



Glover Street, Mosman
Heritage Assessment

September 2003

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1 INTRODUCTION

1.1 Background

City Plan Heritage has been engaged by Mosman Municipal Council to undertake a study of the proposed Glover Street Conservation Area. Following a Council resolution to examine the possibility of listing Glover Street as a Heritage Conservation Area a program of community consultation was undertaken to determine the residents' attitudes towards the listing of the area. The vast majority of residents were in favour of Glover Street becoming a Conservation Area. If this report recommended listing of the study area as a Conservation Area then the brief extended to a preliminary investigation of the surrounding streets to determine whether they should be investigated for inclusion in the Conservation Area.

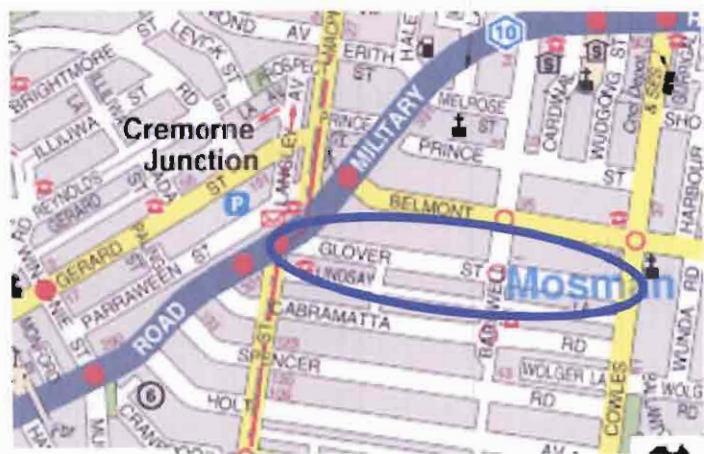
1.2 Boundary

The subject area is located towards the western boundary of the Mosman LGA to the south of Military Road and in close proximity to Cremorne Junction. The eastern end of Glover Street intersects Cowles Road, which runs perpendicular to it, while the western end meets Military Road. Belmont Road and Cabramatta Road run parallel to Glover Street to the north and south respectively. The study area is confined to those dwellings with a frontage to Glover Street.

The study area commences at the north eastern corner of No 1A Glover Street and proceeds due west along the rear boundaries of the properties on the northern side of Glover Street to the north western corner of the amalgamated site of No's 83-89 Glover Street. From this north western corner the boundary moves southward along the western boundaries of the sites and over Glover Street to the south western corner of No 96 Glover Street. From the south eastern corner of the site the boundary proceeds along the rear boundaries of those lots on the southern side of Glover Street to the south eastern corner of No 2 Glover Street. Most of these lots back onto Lindsay Lane although an anomaly occurs where 68A and 68B Glover Street back onto Lindsay Lane but these sites do not front Glover Street and are not part of the study area. From the south eastern corner of No 2 Glover Street the boundary moves north to the southern boundary of 2A and 2B Glover Street. The boundary traces the lot boundary of No's 2A and 2B before it crosses Glover Street to run along the eastern boundary of No 1A Glover Street where it meets the north western corner of the No 1A and the study area.



Boundary of Conservation Area



Location of Conservation Area

1.3 Study Team

This report was prepared by Benjamin Pechey, Heritage Consultant, with assistance from Pam Lofthouse, Heritage Consultant of City Plan Heritage. Additional information and assessment of landscape features was provided by Chris Belleridge of Musecape. The report has been reviewed and endorsed by Stephen Davies, Managing Director, City Plan Heritage.

1.4 Methodology

This project was undertaken using the same methodology applied in the *Mosman Heritage Review*, 1996, by Godden Mackay Logan as recommended by Mosman Council in the Consultant Brief for the project. The study was undertaken in accordance with the *Burra Charter* of ICOMOS Australia and the *NSW Heritage Manual* of the NSW Heritage Council.

1.5 Terminology

No particular terminology has been employed for this report. The terminology used to describe the building styles follows the nomenclature set out in Apperty, R., Irving, R., and Reynolds, P., *A Pictorial Guide to Identifying Australian Architecture* (1989).

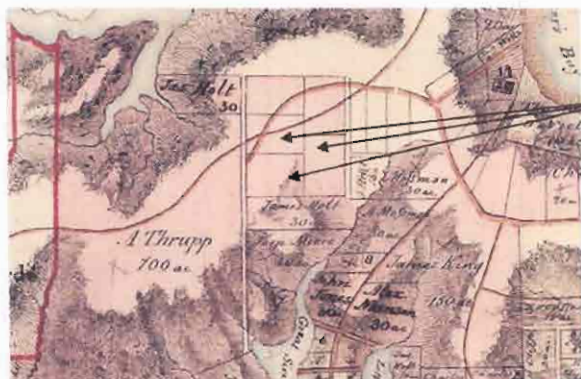
2 HISTORY

2.1 Historical Summary

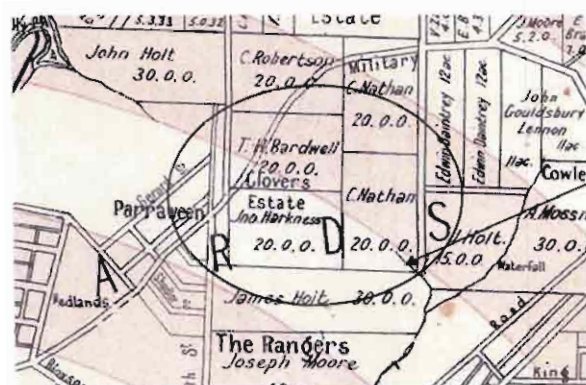
Early activity in the Mosman area was associated with the whaling industry located in Mosman's Bay or the military use of Middle Head and Chowder Bay for the defence of Sydney Harbour. Prior to the 1880's there was very little residential use of the Mosman area as the earliest subdivisions did not occur until the 1880's. These early residential subdivisions were located mostly to the north east of Mosman's Bay in the vicinity of Avenue Road and Military Road.

The area in which Glover Street is located was subdivided and developed after the initial 1880's subdivisions to the south east closer to Mosman's Bay. An early Parish Map, presumed to be prior to the 1880s, shows the original estates and existing subdivision in the area. There are no roads in the area around Glover Street and only the main arterial roads such as Military and Avenue Roads and the original township roads towards Mosman Bay are in existence. Glover Street was not listed in the *Sands Directory* until 1887 and part of Glover Street was for a time known as Seaview Street. The estates which contained Glover Street belonged to Charles Nathan, John Harkness and Thomas Bardwell, which was later owned by James John Glover. These estates were sold as Nathan's Estate, the Centennial Estate and Glover's Estate respectively. It is presumed that Glover Street was named after James John Glover who lived in the house "Ocean View" on the Glover Estate. James John Glover was the Mayor of Mosman in 1904, 1909 and 1910.¹ Subdivision plans show that "Ocean View" was probably located near the junction of Glover Street and Military Road on the present day sites of 102 -108 Glover Street.

