

ORIGINAL: Not to be removed from the Department of Land Administration.

APPLICATION H642113

VOLUME 27 FOLIO 171A

WESTERN

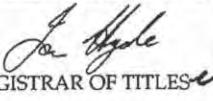
AUSTRALIA


VOLUME FOLIO
2209 119
IN THE REGISTER


CERTIFICATE OF TITLE

UNDER THE " TRANSFER OF LAND ACT, 1893 " AS AMENDED

The person described in the First Schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the Second Schedule.

DATED 11TH JANUARY, 2001

REGISTRAR OF TITLES


ORIGINAL CERTIFICATE OF TITLE

PORTION OF SWAN LOCATION 29 AND BEING LOTS 47, 48 AND 49 ON PLAN 2252 (SHEET 2),
DELINEATED ON THE MAP IN THE THIRD SCHEDULE HERETO.

REGISTERED PROPRIETOR:
FIRST SCHEDULE (continued overleaf)

VIOLET DAVIESS HURD OF 93 COOLGARDIE AVENUE, REDCLIFFE.

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
SECOND SCHEDULE (continued overleaf)

NIL

THIRD SCHEDULE

**NOTE: Entries may be affected by subsequent endorsements.**

Page 1 (of 2 pages)

VOLUME FOLIO
2209 119
IN THE REGISTER

FIRST SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

PARTICULARS	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL & INITIAL
<u>Public Trustee</u> of 565 Hay Street, Perth as Executor of the Will of <u>Violet Daviess Hurd</u> who died on 29.5.2002.	Application	I643395	30.9.03	14.50	
<u>David Jonathon Dalgairns</u> of 93 Coolgardie Avenue, Ascot.	Transfer	I643396	30.9.03	14.50	

SECOND SCHEDULE (continued)	REGISTERED or LODGED	TIME	SEAL & INITIAL	CANCELLATION NATURE	CANCELLATION NUMBER	REGISTERED or LODGED	SEAL & INITIAL

WESTERN

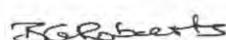


AUSTRALIA

REGISTER NUMBER 1/SP43890	
DUPLICATE EDITION 3	DATE DUPLICATE ISSUED 20/7/2004
VOLUME 2549	FOLIO 462

RECORD OF CERTIFICATE OF TITLE
UNDER THE TRANSFER OF LAND ACT 1893 AND THE
STRATA TITLES ACT 1985

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.




REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 1 ON SURVEY-STRATA PLAN 43890
TOGETHER WITH A SHARE IN ANY COMMON PROPERTY AS SET OUT ON THE SURVEY-STRATA PLAN

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

KRYSTYNE CARTER OF 23B TREVASKIS STREET, KALGOORLIE
(T J474203) REGISTERED 18 OCTOBER 2005

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. INTERESTS NOTIFIED ON THE SURVEY-STRATA PLAN AND ANY AMENDMENTS TO LOTS OR COMMON PROPERTY NOTIFIED THEREON BY VIRTUE OF THE PROVISIONS OF THE STRATA TITLES ACT NO.33 OF 1985 AS AMENDED.
2. *K279901 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA REGISTERED 24.7.2007.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: SP43890.
PREVIOUS TITLE: 2547-997.
PROPERTY STREET ADDRESS: 85 COOLGARDIE AV, ASCOT.
LOCAL GOVERNMENT AREA: CITY OF BELMONT.

NOTE 1: DUPLICATE CERTIFICATE OF TITLE NOT ISSUED AS REQUESTED BY DEALING
J474204

WESTERN

AUSTRALIA

REGISTER NUMBER
2/SP43890DUPLICATE
EDITION
3DATE DUPLICATE ISSUED
7/2/2005VOLUME
2549FOLIO
463

RECORD OF CERTIFICATE OF TITLE
 UNDER THE TRANSFER OF LAND ACT 1893 AND THE
 STRATA TITLES ACT 1985

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 2 ON SURVEY-STRATA PLAN 43890
 TOGETHER WITH A SHARE IN ANY COMMON PROPERTY AS SET OUT ON THE SURVEY-STRATA PLAN

REGISTERED PROPRIETOR:
 (FIRST SCHEDULE)

BRYAN FRANCIS YELDON
 MOIRA SUSANNE YELDON
 BOTH OF 87 COOLGARDIE AVENUE, ASCOT
 AS TENANTS IN COMMON IN EQUAL SHARES

(T J157675) REGISTERED 20 JANUARY 2005

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
 (SECOND SCHEDULE)

1. INTERESTS NOTIFIED ON THE SURVEY-STRATA PLAN AND ANY AMENDMENTS TO LOTS OR COMMON PROPERTY NOTIFIED THEREON BY VIRTUE OF THE PROVISIONS OF THE STRATA TITLES ACT NO.33 OF 1985 AS AMENDED.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
 * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	SP43890.
PREVIOUS TITLE:	2547-997.
PROPERTY STREET ADDRESS:	87 COOLGARDIE AV, ASCOT.
LOCAL GOVERNMENT AREA:	CITY OF BELMONT.

WESTERN

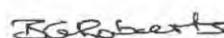


AUSTRALIA

REGISTER NUMBER
3/SP43890DUPLICATE EDITION
3DATE DUPLICATE ISSUED
25/6/2008VOLUME
2549FOLIO
464

RECORD OF CERTIFICATE OF TITLE
 UNDER THE TRANSFER OF LAND ACT 1893 AND THE
 STRATA TITLES ACT 1985

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.




REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 3 ON SURVEY-STRATA PLAN 43890
 TOGETHER WITH A SHARE IN ANY COMMON PROPERTY AS SET OUT ON THE SURVEY-STRATA PLAN

REGISTERED PROPRIETOR:
 (FIRST SCHEDULE)

JAMES MITCHELL JEFFREYS OF 87A COOLGARDIE AVENUE, ASCOT
 (T I722923) REGISTERED 9 DECEMBER 2003

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
 (SECOND SCHEDULE)

1. INTERESTS NOTIFIED ON THE SURVEY-STRATA PLAN AND ANY AMENDMENTS TO LOTS OR COMMON PROPERTY NOTIFIED THEREON BY VIRTUE OF THE PROVISIONS OF THE STRATA TITLES ACT NO.33 OF 1985 AS AMENDED.
2. EASEMENT BENEFIT CREATED UNDER SECTION 5D STRATA TITLES ACT FOR VEHICLE ACCESS PURPOSES - SEE SURVEY STRATA PLAN 43890
3. EASEMENT BENEFIT CREATED UNDER SECTION 5D STRATA TITLES ACT FOR PEDESTRIAN ACCESS PURPOSES - SEE SURVEY STRATA PLAN 43890
4. EASEMENT BURDEN CREATED UNDER SECTION 5D STRATA TITLES ACT FOR VEHICLE ACCESS PURPOSES - SEE SURVEY STRATA PLAN 43890
5. EASEMENT BURDEN CREATED UNDER SECTION 5D STRATA TITLES ACT FOR PEDESTRIAN ACCESS PURPOSES - SEE SURVEY STRATA PLAN 43890
6. K632699 MORTGAGE TO SECURE FUNDING PTY LTD REGISTERED 23.6.2008.
7. *K634237 CAVEAT BY CITY OF BELMONT LODGED 24.6.2008.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.

* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	SP43890.
PREVIOUS TITLE:	2547-997.
PROPERTY STREET ADDRESS:	87A COOLGARDIE AV, ASCOT.
LOCAL GOVERNMENT AREA:	CITY OF BELMONT.

WESTERN

AUSTRALIA

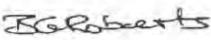


REGISTER NUMBER 1/D86631	
DUPPLICATE EDITION N/A	DATE DUPLICATE ISSUED N/A

VOLUME 2009	FOLIO 935
-----------------------	---------------------

RECORD OF CERTIFICATE OF TITLE UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

**LAND DESCRIPTION:**

LOT 1 ON DIAGRAM 86631

**REGISTERED PROPRIETOR:
(FIRST SCHEDULE)**

WATER CORPORATION OF 629 NEWCASTLE STREET, LEEDERVILLE
(A G163535) REGISTERED 30 APRIL 1996

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)**

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.

* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.

Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----
STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	2009-935 (1/D86631).
PREVIOUS TITLE:	1839-629.
PROPERTY STREET ADDRESS:	LOT 1 COOLGARDIE AV, ASCOT.
LOCAL GOVERNMENT AREA:	CITY OF BELMONT.

Superseded - Copy for Sketch Only

Application F642571
Volume 1839 Folio 629

WESTERN



AUSTRALIA

REGISTER BOOK
VOL. FOL.

CT 2009 935



CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

G. Sack

REGISTRAR OF TITLES



Dated 12th August, 1994

ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Swan Location 29 and being Lot 1 the subject of Diagram 86631, delineated on the map in the Third Schedule hereto.

FIRST SCHEDULE (continued overleaf)

~~The State Planning Commission of 469-489 Wellington Street, Perth~~

SECOND SCHEDULE (continued overleaf)

NIL

THIRD SCHEDULE



PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

E67590/3/89-20M-L/4664

Page 2 (of 2 pages)

Water Authority of Western Australia of 629 Newcastle Street, Leederville.

Application G163555. The registered proprietor is Waiti Corporation of 629 Newcastle Street, Leederville, by virtue of the Water Agencies Restructure (Transitional and Consequential Provisions) Act 1995. Registered 30th April 1996 at 9:34 hours.

Water Authority of Western Australia of 629 Newcastle Street, Leederville.	Transfer	F642572	12.8.94	15.16
Application G16335. The registered proprietor is <u>Water Corporation</u> of 629 Newcastle Street, Leederville. In virtue of the Water Agencies Restructure (Transitional and Consequential Provisions) Act 1995. Registered 30th April 1996 at 9:34 hours.				

SECOND SCHEDULE (continued)

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

CERTIFICATE OF TITLE VOL. FOL. 2009 935

WESTERN

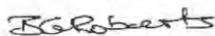
AUSTRALIA

REGISTER NUMBER
602/D92723DUPLICATE
EDITION
N/ADATE DUPLICATE ISSUED
N/AVOLUME
2101FOLIO
490

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.




REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 602 ON DIAGRAM 92723

REGISTERED PROPRIETOR:
 (FIRST SCHEDULE)

WESTERN AUSTRALIAN PLANNING COMMISSION OF 469 WELLINGTON STREET, PERTH
 (A G441162) REGISTERED 7 APRIL 1997

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
 (SECOND SCHEDULE)

1. F341360 EASEMENT TO THE WATER AUTHORITY OF WESTERN AUSTRALIA. SEE SKETCH ON VOL 2101 FOL 490. REGISTERED 20.10.1993.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.

* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
 Lot as described in the land description may be a lot or location.

 END OF CERTIFICATE OF TITLE

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

- SKETCH OF LAND: 2101-490 (602/D92723).
 PREVIOUS TITLE: 2009-936.
 PROPERTY STREET ADDRESS: 55 FAUNTLEROY AV, ASCOT.
 LOCAL GOVERNMENT AREA: CITY OF BELMONT.

Superseded - Copy for Sketch Only

ORIGINAL—NOT TO BE REMOVED FROM DEPARTMENT OF LAND ADMINISTRATION

Application G441162

WESTERN



AUSTRALIA

LT. 37

REGISTER BOOK
VOL FOI

FOI

CT 2101 490



CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

John Fletcher
REGISTRAR OF TITLES



Dated 7th April, 1997

ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Swan Location 29 and being Lot 602 the subject of Diagram 92723, delineated on the map in the Third Schedule hereto.

