day field inspection of the Thornleigh Maltworks was undertaken on Thursday 27 March 2014 by AECOM heritage specialists Luke Kirkwood and Karyn Virgin. The site inspection comprised a site walkover to assess:

- the current status and layout of the Thornleigh Maltworks;
- the level of both historic structural impact and ground disturbance to the site; and
- the potential for historical archaeological deposits to be present.

The overall site structures were found to be still 'intact' with respect to the late 20th century arrangement of items within the Study Area. Certain elements such as machinery and moveable items have been sold or removed since the closure of the site. While the site is generally maintained, some areas of the site show significant vegetative growth notably the ivy covered walls of the germination building and grassed areas surrounding the main malting complex.

The original structures identified on site from aerials (the germination building and Manager's House) were assessed for heritage integrity. The germination building has seen some modification in the late 20th century to accommodate modern refrigeration techniques for the malting process. This included the installation of piping, electrics and machines inside the main structures and the removal of wooden louvered windows and enclosure of windows with bricks. Likewise the Manager's House is ultimately unchanged from its original design.

The field inspection also assessed the immediate surrounding area of the main malting complex and the Manager's House for archaeological remains. It was observed in this area that the ground surface integrity was high with no evidence to indicate that substantial groundwork had taken place in those places. Ground surface visibility ranged from near 100 per cent to low in part due to the presence of grasses and ground litter from trees. All areas of ground surface visibility were inspected. No evidence of archaeological features was identified.





Plate 13 Main silos and rail siding in south western portion of the site

Plate 14 Kilns and storage areas at eastern end of the site



Plate 15 Water Treatment Plant in the north of the site

Plate 16 Manager's House. This item has seen major modification since its original construction with the enclosure of the north west veranda, removal of verandah features such as columns and brickwork, and modification of the garden and removal of the original stairs.

7.0 Significance Assessment

This section provides an assessment of the heritage significance of the Thornleigh Maltworks under the NSW State Heritage Register criteria.

Table 1 Application of the NSW State Heritage Division's Assessment Criteria

NSW State Heritage Criterion	Assessment
Criterion A – Historic Value <i>an item is important in the course, or pattern, of NSW's cultural or natural history</i>	The Thornleigh Maltworks does not fulfil this criterion. While certainly representative of a key component of the brewing network in NSW, the Thornleigh Maltworks was one of many maltings present in NSW at one time or another. The site also post-dates the more important and extensive Mittagong Maltworks ruins. Thus the site is not considered important in the course/pattern of NSW cultural or natural history.
Criterion B – Associated with a NSW identity <i>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</i>	<p>The Thornleigh Maltworks are associated strongly with both the Chilvers family and the Barrett Burston Malting Company.</p> <p>William Chilvers, who oversaw the construction and management of the Thornleigh maltworks, was considered one of the foremost English maltsters of his day. This reputation saw him invited to migrate specifically to Australia from England to assist in setting up and overseeing the setting up of maltworks in Queensland and NSW. His son, Hugh Chilvers, took over as manager following his father's death in 1937 ending a successful career as a leg-spin bowler for NSW. Commentators have remarked that Hugh Chilvers was the greatest leg-spin bowler never to play for Australia taking 151 wickets in first grade cricket.</p> <p>Hugh Chilvers sold the company to Barrett Bros. and Burston and Co. Pty. Ltd in the mid 1960s. The Barrett Burston companies were one of the first to establish commercial malting in Australia in the 1860s. They have since grown to be second largest malt producers in Australia producing 30 per cent of the country's malt production capacity.</p>
Criterion C – Technical Achievement <i>an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW</i>	The Thornleigh Maltworks employed traditional malting techniques (pre-refrigeration temperature control using ivy and timbered louvers, floating floors, coal fired kilns etc) developed in England in the late 19 th and early 20 th centuries. This technology was commonly used by most if not all maltworks in the state. Following refurbishment to the site in the mid 1960s, new modern techniques were adopted. While demonstrating key technical aspects of the malting process, the site is not unique in demonstrating these nor are these processes considered a creative or technical achievement.
Criterion D – Social Value <i>an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons</i>	There are no known strong associations with this structure for social, cultural or spiritual reasons amongst the greater NSW population. No wider community consultation was conducted as part of this assessment.
Criterion E – Contributory Value <i>an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history</i>	The Thornleigh Maltworks does not meet this criterion as the structures do not have the potential to yield information that will contribute to an understanding of NSW's cultural or natural history.