¹ D. Jack Carroll, *The Streets of Mosman*, Mosman Historical Society, 1981, p36

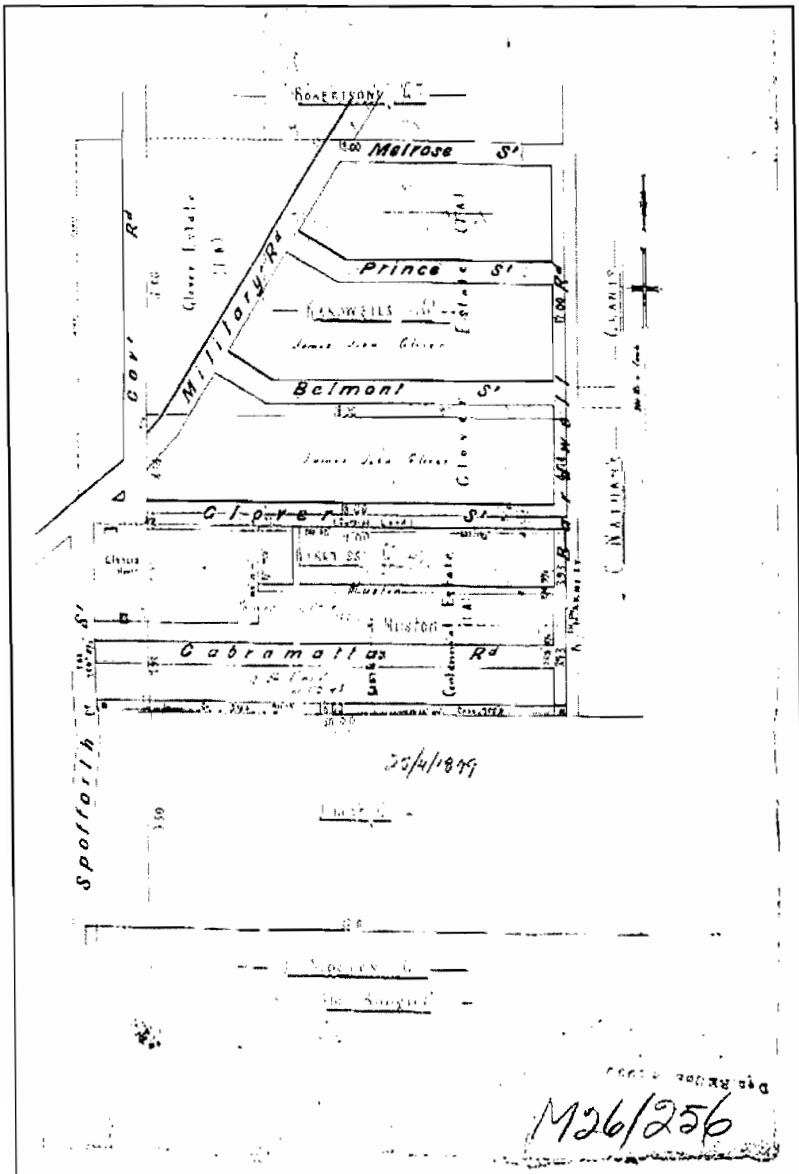


Early Parish Map showing boundaries of land grants and Military Road (Source: LPI)



Later Parish Map showing owners, names and sizes of Estates.
The location of Glover Street is along the boundary of the Bardwell and Harkness grants and runs through Nathan's grant

The original estates were acquired and consolidated by Richard Harnett Snr prior to their subdivision and sale. Harnett was instrumental in the creation of the municipality by instigating its development through the consolidation of various estates, the introduction of infrastructure and sale of subdivided allotments for residential development. The estates were purchased by Richard Harnett and his business partner Alexander Stuart prior to their subdivision and subsequent sale which occurred in the late 1880's through to the first decade of the 20th century. The estates around Glover Street were developed prior to those further to the south such as the Rangers Estate and the Holt Estate.



1899 map showing the names, owners and boundaries of the Estates in the vicinity of Glover Street (source: Mosman Library Local Studies Collection)

The first section of Glover Street to be subdivided was the southern side from Bardwell Road to Military Road. This was entitled the Centennial Estate, and the sale was conducted on the 20 October 1888. It consisted of 79 Lots including those to the south of Glover Street fronting Cabramatta Road. The plan shows John Grovers residence and undivided land located on the corner of Military Road and Glover Street. The area was again auctioned in 1892 as only about half of the lots had been sold and only two new dwellings had been constructed. In 1901 there were still a number of unsold lots but houses had been constructed. These dwellings are probably the two storey boom style dwelling at number 68 and the dwelling that would have formerly stood at the site of the new development at numbers 70A & B.

79 SPLENDID BUILDING SITES

CENTENNIAL ESTATE

NORTH SHORE

For Sale by Auction on the Ground on
SATURDAY 20th OCT. 1888 at 3 p.m. by

RICHARDSON & WRENCH

Auctioneers

Parceley Estate

MILITARY RD.

LOCAL SKETCH

"TORRENTINE"

TERMS

10% Deposit 15% 3 Months
Balance in 1.2 & 3 years at
6% Interest.

BARDWELL RD.

GLOVER ST

SPOFFORTH ST.

Glover

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
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56 FT. WIDE

CABRAMATTA ROAD

4


Jas. Hall

LAYTON & HULLOCK
Licensed Surveyors
115 Pitt St.

M26/144
 S.E. T. CAMP & CO. 1888

1888 Subdivision Map showing the sale of allotments along the southern side of Glover Street (source: Mosman Library Local Studies Collection)

In December 1888 the northern side of Glover Street from Bardwell Road to Cowles Road was subdivided along with other lots in the area bounded by Glover Street, Cowles Road, Prince Street and Bardwell Road. This subdivision was originally part of Charles Nathan's Estate.

MOSMANS BAY
ESTATE NORTH SHORE
For Sale by Auction on the Ground on
Sat^{dy} 15th Dec^r 1888 at 3 pm. by
TORRENSTITLE  **Batt. Rodd & Purves.**
Auctioneers

PRINCE ST
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

BELMONT ST
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

GLOVER ST

BARDWELL RD **COWLES RD**

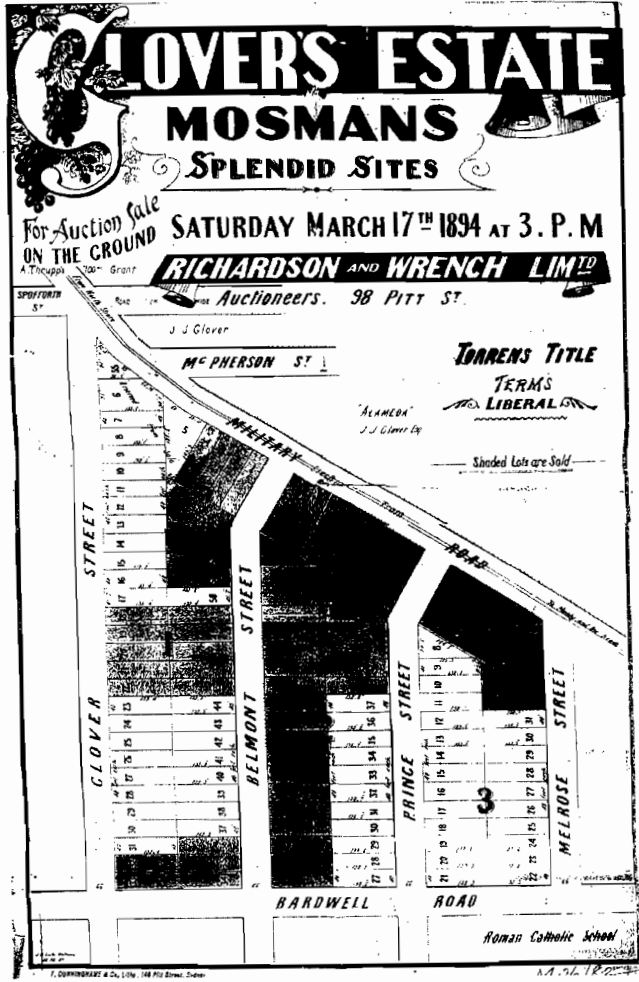
TERMS - EASY

FREE BUSES + DAY W. SALE
From Mosmans Bay Point at 2.45 pm
From Wilsons Point at 2.30 pm
REFRESHMENTS PROVIDED

