

<b>JRPP No</b>	<b>2010 SYW030</b>
<b>DA Number</b>	<b>DA 1291/2010</b>
<b>Local Government Area</b>	<b>Liverpool</b>
<b>Proposed Development</b>	<p><b><u>STAGED DEVELOPMENT OF A CREMATORIUM COMPRISING THE FOLLOWING:</u></b></p> <p><b><u>STAGE 1</u></b></p> <p><b>CONSTRUCTION OF CREMATORIUM AND TWO (2) ASSOCIATED CEREMONIAL HALLS, INFORMATION CENTRE, MEMORIAL GARDENS (CEMETERY) INCORPORATING CONTAINMENT OF 10,000 ASHES IN RECEPTACLES, CAR PARKING AND ACCESS ROADS, ASSOCIATED LANDSCAPING, FENCING AND SIGNAGE.</b></p> <p><b><u>STAGE 2</u></b></p> <p><b>CONSTRUCTION OF TEMPLE, (PLACE OF PUBLIC WORSHIP) INCLUDING FACILITIES FOR MEDITATION AND DINING, ANCILLARY DORMITORY ACCOMMODATION, EXTENSION OF PRIVATE ACCESS ROAD AND CAR PARKING, ASSOCIATED LANDSCAPING, FENCING.</b></p> <p><b>NOTE: PROPOSAL IS NOMINATED INTEGRATED DEVELOPMENT UNDER THE WATER MANAGEMENT ACT 2000-(DEPARTMENT OF ENVIRONMENT CLIMATE CHANGE &amp; WATER) &amp; INTEGRATED DEVELOPMENT UNDER RURAL FIRES ACT 1997- (NSW RURAL FIRE SERVICE)</b></p>
<b>Street Address</b>	<b>992 (LOT 1 DP 520904) GREENDALE ROAD, GREENDALE</b>
<b>Applicant/Owner</b>	<b>Dr NIRMAL TALUJA</b>
<b>Number of Submissions</b>	<b>146</b>
<b>Recommendation</b>	<b>Approval with Conditions</b>
<b>Report by</b>	<b>JOHN MCKEE-CONSULTANT TOWN PLANNER</b>

## Assessment Report and Recommendation

### EXECUTIVE SUMMARY

Council is in receipt of a Development Application that proposes construction of a crematorium comprising the following:

#### Stage 1

- Crematorium, comprising two cremators
- Four (4) to six (6) ceremonies forecast to occur per day
- Two (2) ceremony halls with a seating capacity of 140 people each
- The combined floor area of the crematorium and ceremony halls is 2100m<sup>2</sup>, including entry hall
- Information centre with a floor area of 100m<sup>2</sup> located at the northern frontage of the site adjacent to the main entrance
- Entrance wall and metal fencing with a height of 1.23m
- Internal road with 9m width and line marked car parking for a total of 126 vehicles and informal parking for up to 216 vehicles along the sides of the access road
- Provision of fountain in centre of entry roundabout
- Memorial garden with capacity for containment of 10,000 ashes in receptacles
- Landscaping
- Vegetation clearing
- Rehabilitation of Grey Box Cumberland Plain Woodland
- Establishment of Asset Protection zones and emergency bushfire trails

#### Stage 2

- Temple/meditation centre with a floor area of 400m<sup>2</sup>
- Three (3) dormitories with sleeping capacity for 12 persons each with facilities for dining with floor area of 500m<sup>2</sup>. The maximum length of stay is 2-5 days.
- The combined floor area of the temple/meditation hall and dormitories is 900m<sup>2</sup>
- The temple and dormitory accommodation is not intended to operate independently of the Crematorium
- Extension of private road and car parking
- Landscaping

The application is referred to the Joint Regional Planning Panel for determination pursuant to clause 13B (1)(a) of State Environmental Planning Policy (Major Development) 2005 as the development comprises a '*place of worship*' which has a capital investment value in excess of \$5 million.

The development involves two (2) distinct building clusters consisting of a stage 1 crematorium, two (2) associated ceremony halls and information centre which are sited on the north eastern portion of the site and a stage 2 temple/meditation building with ancillary dormitories which are sited on the north western portion of the site. The proposed uses are not intended to operate independently of one another.

The proposal was originally submitted to Council in April 2010 for a stage 1 crematorium with four (4) associated ceremonial/service and dining halls along with an information centre building, comprising six (6) buildings in total. The stage 2 component of the application remains the same as originally submitted although the buildings have been setback a further 45 metres away from Greendale Road to an 80 metre setback. Council Officers originally raised preliminary concerns in respect to the overall scale of the development and encouraged the applicant to re-consider the design of the proposal.