NSW State Heritage Criterion	Assessment
<p>Criterion F – Rarity <i>an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history</i></p>	<p>Intact and original maltworks from the late 19th and early 20th centuries are increasingly rare in NSW. While the Thornleigh Maltworks have been extensively redeveloped over the last 100 years, the principal germination building remains substantially intact with internal modifications to accommodate the mechanisation of the malting process. Unlike the Mittagong Maltworks which have fallen into ruin, this structure remains structurally intact and accessible, clearly showing evidence of its original function. The site is also rare in having an associated Manager's House onsite that has been consistently lived in for close to 100 years representing an industrial-urban cultural connection that is rarely seen continued in late 20th century industries.</p>
<p>Criterion G - Representativeness <i>an item is important in demonstrating the principal characteristics of a class of NSW's</i> <i>- cultural or natural places; or</i> <i>- cultural or natural environments</i></p>	<p>The Thornleigh Maltworks represents, until recently, a working industrial site that has constantly evolved and been redeveloped to adapt to market requirements and improved efficiency in the malting process. The site and its structure are for the most part intact. That said, the most representative structure on site for the Maltworks that demonstrates the principal characteristics of the maltworks in NSW is the original germination building.</p>

The Thornleigh Maltworks are of local significance to the development of the Thornleigh region in particular the local industrial estates which grew up around the site. While the overall site remains of local significance, the germination building meets criterion B, F and G for NSW State Heritage significance, however significant structural modifications to the structure in the late 20th century and extensive site modification have reduced these values. Further detailed structural assessments are required to determine how much of the internal elements of the structure are intact following refurbishment for mechanisation in the mid-1960s and an appreciation be undertaken of how this affects the structure's significance rating.

8.0 Impact Assessment

Direct impacts have been identified to the Thornleigh Maltworks:

- The demolition of several late 20th century structures associated with the malting process.
- The removal of a house linked to the early development of the site.

It is noted that the local listing of the site is for its archaeological value, although limited details are provided on the justification for this listing. Desktop review has identified that at least two structures, the germination building and the Manager's House have been present on the site, with minor modification, since the initial construction of the maltworks.

8.1 Statement of Heritage Impact Questions - Demolition of a Building or structure/s

Have all options for retention and adaptive re-use been explored?

The project requires a suitably sized staff compound to accommodate both the major workforce and shift change of this project. In doing so, the project has evaluated a number of sites, all of which do not meet the specific project requirements of providing a safe parking and staff compound area for the project.

The majority of the site is representative of a late 20th century industrial complex and only bear resemblance to the original layout of the Thornleigh Maltworks through the malting process steps. The demolition of parts of the site, while reflecting a loss in terms of a modern unique 20th century industrial site to the Thornleigh area, also represents an opportunity to focus conservation efforts on the original industrial building for the site, the germination building. While the loss of the Manager's House is unavoidable, the potential impacts on any archaeological relics would also be managed through the preparation of an Archaeological Test Excavation Research Design and Methodology to investigate the potential for archaeological remains linked to the early usage of the site, the connection between the industrial and urban settings and the link to the original occupants of the house, the Chilvers family.

Can all of the significant elements of the heritage item be kept and any new development be located elsewhere on the site?

The significant elements of the heritage item (namely the original germination building) would be kept as part of the redevelopment of the site. The internal structure would be maintained and protected for the lifetime of the project.

Is demolition essential at this time or can it be postponed in case future circumstances make its retention and conservation more feasible?

Demolition of the surrounding structures cannot be postponed as the compound is a critical component of the project in providing a safe working environment for a large component of the workforce for the project.

Has the advice of a heritage consultant been sought? Have the consultant's recommendations been implemented? If not, why not?