LIXTON & BULLOCK
Licensed Surveyors
under the Property Act
 130 PITT ST

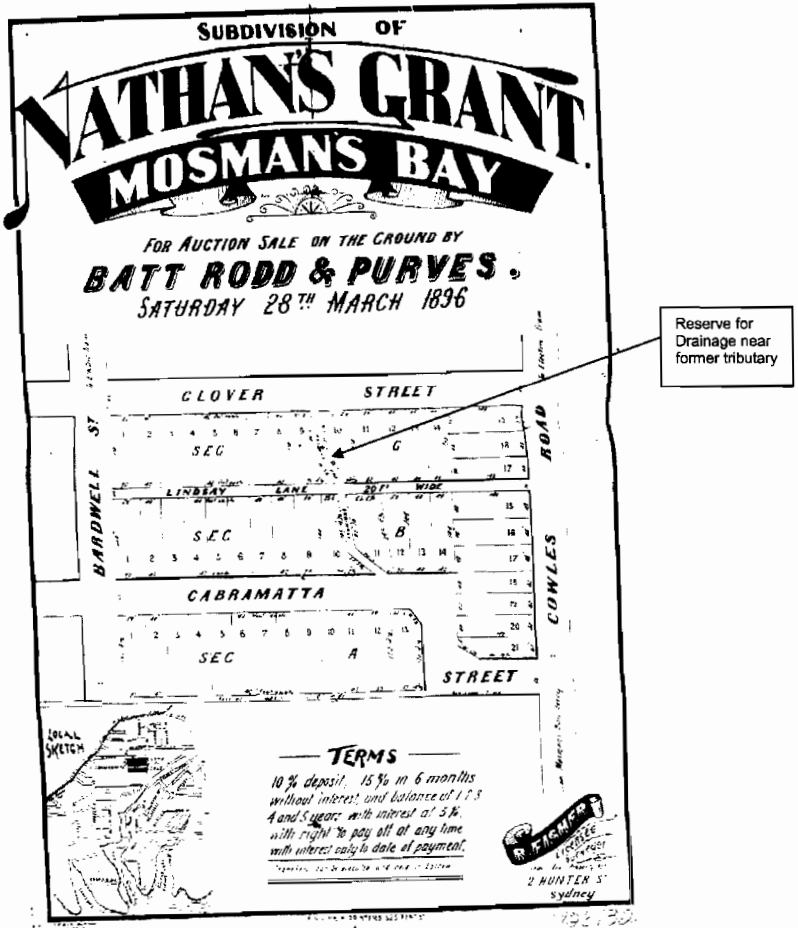
1888 Subdivision Map showing the sale of allotments along northern portion of Glover Street (source: Mosman Library Local Studies Collection)

The sale of the northern side of Glover Street from Military Road to Bardwell Road had occurred by 1894. An auction advertisement for Glovers Estate from that year shows the area from Glover Street to the north as bounded by Bardwell Road, Melrose Street and Military Road was already subdivided with some lots sold. 7 of the 27 lots along Glover Street had been sold at this time as had the majority of lots along Belmont Road to the north. Glovers Estate was again advertised for sale in 1895 and the plan shows more lots sold and a number of dwellings constructed along the northern side of Belmont Road.



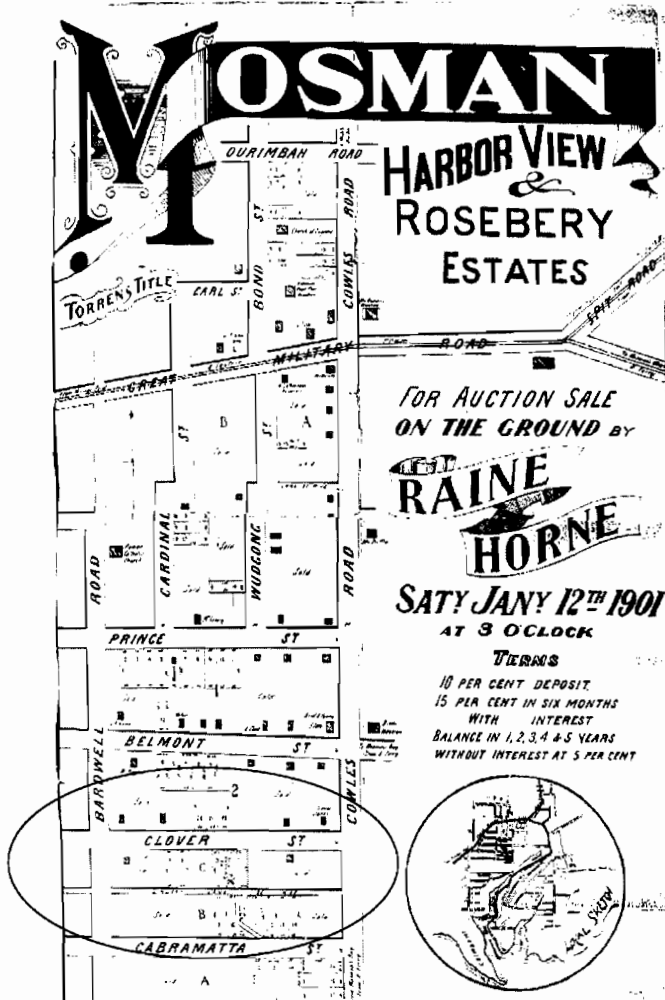
1894 Subdivision Map showing the sale of allotments with some sites indicated as sold (source: Mosman Library Local Studies Collection)

In March 1896 the lots on the southern side of Glover Street were advertised for sale as part of Nathan's Grant, Mosman Bay. This subdivision included lots along Cowles and Cabramatta Roads. It also shows a reserve for drainage running at an angle towards the south east. This drainage reserve follows a former tributary that joined the main creek which flowed down into Mosman Bay. Additionally, the junction of Cabramatta and Cowles Roads is located further to the south of its present location with lots dedicated where the road exists today.



1896 Subdivision Plan (source: Mosman Library Local Studies Collection)

In 1901 the unsold lots on both sides of Glover Street from Bardwell Road to Cowles Road were advertised for auction along with other unsold lots up to and beyond Military Road. Only seven lots were unsold along this section of Glover Street with two dwellings constructed on the southern side which are likely to be numbers 4 and 28 Glover Street and 4 dwellings along the northern side which are possibly numbers 36 Cowles Road and 3, 21 and 33 Glover Street.



1901 Subdivision Plan showing some dwellings in existence along the eastern portion of Glover Street (source: Mosman Library Local Studies Collection)

Unreserved Sale


MOSMANS BAY

(ON ACCOUNT OF THE OWNER RESIDENT IN ENGLAND)

THE UNSOLD LOTS IN THE Centennial Estate North Shore

FOR SALE BY AUCTION ON THE GROUND
by **HARDIE & GORMAN** IN CONJUNCTION WITH
AUCTIONEERS **H.W. HORNING & CO**

— Torrens Title —



LOCAL SKETCH

on **SATURDAY**
9TH MARCH 1901
AT 3 P.M.

Terms
10 per cent deposit
15 per cent in 3 months
Balance in 5 years at
5 per cent interest



Jas Hoff

LOXTON & BULLOCK
LICENSED SURVEYORS
and Real Property and
120 Pitt St.

Another 1901 Subdivision Plan showing the existence of some dwellings along the western portion of Glover Street (source: Mosman Library Local Studies Collection)

Following its subdivision and sale of lots Glover Street was initially slow to develop. Prior to 1890 the only dwelling listed in the *Sands Directory* on Glover Street was John Glovers "Ocean View". By 1895 two other dwellings had been constructed on the south side of Glover Street and are indicated on later subdivision plans. Development of the northern side of Glover Street had begun in 1900 with dwellings also located east of Bardwell Road. The 11 dwellings in Glover Street at this time were probably the larger style dwellings and included those at numbers 4, 21, 28 and 68 Glover Street.

The major period of development in Glover Street occurred between 1900 and 1905. In 1905 the *Sands Directory* listed 53 residents in Glover Street meaning that within five years nearly the whole street had been developed. The northern side of the street and the southern side from Military Road to Bardwell Road were comprehensively developed but the southern side of the street east of Bardwell Road had only two new dwellings constructed. Development continued over the next five years with approximately 20 new dwellings constructed. No further development occurred until the mid 1920s. This next phase of development essentially completed the streetscape and is evident in the Inter War California Bungalows and Semi Detached dwellings in the street. Relatively few alterations have occurred to the housing stock of the street with only a handful of infill buildings constructed after the 1950's. One such example is the infill dwelling at number 14 with the site formerly used for a motor garage.