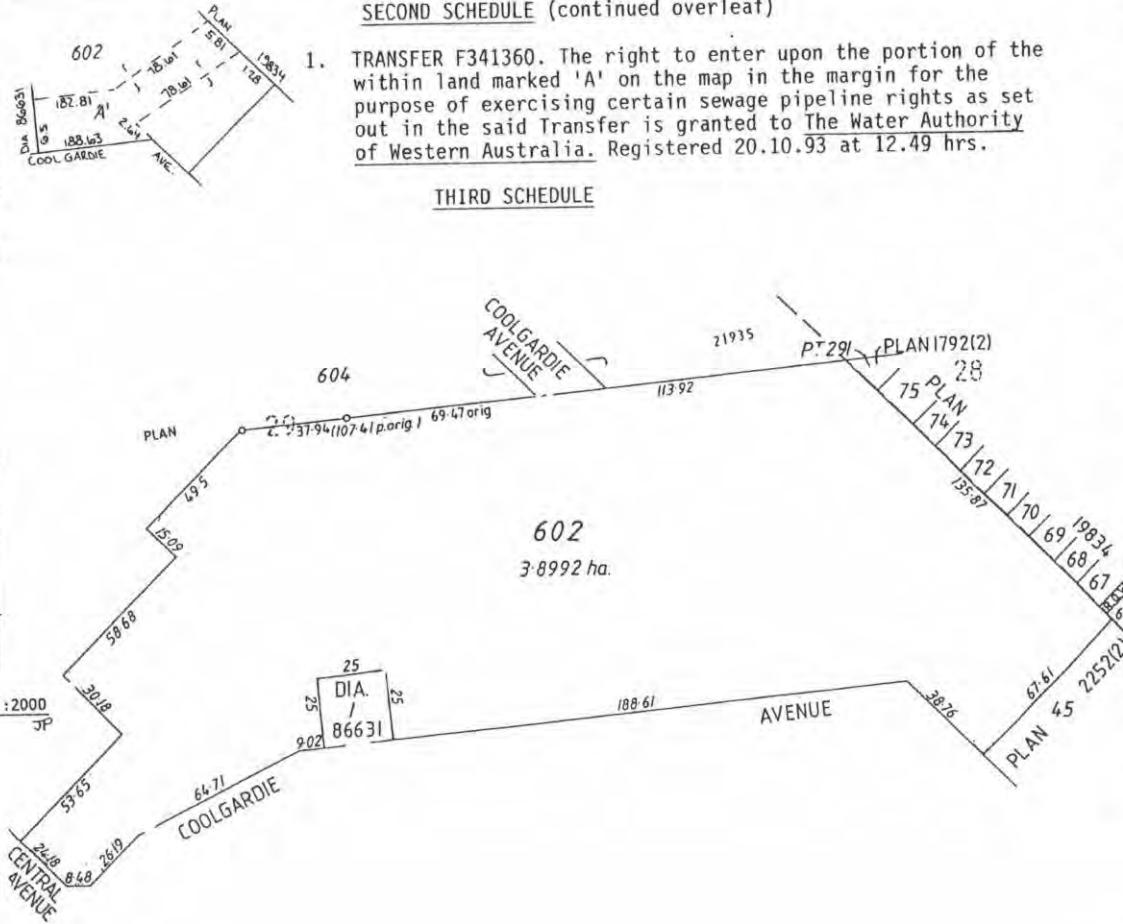
FIRST SCHEDULE (continued overleaf)

Western Australian Planning Commission of 469 Wellington Street, Perth.

SECOND SCHEDULE (continued overleaf)

1. TRANSFER F341360. The right to enter upon the portion of the within land marked 'A' on the map in the margin for the purpose of exercising certain sewage pipeline rights as set out in the said Transfer is granted to The Water Authority of Western Australia. Registered 20.10.93 at 12.49 hrs.

THIRD SCHEDULE



PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

Sheriffed - Copy for Sketch Only

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

L.T. 38

REGISTERED PROPRIETOR

INSTRUMENT
NATURE

NUMBER

REGISTERED

TIME

SEAL

CERT.
OFFICER

SECOND SCHEDULE (continued)

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

PARTICULARS

INSTRUMENT
NATURE

NUMBER

REGISTERED

TIME

SEAL

CERT.
OFFICER

CANCELLATION

NUMBER

REGISTERED
OR LODGED

SEAL

CERT.
OFFICER

CERTIFICATE OF TITLE VOL. 2101 FOL. 490



APPENDIX 2

.....

Geotechnical Information

Wood & Grieve Engineers

ENQUIRIES: GREG MILNE
 PROJECT NO: 15222C

1 April 1997

Wood & Grieve Pty Ltd
 A.C.N. 008 808 786
 16 Altona St, West Perth
 Western Australia 6005
 Facsimile (09) 481 1724
 Telephone (09) 321 9925
 e-mail wge@inet.net.au

Ministry for Planning
 469 Wellington Street
 PERTH WA 6000

Attention: Mr Brett Cross

Dear Sir

**RE: LOT 600-603 GARVEY PARK, REDCLIFFE
 FEASIBILITY STUDY**

We are pleased to present a summary of the engineering and servicing issues for the above landholding.

1.0 PROPERTY ZONING

City of Belmont has indicated that an R20 residential zoning is preferred for the above properties.

City of Belmont also advised that the area in Lot 603 which was initially reserved for Freeway construction is currently planned for retention as parks and recreation usage. This will need to be agreed with City of Belmont.

2.0 FLOOD LEVEL

Water and Rivers Commission has advised that a portion of the land is flood-prone during major river flows and a majority of the properties are inside the designated 100 year flood level area.

The 100 year flood level concerning the properties varies between RL 4.6 to RL 4.8.

A minimum habitable level of at least 0.5m above the 100 year flood level is recommended to ensure adequate flood protection. It is therefore estimated that a minimum building pad level for Lots 600 to 602 is RL 5.1 and RL 5.3 for Lot 603.