The applicant subsequently submitted amended plans to Council on 8 October 2010, which primarily reduced the number of halls associated with the crematorium from four (4) to two (2) and also reduced the height of the crematorium and associated ceremonial hall buildings from 14.5 metres to 9.2 metres at the southern rear of the building. The height of the crematorium at its northern frontage was originally 8.5 metres and has been reduced to 7.2 metres. The amended design of the proposal has significantly reduced the bulk and scale of the crematorium building via a reduction in the height of the roof form given the original design incorporated flues within the roof form. The narrow flues are now located at the rear of the crematorium. The amended design has also achieved a significant reduction in the overall building footprint via the deletion of the two ceremony halls and has consequently assisted to reduce the bulk and scale of the development.

Other changes incorporated into the amended plans included:

- Widening of private road width from 6 to 9 metres in line with Traffic Engineering recommendations
- Deletion of second north western access to Greendale Road servicing temple/meditation centre and replacement with emergency egress with locked gate.
- Removal of roundabout and circular parking area located over western portion of site
- Temple and dormitory accommodation setback further away from Greendale Road to minimise clearing impacts on Cumberland Plain Woodland and Transition Shale Plain Woodland. Previous setback was 35 metres and the amended setback is 80 metres
- Memorial Gardens originally proposed on the lower southern side of crematorium re-located to higher northern side of Greendale Road frontage crematorium complex

The subject land is zoned RU1 Primary Production zone under Liverpool Local Environmental Plan 2008 and the proposed development is defined as a '*crematorium*', '*cemetery*' (storage of ashes) and '*place of public worship*' which are permissible uses in the zone with consent. The proposal also incorporates an ancillary accommodation component in the form of three (3) dormitories with capacity for a total of 18 people.

The Development Application was publicly advertised on three (3) separate occasions as a result of ongoing amendments to the proposal and submission of additional supporting reports. A total of 146 submissions were received during the three advertising periods. An information session was also held on 22 November 2010 to clarify concerns raised within the submissions during the public advertising period.

The proposal necessitates removal of approximately 140m<sup>2</sup> of Grey Box Cumberland Plain Woodland, which is a critically endangered ecological community and 0.41 ha

of Shale /Sandstone Transition Forest, which is an endangered ecological community. A further 1.82 hectares of shale/Sandstone Transitional Forest will be affected by Asset Protection zones surrounding the development required by the NSW Rural Fire Services. Councils Natural Resource Officer has considered a Flora and Fauna Report submitted with the proposal which addresses the proposed clearing and advised the report is satisfactory with considerations under the Threatened Species Conservation Act and concurred with the reports findings and recommendations subject to preparation of a deferred commencement condition requiring preparation of a Vegetation Management Plan to address Cumberland Plain Woodland rehabilitation.

The site is listed as containing a local heritage item known as the Shadforth Monument (former pioneers monument) - item No. 24 on the basis it was understood to contain the Shadforth Monument. It was re-located in 1980 from the St Mark's Anglican Church site nearby after the sale of the church and conversion of the cemetery. However it has subsequently been discovered that the monument is in fact located within the Greendale Road reserve and on Council property.

A separate recommendation has been made requiring Council to prepare an amendment to Liverpool Local Environmental Plan 2008 to remove the Shadforth Heritage Item classification from the subject site and consider an alternative location for the monument. There are also two heritage items immediately adjoining the site - Items 25 and 26 being a private dwelling (former St Mark's Anglican Church group) and Greendale Roman Catholic Cemetery.

This report summarises the key issues, which should be considered in the determination of the proposal in accordance with the provisions of the Environmental Planning and Assessment Act 1979, Liverpool Local Environmental Plan 2008 (LLEP 2008) and Development Control Plan 2008. The proposal does not represent a Scheduled Activity under the Protection of the Environment Operations Act or Designated Development under Schedule 3 of the Environmental Planning and Assessment Regulation 2000.

The Development Application has been assessed on its merits and is considered satisfactory. Assessment of the development has revealed that the potential impacts of the proposal can be appropriately mitigated to ensure that the development does not adversely impact on both the natural and built environment. It is considered that any potential impacts on the amenity of both the site and neighbouring properties can be appropriate mitigated to reduce the likelihood of land use conflict.

Accordingly it is recommended that the development application be approved subject to conditions of consent.