2.2 Historical Themes

State Historical Themes:

- Land Tenure
- Townships
- Housing

3 THE BUILDINGS AND THEIR SETTINGS

Glover Street is a little over half a kilometre long and runs approximately east west. The streets in the vicinity are part of a regular grid pattern which was laid out in the late 19th century. The streetscape is a cohesive collection of Federation period dwellings that were predominantly constructed during a short period of development between 1900 and 1905. The street demonstrates cohesive patterns of scale, roofscape, typology and siting with a very high proportion of dwellings that contribute to the character of the street and very few intrusive buildings. For a distinct and explicit articulation of the character of the Glover Street study area refer to section **6.0 Summary Statement of Significance**.

3.1 Topography

This grid pattern was also possible due to the topography of the area which is different to the harsh slopes around the bays of Mosman. The area in the vicinity of Glover Street slopes relatively gently in a south easterly direction from Military Road down towards Mosman Bay. The street itself slopes down from Military Road towards Cowles Road with a slight gully located towards the eastern end of the street in front of numbers 2 -12. Early parish maps show a tributary running through this area that joined the larger creek which flowed into Mosman Bay.

3.2 Subdivision

The gentle slope of the topography, as well as the consolidated ownership of the area, allowed for the planned regular grid pattern of the streets. This streetscape and subdivision pattern contrasts with the earlier and more haphazard street alignments in the original township around Mosman Bay. The streets in this area were all subdivided and developed over similar time period. The allotment sizes in the street predominantly feature expanded frontages which are fairly standard to the area and have been retained from the original subdivision. The exception to this is where semi detached dwellings have been constructed on a single size allotment or where a number of allotments were originally consolidated and then re-subdivided into a larger site and a smaller site. Numbers 4, 6, 8 and 10 are an example of this re-subdivision. The western end of the street featuring residential flat buildings also demonstrates examples of consolidated allotments. The only significant alteration to the shape of the allotments is in numbers 10 and 12 which are of an odd shape due to the land that was reserved for drainage in the initial subdivision plan.

3.3 Views

The principle aspects are along Glover Street itself, particularly from the western end as the road slopes down to the east. Due to the regular grid pattern of the area and its topography the study area does not feature the significant views that are common to some other areas of Mosman. Due to the topography of the area limited views south wards to the harbour and its southern shores in the distance are available from the rear of the dwellings on the southern side of the street.

3.4 Building Character

The dwellings in the streetscape demonstrate a degree of cohesiveness in their type, form, period of construction, materials and scale. The dwellings are predominantly from the Federation period and constructed after 1900 with a small number of Inter War period dwellings and a scattering of later infill development. The streetscape is mostly single storey in scale and this pattern has been essentially retained as additions are predominantly sympathetic in size and siting. This cohesive scale breaks down at the western end of the northern side with three and four storey residential flat buildings and town house complexes. Materials characteristic to the streetscape are masonry and timber. Most buildings are single detached dwellings but there are a significant number of semi detached dwellings and a small number of residential flat buildings and townhouses. The majority of contributory buildings are of face brick and timber construction, although a number of such dwellings have been unsympathetically painted. Inter War dwellings feature similar types of materials as well as the use of roughcast render and other elements typical to that period. Significant and contributory buildings feature ornamental details such as gable end decoration, lead light glass, ornamental windows and embellished timber joinery. The inter war housing stock is noticeably less ornate than the Federation period dwellings. Street edge fencing along Glover Street is varied with some significant and intrusive elements. High, visually impenetrable fences are one of the more intrusive elements in the streetscape with medium height timber picket fences the most sympathetic examples of new fencing. Some significant examples of fencing in the streetscape include those with sandstone plinths (of which there are a number of examples), some of which have ornate cast iron panels to a medium height, and a few examples of original low height brick fences with iron railings.

3.5 Styles

The more significant or contributory Federation period dwellings in the street demonstrate characteristics of the Queen Anne style such as face brick construction, complex hipped and gabled roofs, timber gable screens, wide verandahs with timber posts and ornamental brackets and friezes, casement windows with multi-paned top lights and terracotta or slate roofs. Although, it should be noted that the dwellings were principally constructed for

speculative sale during the major period of urban development in the area and are therefore not particularly significant in their own right. The less decorative federation period dwellings tend towards the characteristic of the Federation Bungalow style, which is also adapted for use in the semi detached houses in the street. The Inter War dwellings in the area are mostly in the Californian Bungalow style with large gable ends on a low pitch roof, verandahs with tapered pylons and rough cast render. This form and style is also adapted for semi detached housing types from the Inter War period.

3.6 Orientation

The dwellings in the street are principally orientated to the street and aligned with the street edge boundary. The dwellings are well setback and this pattern is maintained along the whole street. Dwellings are mostly sited at street level although exceptions include the row of dwellings from 59 to 77 which are situated on a stone outcrop above street level and some dwellings along the southern side of the street, east of Bardwell Road are sited at a slightly lower level to that of the street.

3.7 Roofscape

Glover Street has essentially retained its original roofscape of hipped and gabled roofs. The majority of the dwellings feature terracotta tiled roofs and the only significant exception is the slate roof on number 28. Significant and contributory dwellings often demonstrate more complex roof forms common to the Queen Anne style of residential architecture and will also have some form of decoration on their gable ends. Number 28 has the only original front dormer window in the street and is an interesting example of its type. Alterations to roof forms have in general not detrimentally impacted upon the roofscape pattern of the streetscape. Dormers and piggy back additions are the most common forms and, by chance or design, are in most cases either suitably discreet or appropriately sited so as to not impact on the character of the area.

3.8 Landscape Elements

Glover Street features an avenue of large mature trees which partially over hang the street and provide ample shade for the streetscape. The nature strips are grassed and a paved footpath traverses the length of the street. This type of tree planting and public verge is common to the Mosman area. Driveway cross overs are located on the northern side of the street with almost no occurrences of cross overs on the southern side as there is rear lane access from Lindsay Lane. Front gardens and plantings of individual properties have on the whole been altered although there are a few remnant design elements such as gardens beds and pathways.

Mature street trees, mostly Brush Box (*Lophostemon confertus*) make a major contribution to a cohesive streetscape in Glover Street. They partially overhang the street and provide shade and habitat value in the streetscape. The nature strips are grassed and there are concrete-paved footpaths along the length of both sides of the street. This landscape treatment is common in the Mosman area. Driveway crossings are mostly restricted to the northern side of the street, with few on the southern side as there is rear lane access from Lindsay Lane. There is little evidence of original garden layouts or plantings in the street, although some trees and shrubs are species popular during the main periods in which the houses were built. These include Crepe Myrtle (*Lagerstroemia indica*), Indica azaleas and Kentia palms (*Howea* species).

Few of the fences are original. Front boundary fences include a variety of types:

- rendered brick;
- brick piers with timber picket panels;
- welded steel mesh;
- powder coated pool-type fencing;
- original brick piers with pipe rails;
- painted brick;
- steel pipe with wire mesh panels;
- timber pickets;
- original sandstone piers with pipe rails;
- Original wrought and cast iron.

3.9 Intrusive Elements

As is common to most of the Mosman area, Glover Street suffers from the impact of a number of intrusive built elements such as high street edge fences, painting of original face brick facades and intrusive alterations and additions such as the enclosure of front verandahs, the addition of garages and carports and the construction of intrusive dormers to the front and the façade of the dwelling. Crucially, large and intrusive additions which diminish the streetscape are not evident in Glover Street. Fortunately, the intrusive elements have not impacted upon the overall cohesiveness of the streetscape and its patterns of form, scale, typology and materials (see below for examples of intrusive elements).