3.0 EARTHWORKS

Based on existing ground levels, we estimate 129,000m³ of sand fill in Lots 600 to 602 and approximately 10,000m³ for Lot 603 is required to satisfy the recommended flood protection criteria. At the rate of \$10/m³ for imported fill, this would amount to \$1,390,000.

1

Lots 600 and 601 will require retaining walls on the side adjacent to existing lots of about 1.0 to 1.5m high.

City of Belmont has indicated that the soils surrounding Lot 603 predominantly consists of clayey material. A detailed geotechnical investigation is required to determine the exact depth and properties of this material and thus the overall earthworks required in addition to the above.

We suspect the presence of some uncontrolled fill in Lots 600 to 602 and suggest further geotechnical study to verify the nature of the ground in these areas. The geotechnical study will also need to determine the procedure to rectify the above problem.

4.0

DRAINAGE

All road pavements and reserves will need to be drained with a piped drainage system designed in accordance with Australian Rainfall and Run-off and the City of Belmont criteria.

Lots 600 to 602

Disposal of stormwater run-off from the road pavements and reserves will be achieved by connection to City of Belmont's drainage system.

Disposal of stormwater from the individual lots will be achieved by the construction of soak wells by the lot owners at the time of housing or building construction.

In the case of unsuitability for using soak wells due to ground condition, the stormwater run-off from individual lots will need to be discharged into City of Belmont's drainage system.

City of Belmont has advised that Lot 602 is not included in the City's overall drainage catchment and any upgrades required to accommodate the additional stormwater discharge from this lot will be met by the developer.

Lot 603

Individual lots stormwater disposal will discharge into an open drain at the back of the existing Tibradden Estate. Some cost sharing may be required with the developer of the Tibradden Estate.

5.0

SEWER RETICULATION

Water Corporation of WA advised on the 17 March 1997 that the above properties are included in the overall sewer planning scheme.

Extensions of some 225dia sewer pipes in Coolgardie Avenue, Bulong Avenue and proposed Lilian Grove may be required to serve the above properties.

6.0 WATER SUPPLY

Water Corporation of WA has advised that there are water services located within the locality of the above sites.

Assuming the development is to be of similar density to the nearby Tibradden Estate, Water Corporation has indicated that existing pipes are required to be upgraded to service the properties.

7.0 ROADWORKS

City of Belmont has advised that a suitable access road, preferably from Fauntleroy Avenue, is required for Lot 603.

All other lots have gazetted and constructed road frontage.

8.0 OTHER SERVICES

AlintaGas and Western Power have advised that there are existing services within the locality of the above sites and we anticipate that there will be no difficulties extending these services to the proposed development sites.

Telstra has advised that an upgrade of the existing network will be required since there is no capacity in existing services available for the sites.

We trust the above assessment is satisfactory for your current needs. Should you have any queries or require further information, please contact the undersigned.

Yours faithfully


Greg Milne
for Wood & Grieve ENGINEERS



Wood & Grieve
E N G I N E E R S

ENQUIRIES: GREG MILNE
PROJECT NO: 15222C

Wood & Grieve Pty Ltd
A.C.N. 008 808 786
16 Altona St., West Perth
Western Australia 6005
Facsimile (08) 9481 1724
Telephone (08) 9321 9925
e-mail wge@inet.net.au

23 February 1999

Ministry for Planning
469 Wellington Street
PERTH WA 6000

Attention: Mr Brett Cross

Dear Sir

RE: **LOT 600-602 GARVEY PARK, REDCLIFFE
GEOTECHNICAL INVESTIGATION**

Please find enclosed two (2) copies of the geotechnical report prepared by Golder Associates for the above properties.

The investigation highlighted variable ground conditions dominated by a band of sub-surface peaty soil mixed with clay and silt. This material is considered by the geotechnical consultants to be of riverine origins, probably from a former course of the Swan River as summarised in the report's Executive Summary. The net result is that much of the site is unsuitable for traditional residential or commercial construction. Development of this area, identified as Area 3, would require deep piled footings probably at prohibitive cost.

The exception is about 2.5 hectares of the eastern portion of Lot 602, where the riverine sediments do not occur and the soil is stiff to hard clayey soils, overlain in some areas by sand fill. If these areas, identified as Areas 1 and 2 are filled to a suitable level above the 100 year flood with compacted sand fill, they could achieve a Site Classification of 'S' which would be suitable for modified traditional construction techniques.

It may also be possible to modify some areas of Area 3 in Lot 602 by sand replacement techniques where the depth of peaty soils is restricted to up to 3 metres depth. In this case, possibly up to one additional hectare may be available by removing the peaty soils and replacing with compacted sand fill. This process would be limited by the depth of peat to be removed, ground water levels and overall economics of this option.

It would appear from the investigations that Lot 601 is unsuitable and lot 600 may be marginal for development due to the sub-surface peaty soils. Of particular concern with these lots, is the possible impact of ground improvement works on adjacent properties due to settlement or vibration.

In summary, therefore, it would appear the only portion of the properties suitable for economical development is likely to be the eastern half of Lot 602. This area could be used for residential, commercial or recreational purposes. The balance of Lot 602 and Lots 600 and 601 are unsuitable for economical development based on traditional construction techniques and are likely best used for POS or recreational purposes.

An option to maximise site usage may be to develop Lot 602 as a sporting complex with indoor facilities on the eastern portion and outdoor on the balance.

Whatever the site usage proposed, the site should be subjected to further detailed site assessment as recommended in the geotechnical report to clearly and accurately identify areas of the site suitable for development.

We trust the report and our summary adequately conveys the current site conditions to you and identifies the constraints for development. If further investigation of the suitable portions of the site are required, we would be pleased to assist the Ministry conduct these investigations and feasibility. If there are further queries relating to this report, we would be pleased to discuss them at your convenience.

We will forward accounts for Golder Associates and our services under separate cover.

Please contact the undersigned if you have any queries.