AECOM has worked closely with the NorthConnex team in identifying an approach that recognises the heritage significance of the germination building as being the most important heritage item within the Maltworks complex. The AECOM assessment also recognises the archaeological value of the site highlighted in the original LEP listing.

Due to the heritage value of the site, a number of designs have been put forward that investigated options for retention and adaptive re-use of various structures within the Maltworks complex, while still fulfilling the requirements of providing a safe working environment for future project staff. This was done in conjunction with the project's heritage advisors which resulted in a design that retained the main germination building. The advice of the consultant was also to undertake an archaeological investigation to determine the potential for archaeological deposits to be present as identified in the Hornsby Shire Council LEP.

8.2 Statement of Heritage Impact

From the assessment against the Heritage Branch guidelines (NSW Heritage Office 2002) a number of potential impacts have been assessed. These are graded to determine their impact against the significance of the site (see Table 2).

Table 2 Summary of the nature of the direct impacts

Impact Type	Impact
Major negative impacts (substantially affects fabric or values of state significance)	None. The item is not of state significance.
Moderate negative impacts (irreversible loss of fabric or values of local significance; minor impacts on State significance)	The project involves the demolition of the majority of structures onsite including the Manager's House. The demolition of these structures constitutes an irreversible loss of the fabric of this item of local significance. However it is noted that the main original structure of the Thornleigh Maltworks site, the germination building, would be retained allowing for future conservation of this unique building.
Minor negative impacts (reversible loss of local significance fabric or where mitigation retrieves some value of significance; loss of fabric not of significance but which supports or buffers local significance values)	None.
Negligible or no impacts (does not affect heritage values either negatively or positively)	None.
Minor positive impacts (enhances access to, understanding or conservation of fabric or values of local significance)	The retention of the germination building represents a heritage outcome that seeks to retain the original industrial component of this site. While the site itself will be substantially changed, this will allow for focus of the site to be on the germination building establishing conservation controls for the management of the item for future generations.
Major positive impacts (enhances access to, understanding or conservation of fabric or values of state significance)	None.

Overall, the impact to the heritage significance of the Thornleigh Maltworks is deemed to be moderate negative effect. The demolition of structures will forever change the context of the original industrial site in addition to the loss of the Manager's House which is thought to be contemporary to the original layout of the Thornleigh Maltworks. However, it is noted, that apart from the Manager's House, the remaining structures to be demolished date to the late 20th century and have no intrinsic heritage value apart from their connection to the site as a whole. The retention of the germination building is also considered to be a minor positive outcome, which has the potential to be a major positive outcome with appropriate conservation management controls for the future management of the site.

9.0 Key Findings and Summary of Recommendations

9.1 Key Findings

- The Thornleigh Maltworks are of local significance both as an early example of the maltings industry in NSW in addition to being a component of the local history of the area, specifically that relating to the creation of an industrial zone in this area; and
- The germination building and Manager's House reflect part of the original layout of the Maltworks and show a continued almost 100 year industrial/urban relationship linked to Chilvers family and later site managers.
- The Manager's House despite being an original structure has undergone modification since its initial construction.

9.2 Recommendations

Should it be deemed necessary to demolish the structures, the following recommendations are made:

- The germination building is to be conserved as it reflects one of two original structures of the Maltworks;
- A structural assessment of the germination structure would be conducted to ascertain the possible impact of the demolition of adjacent structures to identify suitable mitigation methods to ensure the germination structure remains intact. Additional measures would be identified and implemented, if required, to treat the newly exposed surfaces of the germination structure to protect it from the elements as a result of the demolition of adjacent structures.
- A demolition mitigation strategy would be developed. This strategy would include as a minimum:
 - In all instances, archival recording of the item would be undertaken following a risk assessment relating to entry into the relevant structure;
 - Protocols for archival recording of the site to be undertaken prior to demolition to record the structures and linking each structure to the maltings process;
 - The archival recording would include digital architectural drawings of the external and internal features of each item undertaken by a building surveyor, in addition to documenting any individual elements for all structures within the site;
 - Complete photographic record be made for all extant buildings, including their interiors;
 - An archaeological test excavation program would be undertaken to identify if historic archaeology is present on site. A test excavation methodology would be developed to assess the archaeological potential of identifying evidence of the early malting industry, the relationship of the original industrial site (the germination building) with the urban site (Manager's House), and evidence of the occupation of the Manager's House by the Chilvers family and subsequent site managers with their relationship to their staff. The test excavation methodology would be informed by the *NSW Heritage Manual* and would be undertaken by a suitable qualified historic archaeologist;
 - An archival report would be prepared and would include the findings of the test excavation. This report would also include, as an appendix, a collection of all known reports regarding the site; and
 - A copy of the archival report would be provided to the Sydney Branch of the National Archives of Australia or any other relevant repository.
- A conservation management plan would be developed for the germination building and associated structures not identified for demolition. The conservation management plan would be drafted by a qualified heritage practitioner and would be conducted in consultation with a structural engineer and architect with experience in historic 20th century structures;
- Copies of the archival report documentation would be provided to the following stakeholders: Hornsby Shire Council and the NSW Heritage Division of the Office of Environment and Heritage.