Intrusive Fence of Welded Steel Mesh



Intrusive high brick front fences



Intrusive powder coated pool-type fencing



The Intrusive treatment of the façade by the painting of the face brick



Original joinery has been replaced with new elements that are intrusive and out of character with the dwelling



Intrusive Alterations - Façade Detailing has removed original character



Intrusive Alterations- Enclosed Veranda



Intrusive Side dormer – siting is appropriate but proportions and materials are intrusive



Intrusive Additions- Dormers with poor proportioning and siting, which impacts upon the original roof form to the street



Intrusive garages that impact on views to the dwellings and place intrusive bulk along the street edge

3.10 Original and Sympathetic Elements

As Glover Street has retained much of its original character there is sufficient original fabric to allow for the interpretation of original forms and character in new elements to sites in the streetscape. Sympathetic carports are those which do not impact on views to the façade, are mostly open and use forms and materials that are sympathetic to those of the dwelling. Original fences are described in the section 3.1.8 Landscape Elements. Examples of new sympathetic fences are those that interpret the original fence forms and are low in height, feature masonry plinths with timbers pickets or pipe rails above. Medium height timber picket fences with appropriate spacing are also sympathetic to the streetscape. Sympathetic additions are those which are principally obscured from the streetscape and allow for the legibility of the original form of the dwelling. Sympathetic façade treatments are those which have restored or retained original detailing and materials (see below for examples of intrusive elements).



Original inter war fence roughcast render base and pipe rails



Original and significant Federation period cast iron panel fence on sandstone base



Original Federation period fence with face brick, pipe rails and iron mesh panels



Original Federation fence of two tone face brick with pipe rails



Sympathetic Federation style timber picket fence and gate for car space



Sympathetic new fence of medium height with suitably spaced timber pickets and masonry base, although face brick is preferable to render on Federation Houses



Sympathetic fence with masonry base, timber picket panels and emphasised masonry plers. Wider spacing of the pickets would increase the sympathetic character of the fence



The most sympathetic solution for onsite car parking is an uncovered space in the front yard behind a sympathetic fence and gate



A carport that interprets the roof form of the dwelling, uses appropriate materials and sited away from the main section of the façade. Should carports occur then they should be of sympathetic for, siting and materials



Sympathetic rear addition that is principally obscured from the public domain and retains the character of the dwelling



Another example of a sympathetic rear addition which is setback from the façade, retains the main section of the dwelling and does not impact on the streetscape

3.11 Site Images



Glover Street looking west from Cowles Road. This eastern section of the street is in a slight gully and features an avenue of mature trees.



Looking east from the junction with Bardwell Road showing the sloping topography down towards the gully and the more heavily treed area pictured in the above image.



Looking west from the junction with Bardwell Road showing the slight inclination of the street as it moves west towards Military Road and the less dense character of the trees



Looking east from Military Road at the western end of the street towards Bardwell Road. This end of the street is at a higher level than the eastern end and street tree pattern is less dense.



Group of Heritage Items at 88 – 94 Glover Street (left to right). Intact Federation period semi detached dwellings. Note the intrusive high front fence to No 90.



Only two storey Federation period dwelling in the street (2 Contributory)



Heritage Item at No 48: Double fronted timber board cottage



Row of typical Federation period detached and semi-detached dwelling along the northern side of Glover Street (1 & 2 Contributory)



A typical example of Federation period semi detached dwellings that have intact façades and principle form but have suffered from the painting of face brick and the introduction of a high front fence. Note the additions to the rear of the dwellings that are sympathetic due to the setback, roof form and materials (2 contributory)



An example of a contributory 2 dwelling that is a good, intact example of a Federation Bungalow but has had its face brick façade unsympathetically painted. Painting of face brick is the most common intrusive element in the subject area. Note the medium height, timber paling sympathetic front fence.



Inter War Californian Bungalow Style Semi Detached Dwelling at No's 15 & 17 (2 contributory)



New townhouse development at north western end of the street adjacent to other residential flat buildings (3 neutral)



Federation Bungalow that has been divided into two dwellings and has suffered from intrusive alterations (3 neutral)



Substantial Federation semi detached dwellings built on top of sandstone outcrop along northern side of street, intrusive dormers detract from contribution to street. (2 contributory)

4 PLANNING ISSUES

Planning objectives to evolve from this Conservation Area Study of Glover Street focus on the retention of the significant character of the study area as described in sections 3.0 and 6.0. Essentially the Federation and Inter War housing stock is to be retained as practically all of these elements contribute to the character of the streetscape. The following actions should guide future planning issues for the area:

- Issues for policies and controls relating to the Conservation Area ranking of individual buildings:
 - 1 ranked contributory buildings must not be demolished and their contribution to the area is to be maintained or enhanced.
 - 2 ranked contributory buildings must not be demolished and their contribution to the area is to be enhanced through the removal or reversal of intrusive elements.
 - 3 ranked neutral buildings may only be demolished if they are to be replaced by something that is to contribute to the significance of the conservation area. In this respect new contemporary dwellings are allowable but must account for the significance and character of the area and ultimately contribute to the Conservation Area. New contemporary dwellings must strive for a number 1 ranking as opposed to a number 3 or 4 ranking so as to enhance the significance of the area by contributing to the quality of the built environment.
 - 4 ranked intrusive buildings may be demolished but must be replaced by a building that will contribute to the character and significance of the conservation area. Again, new contemporary dwellings are allowable but must account for the significance and character of the area and ultimately contribute to the Conservation Area. New contemporary dwellings must strive for a number 1 ranking as opposed to a number 3 or 4 ranking so as to enhance the significance of the area.
- The original subdivision pattern of the area should be retained and further subdivision and amalgamation of allotments is not permissible.
- Proposed works should aim to enhance the contribution of a particular site to the significant character of the conservation area.
- The significance of the Conservation Area could be enhanced considerably by the removal of intrusive change. Where possible, and particularly where works are proposed, intrusive elements of contributory buildings ranked 2 should be removed or their impact mitigated so that that their contribution to the streetscape can be raised to a 1 ranking.
- Proposals for alterations and infill dwellings should be considered on a performance basis with particular regard to the significant patterns of forms, scale and materials in the streetscape by aiming to retain and enhance those patterns and qualities.
- No new intrusive elements should be permitted in the study area including high, visually impenetrable front fences, the painting of face brick façades, the removal of original

detailing, or unsympathetic alterations and additions such as dormers on the front pitch of the roof and the enclosure of verandahs.

- Issues for policies and controls relating to alterations and additions, front fences, parking structures and treatment of façades:
 - **Alterations and Additions:** Contemporary additions to the rear of dwellings are appropriate so long as they are sympathetic in scale and siting, appropriately recessive and do not impact on the character of the streetscape. New contemporary work should be clearly discernable as new work.
 - **Alterations and Additions:** Additions to the front of dwellings are not appropriate. Additions to the side elevations are appropriate so long as they are recessive, secondary in nature to the original form, are setback from the façade and retain the legibility of the dwelling form and character to the streetscape.
 - **Alterations and Additions:** First floor additions, including dormer windows, must not impact upon the contribution of a building to the streetscape, should be restricted to the rear of dwelling, must not impact upon the original roof form when viewed from the public domain, should be recessive and not dominate the original form and character of the dwelling and additional height and bulk should not be visible from the streetscape.
 - **Treatment of Façades:** The treatment of the façades and side elevations visible from the public domain should maintain and restore original elements of contributory buildings including face brick work, original windows, timber joinery, decorative elements and doors. Restoration of façade elements should be based on historical evidence such as photographs or evidence provided by surviving fabric and match the period of construction of the dwelling. Should it be necessary to replace original façade elements due to deterioration then replacement elements should match the existing. The painting of the face brick of contributory buildings is not permissible. Although difficult to achieve it is encouraged that dwellings with painted original face brick façades should be returned to their original state.
 - **Front Fencing:** Property owners should be encouraged to retain original or early fences where they have survived and replace intrusive styles with more sympathetic types, guided by evidence from historical material or an interpretation of traditional fencing forms sympathetic to the style and period of the dwelling. Solid masonry privacy walls, welded steel mesh and pool type fences are to be avoided. While timber picket fences were common in association with houses of some of the architectural styles found in Glover Street, it is desirable to choose picket profiles and spacings that are compatible with those styles. 'Acorn' pattern pickets are readily available from timber suppliers but are often inappropriate for Federation and Interwar house styles. New fences should be low to medium in height, and employ sympathetic materials and styles which are evident in the streetscape.