Yours faithfully



Greg Milne
for Wood & Grieve ENGINEERS

attached Geotechnical Reports



**Parsons
Brinckerhoff**

1 Alvan Street
Subiaco WA 6008
PO Box 1232
Subiaco WA 6904
Australia
Telephone +61 8 9489 9700
Facsimile +61 8 9380 4060
Email perth@pb.com.au

Our reference: LT4:16415:fk
Your reference: Lots 600 to 602 Coolgardie Avenue, Redcliffe

ABN 84 797 323 433
NCSI Certified Quality System ISO 9001

5 May 2006

Jim Chesterman
Department of Planning & Infrastructure
Albert Facey House
469 Wellington Street
Perth, WA, 6000

Dear Jim

Lots 600 to 602 Coolgardie Avenue, Redcliffe

Parsons Brinckerhoff has conducted a site walkover and surface inspection of the above site on 4 May 2006. It is understood that DPI want to move material from this site to other locations.

The site was relatively flat with a sandy surface. A number of stockpiles have been placed at the site. A sketch of the site is attached showing the materials observed on site and approximate locations of the stockpiles.

During the site visit the following materials were observed:

1. SAND, fine to coarse grained, brown/yellow.
2. SAND, fine to coarse grained, light grey/brown, large shell fragments throughout.
3. SAND, fine to medium grained, grey/brown.
4. Gravelly SAND, fine to medium grained, brown. Gravel is fine to coarse sized. Broken bitumen pieces throughout.
5. TOPSOIL, SAND, fine to medium grained, dark brown with organic fines (estimated to be greater than 2% by mass) and Clayey SAND lumps throughout.
6. SAND, fine to medium grained, light grey.

Materials 1, 2, 3, 4 and 6 are judged to be suitable for use as engineered fill. Material 5 is judged not to be suitable for fill construction as it contains organic fines (estimated to be greater than 2% by mass) and some clays.

PB recommend that material from the west side of Lot 602 is removed first as this area is underlain by approximately 10m of Swan River Alluvium and is likely to be uneconomic for future development.

Lot 600, Lot 601 and the east side of Lot 602 are all potentially developable and the material on these lots is likely to be an asset if surcharge preloading prior to construction is undertaken.



.../2

PB are continuing with the assessment of possible site soil improvement treatments. At this stage we plan to provide feasibility cost estimates for stone columns and surcharge preloading solutions. We aim to provide the results of these studies next week.

Please do not hesitate to contact me should you require further clarification on any of these points.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Adam Wilmot'.

Adam Wilmot
Senior Geotechnical Engineer
Parsons Brinckerhoff Australia

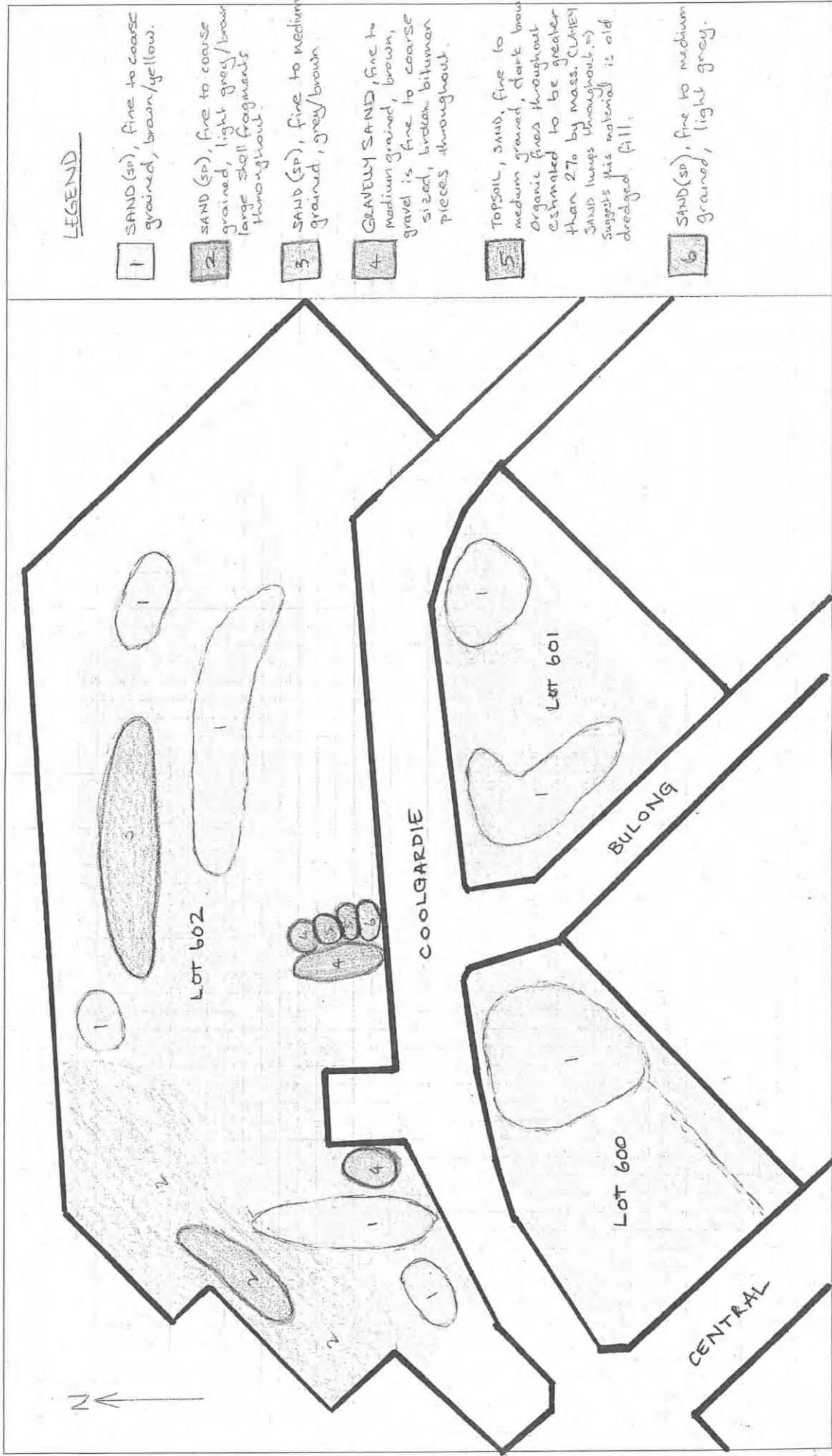
Attachments:

Sketch showing materials observed and approximate stockpile locations

Calculation Sheet

294

Job LOTS 600 TO 602 Design FK Office Perth
 COOLGARDIE AVE Date 4/5/2006
 REDCLIFFE Checked _____
 Date _____





**Parsons
Brinckerhoff**

1 Alvan Street
Subiaco WA 6008
PO Box 1232
Subiaco WA 6904
Australia
Telephone +61 8 9489 9700
Facsimile +61 8 9380 4060
Email perth@pb.com.au

Our reference: LT4:16452:fk
Your reference: Lots 600 to 602 Coolgardie Avenue, Redcliffe

ABN 84 797 323 433
NCSI Certified Quality System ISO 9001

15 May 2006

Jim Chesterman
Department of Planning & Infrastructure
Albert Facey House
469 Wellington Street
Perth, WA, 6000

Dear Jim

Lots 600 to 602 Coolgardie Avenue, Redcliffe

Parsons Brinckerhoff were commissioned by DPI to assess possible site soil improvement treatments including stone columns and surcharge preloading solutions to enable feasibility cost estimates prior to residential development of the above site. It is understood that DPI plan to develop part of the site and excise part of the site to Garvey Park.

Previous Investigations

A previous preliminary geotechnical investigation was conducted by Golder and Associates in February 1999 and the associated report (Ref: 98640048) has been the key document used by PB for information when assessing possible ground improvement treatments. Where information was not available, material parameters for Swan River Alluvium have been assumed based on locally published geotechnical papers.

Subsurface Conditions

The subsurface conditions vary across Lots 600, 602 and 603. The site is immediately underlain by dredge placed sand fill which is up to 4m thick in some areas. Underlying the sand fill across parts of the site is Swan River Alluvium which varies in thickness from 2m to 10m. The Swan River Alluvium consists of interbedded clayey silts, silty clays and occasional peaty lenses generally in a soft to firm condition. The Swan River Alluvium is underlain by Guildford Formation which consists of various sequences of interbedded clays and sands which are in a stiff to very stiff condition. Where Swan River Alluvium is not present, the uncontrolled sand fill is immediately underlain by Guildford Formation. Figure 1 illustrates the varying subsurface profiles across the site. The varying subsurface profiles are hereon referred to as Profiles 1 – 5.

The Swan River Alluvium is likely to be subject to significant consolidation through the application of a load (house construction) and would need to be treated (densified) prior to any construction. Two options to achieve this are discussed below.



Stone Columns (Vibrocompaction) Option

Vibrocompaction is a technique where a vibrating tool jetted and vibrated into the ground densifies the soils through which the tool passes. A stone column is created by backfilling the hole created by the tool with stone cobbles. This densifies the natural soils.

A target modulus of 50MPa is required of the treated soil to meet a site classification of S in accordance with AS2870, Residential Slabs and Footings.

Cocks and Hillman (1998) provide an approximation of the treated soil modulus based on the modulus of the existing soil, the modulus of the stone column and the spacing between the columns. Using this methodology with an approximated modulus of the existing untreated soil of 5MPa, a modulus of the stone columns of 150MPa and 1.2m diameter columns in an equilateral triangle pattern, the stone columns are required to have 2.0m centre to centre separation (i.e 0.8m apart). A copy of PB's calculations including parameters used can be provided upon request. Table 1 summarises the number of stone columns required and the associated cost for differing thicknesses of Swan River Alluvium (profiles 2 – 5).

Table 1: Stone Column Costs

	Approx Total Area (m ²)	Number of Stone Columns Required	Cost (based on \$75 per linear metre)
Profile 2 (SRA 2m thick)	17800	8902	\$1,34,000
Profile 3 (SRA 4m thick)	5400	2702	\$811,000
Profile 4 (SRA 8m thick)	12600	6302	\$3,780,000
Profile 5 (SRA 10m thick)	6400	3202	\$2,402,000

Surcharge Preloading Option

Alternatively the whole site could be surcharge preloaded to ensure that any settlement likely to occur within the existing site soils happens prior to development. Surcharge preloading consists of stockpiling a large amount of soil on a site to induce settlement/consolidation prior to development. The load should be greater than that anticipated to ever be applied to the site post subdivision development. The stockpile is left on site while any settlement that occurs is monitored. When consolidation has sufficiently occurred, the stockpile can be moved to another part of the site.

Primary and secondary settlement has been estimated under a 2 story house load (approximately 40KPa). Table 2 summarises the estimated primary and secondary consolidation for the varying thicknesses of Swan River Alluvium (soil profiles 2 – 5) under a load of 40KPa.

**Table 2: Estimated Consolidation**

	Primary Consolidation (mm)	Secondary Consolidation (mm)	Total Consolidation (mm)
Profile 2 (SRA 2m thick)	140	50	190
Profile 3 (SRA 4m thick)	280	90	370
Profile 4 (SRA 8m thick)	560	180	740
Profile 5 (SRA 10m thick)	700	230	930

To ensure that the residential structures do not undergo significant secondary consolidation, the surcharge load is increased to induce total design settlement prior to construction. Therefore, the surcharge load would require 190mm, 370mm, 740mm and 930mm for soil profiles 2, 3, 4 and 5 respectively, of settlement to occur under primary consolidation. This would require a minimum surcharge load of 60KPa. Further increasing the load to 100KPa would decrease the amount of time for this target design settlement to occur. A 100KPa surcharge load would be 6.7m high and the time for consolidation to occur would vary depending on the soil profile. A copy of PB's calculations including parameters used can be provided upon request. Table 3 shows the length of time required for consolidation to occur over the varying soil profiles using a coefficient of consolidation of 5m²/year and the amount of material required (surcharge load) for the area of each soil profile. The estimated cost is based on \$22 per cubic metre of imported material.