10.0 References Cited

- Anon. 1904a. Malting Business. *Warwick Examiner and Times*: p.3.
- Anon. 1904b. Messrs. WM. Jones and Sone (Malsters), Limited. *The Brisbane Courier*: p.13.
- Anon. 1911a. The New South Wales Malting Company, Ltd. *Evening News*: p.2.
- Anon. 1911b. Thornleigh. The Cumberland Argus and Fruitgrowers Advocate¹.
- Anon. 1912. Thornleigh. The Cumberland Argus and Fruitgrowers Advocate: p.10.
- Anon. 1913a. New South Wales Malting Coy., Limited. *Cowra Free Press*: p.2.
- Anon. 1913b. Thornleigh. The Cumberland Argus and Fruitgrowers Advocate: p.8.
- Anon. 1913c. Telegraphic Summary. *Clarence and Richmond Examiner*: p.9.
- Anon. 1915. Agricultural Education. *The Sydney Morning Herald*: p.6.
- Anon. 1916. No Title. The Cumberland Argus and Fruitgrowers Advocate: p.8.

Anon. 1968. Barrett B'ton new maltings. *The Canberra Times*: p.29.

Anon. 2014a. Hugh Cecil Chilvers. *Ancestry.com*. Available at:
<http://freepages.genealogy.rootsweb.ancestry.com/~chilvers/Hugh.htm> [Accessed March 24, 2014].

Anon. 2014b. William George Chilvers. *Ancestry.com*. Available at:
http://records.ancestry.com/William_George_Chilvers_records.ashx?pid=84523211 [Accessed March 24, 2014].

Barrett Bros. and Burstone Co. Pty. Ltd. 1972. Barrett Bros. and Burstone and Co. Pty. Ltd. maltsters : a short history of the company to mark its golden jubilee, 1912 -1972. Melbourne: Barrett Bros. and Burstone Co. Pty. Ltd.

Higginbotham, E. 1993. *Hornsby Shire Heritage Study: Historical Archaeology Report*. Report for Perumal Murphy Wu Pty Ltd.

Kass, T. 1993. Hornsby Shire Heritage Study. Volume 1: Thematic History. Lidcombe.

NSW Heritage Office. 2001. *Assessing heritage significance*. Parramatta. Available at:
<http://www.heritage.nsw.gov.au/docs/assessingheritagesignificance.pdf>.

NSW Heritage Office. 2002. *Statements of Heritage Impact*. Parramatta: Heritage Office. Available at:
http://www.heritage.nsw.gov.au/03_index.htm#S-U.

Sinclair Knight Merz Pty Ltd. 2004. *F3 to Sydney Orbital Link Study: Main Report*. Report to Roads and Traffic Authority.

Yours faithfully



Luke Kirkwood
Principal Archaeologist
luke.kirkwood@aecom.com

Direct Dial: +61 2 8934 0423
Direct Fax: +61 2 8934 0001



carbon
neutral



australian
made



recycled



CONSUMER

The **RMS** uses
Greenhouse Friendly™
ENVI Carbon Neutral Paper

ENVI paper is an Australian Government
certified Greenhouse Friendly™ Product