- **Parking Structures:** Carports and garages along the street frontages are intrusive to the character of the area. Due to their solid form and intrusive visual bulk garage structures should not be permitted in Glover Street. The dwellings on the southern side of Glover Street have access from rear lanes and therefore carports should be located to the rear of the sites. Carports are not encouraged along the street front of dwellings on the northern side of Glover Street as they are intrusive to the streetscape but driveways and parking spaces in front yards are permissible. Carports are to occur on the street front they should minimise visual impact to contributory buildings and the streetscape. They should be located to the side of front elevations and have regard for the materials, detailing, roof pitch and form of the contributory building.
- **Landscape Elements:** Where original garden plantings, beds, paths and edgings survive they should be retained. Many properties display garden styles that reflect more recent landscape fashions including native plantings and large paving blocks with groundcover plantings between. While it is important that owners have plenty of choice in their garden options, it is also important that new landscaping complements the streetscape and the architectural styles of the housing. The street trees and public domain plantings are an integral part of the character of the conservation area and should be maintained.
- Holt Estate Conservation Area is a different subdivision to those which contain Glover Street. Glover Street therefore presents a dissimilar character to that of the Holt Estate and consequently should be listed as a Conservation Area in its own right and not be incorporated into the Holt Estate Conservation Area.
- The areas of Belmont Road, west of Cowles Road, and Cabramatta Road are part of the original subdivision estates. Should the areas be included in the Conservation Area following future detailed assessment they should also be subject to the same planning recommendations.

5 SIGNIFICANCE ASSESSMENT

5.1 Key to Conservation Area Ranking in the Schedule

Ranking	Description
A	A building recommended for individual listing in the schedule.
B	A building which is already a heritage item
1	A building with a high degree of intactness and/or which contributes substantially to the stated character of the area in the terms given in the definition of a Conservation Area.
2	A building which contributes substantially to the character of the area but significance has been reduced by loss of original materials or detail (eg roof, chimneys, fences), unsympathetic additions (eg verandah infill) or inappropriate decorative treatment (eg painting of face brickwork)
3	A building where the impact on the heritage character of the area is neutral
4	A building which has an adverse impact upon the character of the area because of its scale, design, assertiveness, materials or the like, or because its original qualities have been mutilated or removed.
–	A building which is not visible and therefore and which has no substantive effect on the Conservation Area.
	Where a building is under construction the ranking field is left blank. These buildings should be reviewed following completion of construction.

5.2 Schedule of Individual Buildings

5.2.1 Notes

When identifying the architectural styles of the dwellings in the street the vast majority of dwellings did not demonstrate strong characteristics of a particular style but rather their forms, materials, patterns of fenestration etc are typical to the period of construction, which in most cases was the Federation period. Therefore it was difficult to adequately ascribe dwellings with a particular style as only a few demonstrate the particular and definitive characteristics of a style such as Queen Anne. This situation can be attributed to the fact that the area was part of the late 19th and early 20th century phase of urban consolidation in Mosman where the majority of the housing stock was speculatively developed. The ranking of dwellings is to aid in assessment of significance of the area as well as to identify the degree to which individual buildings contribute to the character of the area. The ranking should also assist Council in maintaining and enhancing the contribution of an individual site through the development control process. The comments provided for the individual dwellings list points of interest as well as identifying the particular intrusive elements (if any) for each site so that they may be addressed at a later time.

5.2.2 North Side from Cowles Road to Bardwell Road

Street No.	Predominant Architectural Style	Rank	Comment
1A	1950s red brick dwelling	3	Single storey with basement garage, not in character of street but retains scale and similar roof form, sympathetic materials
1	New semi	3	Two storey dwelling with sympathetic detailing, twin gabled roof, bay windows, render and timber elements
3	Early Federation timber cottage	3	Major alterations, has retained form but has lost original character, painted timber board on side, DA has been submitted
		4	Enclosed verandah, later blue tiled roof, painted face brick façade
5	Federation Queen Anne Bungalow	2	Hipped and gabled complex roof, similar to No 7, brick, bull nose verandah, sympathetic fence Possible 1
		4	Painted
7	Federation Queen Anne	2	Similar to No 5, 70s garage with skillion tiled roof and large face brick wall to street
		4	Garage
9	Federation Cottage	2	Hipped roof, single fronted, more like a dwelling found in inner west, façade intact, garage has loft, intrusive additions
		4	Garage, Painted, additions
11	Federation Queen Anne Cottage	1	Similar to Nos 5 & 7, "Craicilea", Face brick, complex roof, typical 1 ranking
11A (13)	Inter War Bungalow	2	Hipped and gabled roof, original detailing, sympathetic fence Possible 1
		4	Enclosed Verandah, paint

Street No.	Predominant Architectural Style	Rank	Comment
15	Inter War Semi (w/17)	2	California Bungalow style with large single gable, sandstone base, side entrances
		4	Possible 1 Paint
17	Inter War Semi (w/15)	2	As above but more sympathetic paint scheme
		4	Possible 1 Paint
19	Federation Queen Ann Bungalow	1	Rear Additions Sympathetic, barely visible, example of good additions, face brick, sympathetic paint scheme, and intact façade, typical period garden with older style plantings. "Fiona"
21	Federation Bungalow	2	Homestead style, large wrap around verandah on façade and eastern side.
		4	Possible 1 Paint
23	Federation Filigree Cottage (Pair w/25)	2	Intact façade, cast iron filigree on verandah, early Federation, different to most housing types, single fronted. Piggy back additions set well back from the façade
		4	Pink Paint, Additions
25	As Above (Pair w/23)	1	Intact, No additions, medium/high fence which has less impact due to
		4	Paint, med/high fence
27	Inter War Semi (w/29)	2	Californian Bungalow style with large single gable end, rough cast render, original side entrances
		4	Paint, Enclosed verandah
29	Inter War Semi (w/27)	2	As above but verandah and façade are intact
		4	Possible 1 Paint, intrusive fence type

Street No.	Predominant Architectural Style	Rank	Comment
31	Federation Bungalow	2 4	additions to roof and side – sympathetic, intact façade painted
33	Former timber cottage	3	Apparently similar to timber cottage across but has been altered and added to so that original dwelling is no longer evident. Large piggy back addition to rear, façade has been rendered. Federation-style entrance.
35	Federation Queen Ann Cottage	1	Intact, face brick, sympathetic paint scheme, and excellent example of a no 1 rank, timber picket fence with sandstone plinth, early garden beds with new plantings.

5.2.3 North Side from Bardwell Road to Military Road

Street No.	Predominant Architectural Style	Rank	Comment
37	Possibly former Queen Anne style or even Inter War	3	Glover Street elevation does not contribute, addresses Bardwell Road, accretive alterations and additions, although Bardwell Road elevation has better character Possible 4
		4	Painting, Alterations and additions, carport
39	Federation bungalow	2	Retained predominant form and detailing, possible example of sympathetic carport with integrated front fence.
		4	Paint, carport, enclosed verandah
41	Federation Bungalow	1	Possible 2 due to paint but otherwise intact, original fence with top rail pickets
		4	Paint
43	Federation Cottage (Pair w/45)	3	Double fronted, brick, ramp entrance, retained hipped roof form.
		4	Enclosed verandah, additions, paint
45	Federation cottage (Pair w/43)	2	Possible 3, has filigree decoration and shingle skirt added to the verandah.
		4	Paint, cast iron filigree, shingle skirt
47	70s brown brick	3	Modest single storey home retains scale of the streetscape with sympathetic masonry materials
49	Federation Semi (w/51)	1	Face brick, good condition, bay windows, twin gable roof
51	Federation Semi (w/49)	1	As above