Table 3: Time of consolidation and cost of required material

	Consolidation Time (months)	Amount of material required (m ³)	Cost (\$)
Profile 2 (SRA 2m thick)	1 month	120,000	\$2,640,000
Profile 3 (SRA 4m thick)	4 months	36,000	\$792,000
Profile 4 (SRA 8m thick)	15 months	84,000	\$1,848,000
Profile 5 (SRA 10m thick)	24 months	43,000	\$946,000

Of the two methods investigated, the stone column treatment is generally cheaper than large scale surcharge preloading. However, any residences that may be constructed following treatment of the site should be given a site classification of "M" to allow for any variation in the underlying soil profiles.

There may be opportunities to re-use some of the stockpile material already at the site, and surcharge preload portions of the site at a time, rather than try to treat the whole site at once. These measures would significantly reduce the cost of the surcharge preloading option.

The stone column cost may have been slightly under estimated as there is no allowance for removing the existing fill to allow access for the vibrofloatation tool.

In summary, a soil treatment cost of between \$2,000,000 and \$3,000,000 would be expected if all of the site underlain by soil profile 2 were to be developed. An additional \$1,000,000 to \$2,000,000 may be required to treat all of Lots 602 and 603 for development.



.../4

Please do not hesitate to contact me should you require further clarification on any of these points. Please find attached our invoice for the works carried out to date, including the assessment of the suitability of the existing site fill materials provided in our letter of LT4:16415.fk May 2006.

Yours sincerely

A handwritten signature in black ink, appearing to read "Adam Wilmot".

Adam Wilmot
Senior Geotechnical Engineer
Parsons Brinckerhoff Australia

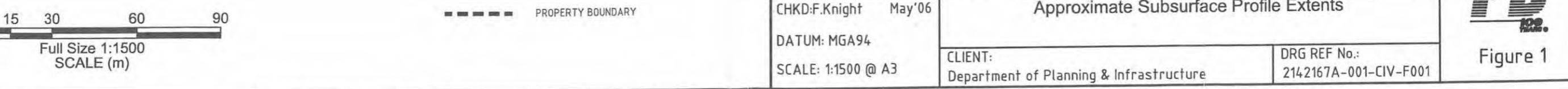
Attachments: Figure 1; Subsurface Profiles

LEGEND - MODELLED SUBSURFACE PROFILES



0 15 30 60 90
Full Size 1:1500
SCALE (m)

PROPERTY BOUNDARY



DRN: A.Thompson May'06
CHKD:F.Knight May'06
DATUM: MGA94
SCALE: 1:1500 @ A3

Lots 600 to 602 Coolgardie Ave, Redcliffe
Approximate Subsurface Profile Extents

CLIENT:
Department of Planning & Infrastructure

DRG REF No.:
2142167A-001-CIV-F001



Figure 1



APPENDIX 3

.....

City of Belmont Tree Survey

Development Area 7 – Ascot

The flooded gum (*Eucalyptus rudis*) trees in DA areas 7, 8 & 9 are part of the Southern River vegetation complex. 17% of the original extent of this complex still remains in the Perth Metropolitan Region (Bush Forever, 2000).

Ecologically, flooded gum is one of the most important trees in the metropolitan region. The foliage and bark support a variety of insects, which in turn are eaten by predatory insects and birds. With an extended flowering season, flooded gum is an important source of food for nectar-feeding insects and birds.

Mature flooded gums develop hollows that are used as nesting sites for native wildlife such as bats, possums and birds. Trees in the south-west of WA rarely form hollows until they are over 120- 150 years old. Retention of mature trees of this age is therefore important. Hollows at the base of flooded gums are used as nesting sites for waterbirds, particularly ducks. The horizontal forking branches are ideal for birds that build nests out of sticks such as darters and white-faced herons. The dead branches are used for nesting and roosting by birds such as cormorants, egrets and herons.

Casuarina obesa (swamp sheoak) is a small tree growing to 14 metres in height, and has a dominant stem for much of its height when growing in closed stands on favourable sites and has a life span of more than 60 years. Generally, swamp sheoak trees have an erect trunk with erect, but sometimes spreading, branches. The bark is thick, fissured and darkish grey in colour.

In the south-west of Western Australia, swamp sheoak is an essential riparian species, tolerant of saline and waterlogged areas and is used to achieve land and nature conservation outcomes. The species is useful as a soil stabiliser, as a windbreak and can provide habitat for fauna.

InfoTree - City of Belmont Tree Information System - [PROPERTY]

File View GPS Tools Help

Information

Pan

Zoom In

Zoom Out

Create/Edit

Full Map

Zoom Sel

GPS

A

553 m x 546 m

Co-ordinates E = 400048.873 N = 6467362.106

Scale 1cm: 26m

Address

Search for Tree:

Search



ID #	DATE	CROWN COND.	AGE RANGE	SPECIES	COMMENTS
225	9/04/2009	Average	Mature	Eucalyptus rudis (flooded gum)	significant tree
226	9/04/2009	Good	Semi-mature	Eucalyptus rudis (flooded gum)	significant clump of ~9 trees
227	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	significant clump of ~7 trees
228	9/04/2009	Average	Mature	Casuarina obesa (swamp sheoak)	significant tree
229	9/04/2009		Mature	Eucalyptus rudis (flooded gum)	significant tree
230	9/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	significant clump of ~8 trees
231	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	significant tree
232	9/04/2009	Average	Mature	Eucalyptus rudis (flooded gum)	significant tree with habitat hollows
233	9/04/2009	Average	Mature	Eucalyptus rudis (flooded gum)	significant tree with habitat hollows
234	9/04/2009	Good	Semi-mature	Eucalyptus rudis (flooded gum)	significant tree with a potential to develop into a large specimen
235	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	significant clump of ~3 trees
236	9/04/2009	Fair	Semi-mature	Eucalyptus rudis (flooded gum)	significant tree with a potential to develop into a large specimen
237	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	significant tree with a potential to develop into a large specimen
238	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	clump of ~3 significant trees
239	9/04/2009	Good	Mature	Eucalyptus rudis (flooded gum)	significant tree
240	9/04/2009	Average	Semi-mature	Eucalyptus rudis (flooded gum)	significant tree
241	9/04/2009	Good	Mature	Eucalyptus rudis (flooded gum)	signiificant tree
246	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
247	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
248	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
249	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
250	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
251	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
252	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
253	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
254	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
255	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
256	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
257	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
258	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
260	15/04/2009		Mature	Casuarina obesa (swamp sheoak)	
262	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
264	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
265	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
266	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
267	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
268	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
269	15/04/2009		Semi-mature	Casuarina obesa (swamp sheoak)	
270	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	
271	15/04/2009		Semi-mature	Eucalyptus rudis (flooded gum)	E. rудis x 2
272	15/04/2009		Mature	Pinus halepensis	P. halepensis x 3
273	15/04/2009		Mature	Pinus halepensis	P. halepensis
274	15/04/2009			Casuarina obesa (swamp sheoak)	
275	15/04/2009		Semi-mature	Casuarina obesa (swamp sheoak)	
276	15/04/2009		Mature	Eucalyptus rudis (flooded gum)	
277	15/04/2009		Mature	Casuarina obesa (swamp sheoak)	numerous specimens



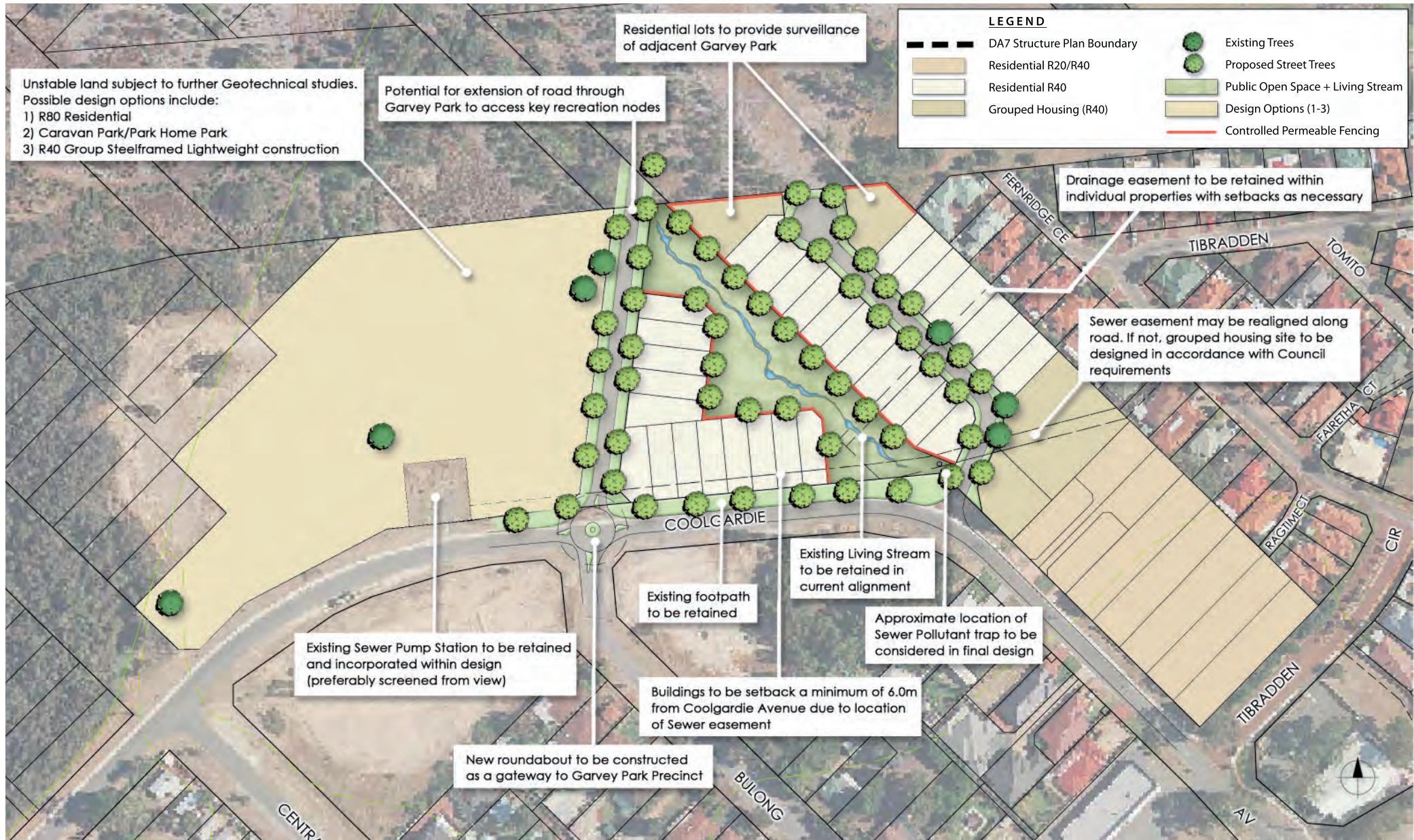
APPENDIX 4

.....

Development Area 7 Structure Plan Options 1 and 2 as Advertised



DEVELOPMENT AREA 7 STRUCTURE PLAN - OPTION 1



DEVELOPMENT AREA 7 STRUCTURE PLAN - OPTION 2