Street No.	Predominant Architectural Style	Rank	Comment
53	Federation Bungalow	2	Shingle roof, larger dwelling, hipped roof Possible 1
		4	Paint
55	Federation Semi (w/57)	1	Single gable but steeper Federation style pitch as opposed to the California bungalows in the street, side entrances with tiled side Verandahs, bay windows with timber shingle skirts and face brick.
57	Federation Semi (w/55)	2	As above but painted, façade intact. Possible 1
		4	Paint
59	Federation Bungalow	1	Intact, face brick, original fence with mesh panels
61	Early Federation Sandstone Cottage	1	Single fronted small sandstone cottage on what could have been two blocks, situated high off the street, intact and good condition, sympathetic additions to the side well set back from street.
63	Federation Semi (w/65)	2	Intact facades, Queen Anne style, sandstone fence, bad dormers to front and side but character of the dwelling have been retained, face brick Possible 1
		4	Intrusive Dormers
65	Federation Semi (w/63)	2	As above
67	Federation Bungalow	2	Sandstone retaining wall, face brick bay window has been altered with section of façade clad in fibro and repair work done with cement, original hipped and gabled roof, double fronted.
		4	Fibro adds, paint

Street No.	Predominant Architectural Style	Rank	Comment
69	Federation Bungalow	2	Similar to above but with enclosed verandah and addition of early carport which is below the line of the house
		4	Car port, enclosed verandah
71	Federation Bungalow	2	Face brick, intact detail with enclosed verandah and carport. Carport is below line of dwelling and sympathetically sited
		4	Enclosed verandah
73	Federation Semi (w/75)	2	Hipped roof, intact facades, bull nose Verandahs Possible 1
		4	Paint
75	Federation semi (w/73)	2	As above, fence is not large impact as it is still below house line Possible 1
		4	Paint, High Fence
77	Federation Bungalow	2	Original fence, intact façade Possible 1
		4	Paint
79	1960's red brick flats	4	Four storey, setback from street, typical period detail, not a great example of its type.
81A	New Flats/ Town houses	3	Gable ends, face brick and render, articulated, sympathetic, matches scale of this section of the street.
81	1930s/40s Inter War Walk Up Flats	3	Red/Blue face brick construction, Georgian entrance, good example of it type, formerly a pair with another flat buildings like that was adjacent at 81A.

Street No.	Predominant Architectural Style	Rank	Comment
83-89	Late 20 th Century Garden Town houses	3	Recent face brick town houses, setback from street does not contribute to the area, character of the area breaks down at this end.

5.2.4 South Side from Cowles Road to Bardwell Road

Street No.	Predominant Architectural Style	Rank	Comment
2A & 2B	Late 20 th Century Town houses	3	Large two storey town houses, large solid elements, high walls, hipped roof
2	Federation Cottage	2 4	Queen Anne elements but symmetrical façade, large central bay, rough cast render, blue paint, may have featured a formal garden, original fence Possible 1 Paint
4	Federation Queen Ann Bungalow	1	Large allotment, face brick Queen Anne dwelling with complex hipped and gabled roof and a pair of diagonal projecting bays. Former manse of local Reverend, Significant front fence. Large additions to the rear are obscured from the street.
6	Inter Californian Bungalow	War 2 4	Roughcast render, painted face brick base Possible 1 Paint
8	Federation Bungalow	2 4	Roughcast painted render, intact façade and roof form. Paint, high wall
10	Early Federation Timber Cottage	2 4	Small cottage, painted timber boards, original/early iron roof. Apparently former church care takers cottage. High timber front fence
12	Federation Queen Anne Bungalow	2 4	Large Queen Anne Style arch on front verandah, interesting façade, and side lane once ran along eastern boundary. Large campherlaural and eucalypt in rear yard. Render and Paint
14	Modern Red Brick Dwelling	3	Appropriate scale, materials and roof form. Site formerly featured a motor garage.

Street No.	Predominant Architectural Style	Rank	Comment
16	Federation Semi (w/ no18)	2 4	Façade still intact with elaborate moulded gable decoration. Twin gable roof, additions are well setback from façade and may be considered as sympathetic. High Wall, paint, additions (sympathetic)
18	Federation Semi (w/ no16)	2 4	As above High Wall, paint, additions (sympathetic)
20	Federation Bungalow	2 4	Possible 1, intact façade, form and roof, nice house, sympathetic additions. High fence, painted
22	Federation Bungalow	2 4	Rough cast render, intact façade, form, roof and front fence, painted white and mission brown. Possible 1. Paint
24	Federation Semi (w/ no26)	1	Twin gable ends, sandstone stringcourses, low iron and chicken wire fence, side entrances
26	Federation Semi (w/ no24)	2 4	As above, possible 1 High fence but uses timber palings
28	Federation Bungalow	1 4	Possible 1, interesting original front dormer, intact façade, shingle roof, large block Painted
30	Federation Timber Cottage	1	Large cottage, single fronted, painted timber boards, bull nose verandah, intact façade.

Street No.	Predominant Architectural Style	Rank	Comment
32	Inter War Semi	3	Californian bungalow style with single gable end, intrusive alterations Possible 2
		4	Enclosed verandah, high front fence
32A	Inter War Semi	3	As above Possible 2
		4	Enclosed verandah

5.2.5 South Side from Bardwell Road to Military Road

Street No.	Predominant Architectural Style	Rank	Comment
34	Federation Bungalow	2	Apparently restored, basic form and roof has been retained, some details are lost
		4	High wall, paint, roof material
36	Inter War Californian Bungalow	2	Intact, large timber gable end to street, typical bungalow form
		4	High Wall, paint
38	Federation Bungalow converted to semi w/ no 38A	2	Original form and roof intact
		4	Paint, high fence, intrusive alterations
38A	Federation Bungalow converted to semi w/ no38	2	Later timber gable decoration
		4	Paint, high fence, intrusive alterations
40	Federation Bungalow	2	Intact façade and roof etc, good condition Possible 1
		4	Paint
42	Federation Semi	3	60s/70 intrusive side dormer with timber shingles, sandstone base, arches have been added to the verandah, elaborate gable elements on roof, Possible 2
		4	Alterations to façade, high wall, paint
44	Federation Semi	2	Intact façade, roof and details
		4	Paint
46	Federation Bungalow	1	Works underway, façade looks to be retained, sandstone fence plinth

Street No.	Predominant Architectural Style	Rank	Comment
48	Federation Bungalow	B	Heritage Item, double fronted, timber boards, elaborate gable end with moulded decoration, iron roof
50	New two storey Dwelling	3	Face brick dwelling constructed with Federation style detailing and proportions and sympathetic materials.
52	Federation/Inter War Bungalow converted to a semi w/ no52A	3	Retained verandah and façade, out of character Victorian style iron frieze.
		4	Paint
52A	Federation/Inter War Bungalow converted to a semi w/ no52	3	Contemporary alterations to gable end
		4	Mod alterations, Paint, High wall
54	Federation Bungalow	2	Intact façade, good condition
			Possible 1
		4	Enclosed verandah
56	Federation Queen Anne Semi w/no58	1	Face brick, hipped roof with twin gable ends
		4	Low front fence with high hedge
58	Federation Queen Anne Semi w/no56	1	As above but in need of minor restoration, low fence
60	Detached Federation Cottage in group including 60-64	1	Face brick, gable roof, decorative gable, verandah presently removed, undergoing works
		4	High wall, verandah removed

Street No.	Predominant Architectural Style	Rank	Comment
62	As above	2	As above but sympathetic additions to rear, sandstone plinths to fence
		4	High wall, paint
64	As above	2	Intact form and façade
		4	Paint, high fence
66	Inter War Bungalow converted to a semi w/no66A	3	Predominant roof form and gable end have been retained
		4	Paint, alterations and additions, high wall
66A	Inter War Bungalow converted to a semi w/no66	3	As above
		4	Paint, alts and adds, high wall
68	Federation two storey terrace style dwelling	2	Uncommon period form for the area, new high fence which is mostly timber palings (sympathetic), façade has been painted; form, roof and openings are intact.
		4	Paint, fence
70 A & B	New Town Houses	3	Federation style detailing, face brick, traditional proportions, access to 68 A & B
		4	High walls
72	Federation Bungalow	3	Contemporary style timber gable decoration, retained principal roof and form
		4	High wall, paint, alterations to façade
74	Federation Semi w/76	2	Intact façade, hipped roof with two small gables, low timber fence
		4	Paint

Street No.	Predominant Architectural Style	Rank	Comment
76	Federation Semi w/74	2	Intact façade, hipped roof with two small gables, low timber fence
		4	Paint
78	Federation Semi w/80	2	Similar in form to no's 74 & 76, faced brick façade intact except some 60's details added such as columns and fence.
		4	Minor detail alterations
80	Federation Semi w/78	1	As above but with original detailing, pressed metal decoration in gable end, original fence
82	Federation cottage pair w/84	2	Intact façade and details, hipped roof with gable end, double fronted with large bay window, sympathetic and obscured additions
		4	Paint
84	Federation cottage pair w/82	2	As above, original fence with brick plinth and cast iron railings, no additions
		4	Paint
86	Federation bungalow	2	Original fence with sandstone plinth and cast iron railings, gable roof, double fronted, intact façade and form Possible 1
		4	Paint
88	Federation semi w/no 90	B	Heritage Item, Hipped and gabled roof with three small gable ends to the façade,
90	Federation semi w/no 88	B	Heritage Item, as above "Chelsham"
		4	High wall

Street No.	Predominant Architectural Style	Rank	Comment
92	Federation Semi	B	Heritage item, hipped and gabled roof, intact façade, sympathetic fence, gable decoration has been removed "Asabauer"
94	Federation Semi	B	Heritage Item, As above, gable decoration has been retained. "Alafors"
96	Federation Bungalow	2	Hipped and gabled roof, face brick, original fence and gate, original garden layout but new plantings
		4	Enclosed verandah

5.3 Conservation Area Ranking Map

See Attachment 1 for the Conservation Area Ranking Map.

6 SUMMARY STATEMENT OF SIGNIFICANCE

Glover Street is significant as a relatively intact and representative example of the late 19th and early 20th century phase of development in the Mosman area. This phase of development was the major period of residential growth in the local area as consolidated estates were subdivided and sold to speculative developers. The area is characteristically Federation period residential development demonstrating cohesive patterns of form, scale and materials due to its almost comprehensive development from 1900 to 1905. The significance of the streetscape has been diminished slightly due to the intrusive, yet reversible, introduction of high walls and the painting of original face brick. However, Glover Street has been considerably less affected by these intrusive elements than other areas of a similar character and period in the Mosman area. The conservation area would be strengthened by the inclusion of Belmont Road and Cabramatta Road which were part of the original subdivision and demonstrate similar characteristics to Glover Street.

7 RECOMMENDATIONS

City Plan Heritage has the following recommendations resulting from this heritage assessment of Glover Street:

- It is recommended that the Glover Street study area be listed as a Heritage Conservation Area in the Mosman LEP 1998.
- Further to this, it is recommended that Belmont Road, from Cowles Road to Military Road, and Cabramatta Road be further investigated for potential inclusion in the Conservation Area. Inclusion is dependant upon the ranking of significant elements and determination of the contribution of the streetscapes to the significant character of the Conservation Area. This assessment is to be based on a survey and historical investigation of the area.
- Should these areas be listed in the LEP it is recommended that 'Desired Future Character Objectives' and the necessary planning controls be developed to conserve the significant character of the area.
- Should it be listed the conservation area ought to be named the Centennial, Glover's and Nathan's Estates Conservation Area after the names of the original estates.
- It is recommended that the area is not amalgamated with the Holt Estate Conservation. The area should be independent and defined by the original estate subdivisions.
- This study does not recommend the assessment of any sites within the study area for potential listing as heritage items.

City Plan Heritage
September 2003

8 REFERENCES

Apperty, R., Irving, R., and Reynolds, P., *A Pictorial Guide to Identifying Australian Architecture*, Angus and Robertson, Sydney, 1989

Carroll, D 'Jack', *The Streets of Mosman*, Mosman Historical Society, Mosman, 1981

Godden Mackay Logan Pty Ltd, *Mosman Heritage Review*, Report Prepared for Mosman Municipal Council, December 1996

Heritage Office and Department of Urban Affairs and Planning, *Conservation Areas*, Information Branch, DUAP, Sydney, 1996

Souter, Gavin, *Mosman: A History*, Melbourne University Press, Melbourne, 1995

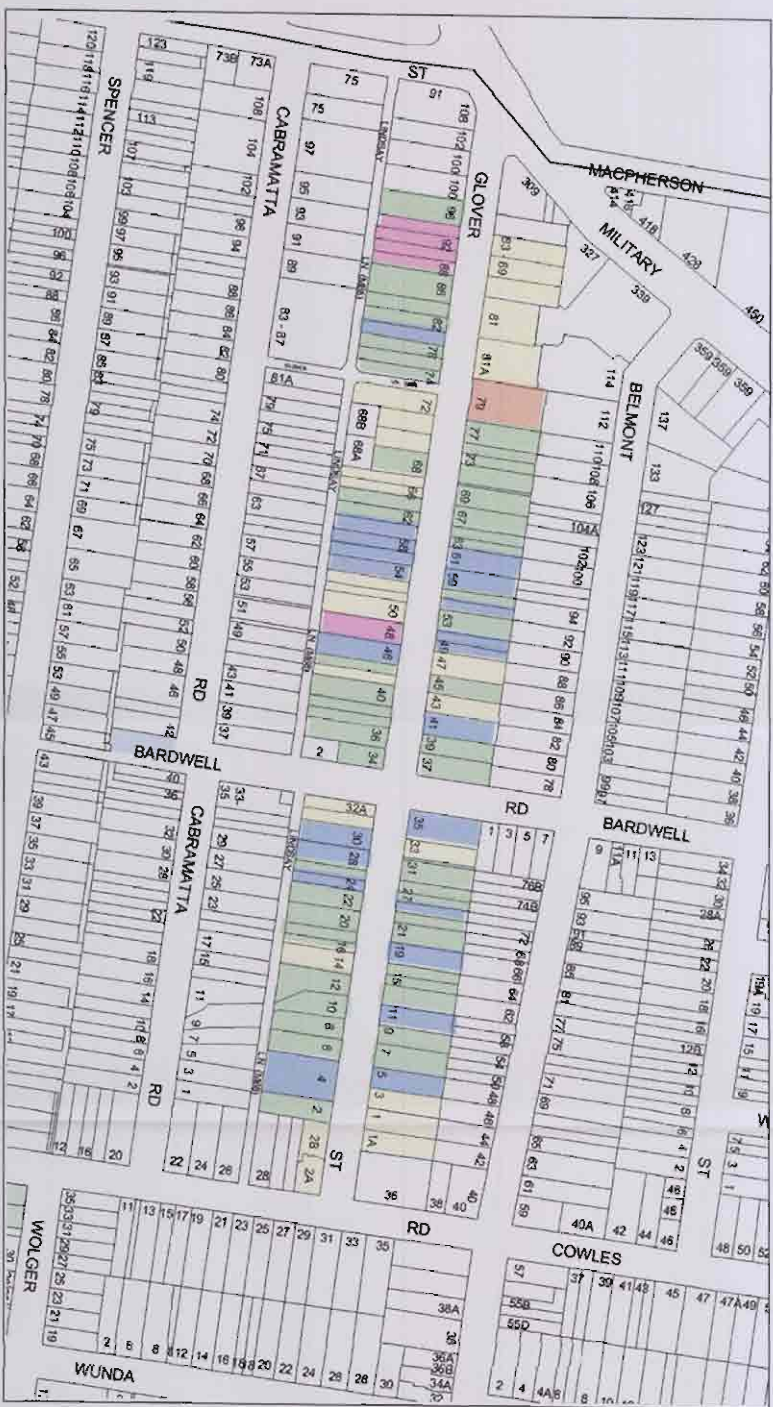
Trans Partners Pty Ltd, *The Mosman Heritage Study*, January 1988

Various Archival Material, Mosman Municipal Library, Local Studies Section

Various Parish Maps, NSW Crown and Land Administrative Maps, Land and Property Information NSW (LPI), Digital Collection

CONSERVATION AREA RANKING MAP

ATTACHMENT



- A. Recommended Heritage Item
- B. Existing Heritage Item

- 1. Intact Contributory Item
- 2. Modified Contributory Item

- 3. Neutral
- 4. Intrusive