## **SUMMARY OF RECOMMENDATION:**

That:

- (1) The Sydney West Joint Regional Planning Panel issue Deferred Commencement Consent for Development Application DA 1291/2010 proposing construction of a crematorium comprising the following:

### Stage 1

Construction of a crematorium and two (2) associated ceremonial halls, information centre, memorial gardens (cemetery) incorporating containment of 10,000 ashes in receptacles, car parking and access roads, fire trails, associated landscaping, fencing and signage.

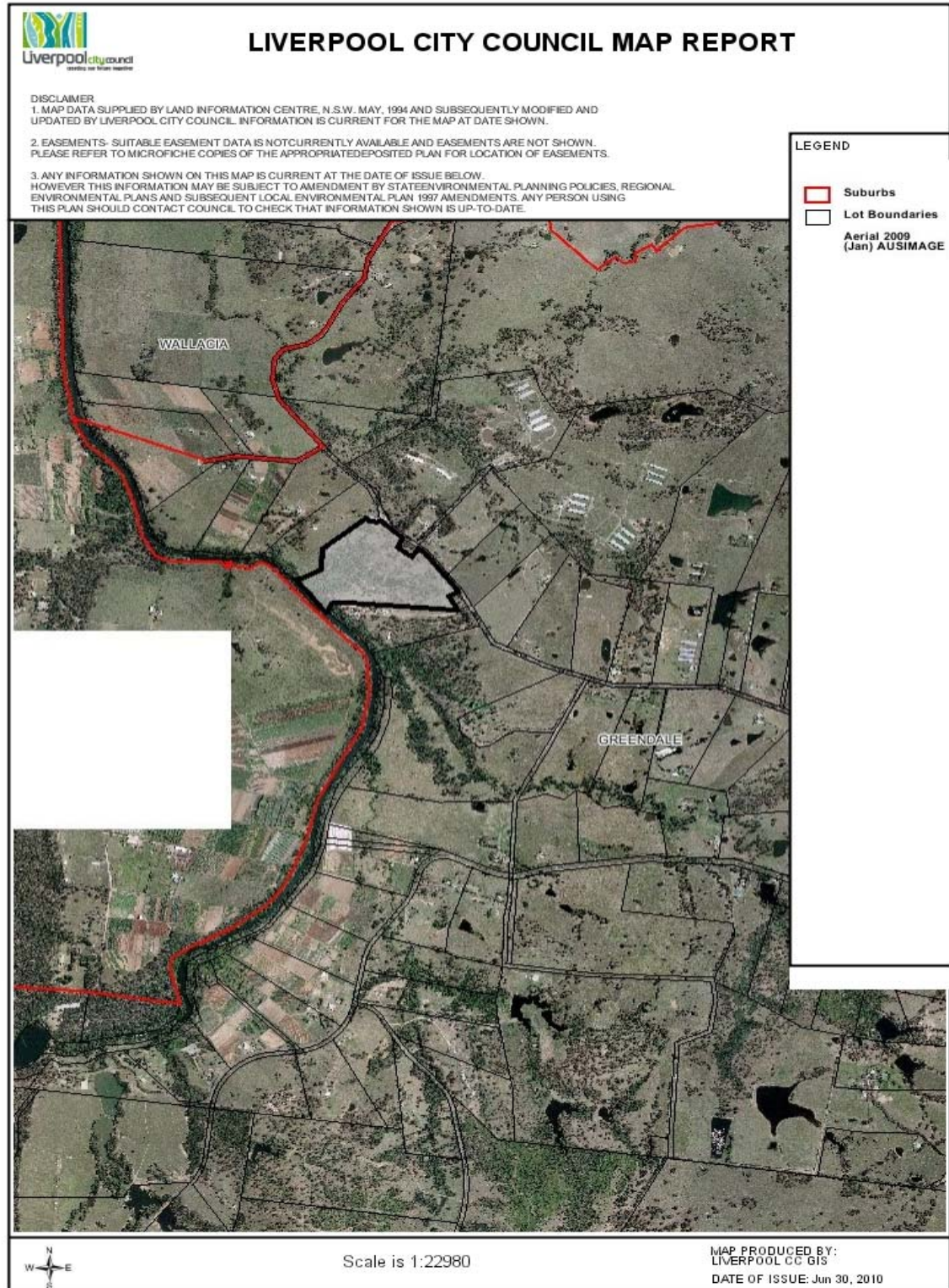
## Stage 2

Construction of temple (place of public worship) including facilities for meditation and dining, and ancillary dormitory accommodation, extension of private access road and car parking, associated landscaping, fencing

on, 992 (lot 1 DP 520904) Greendale Road, Greendale subject to the attached conditions.

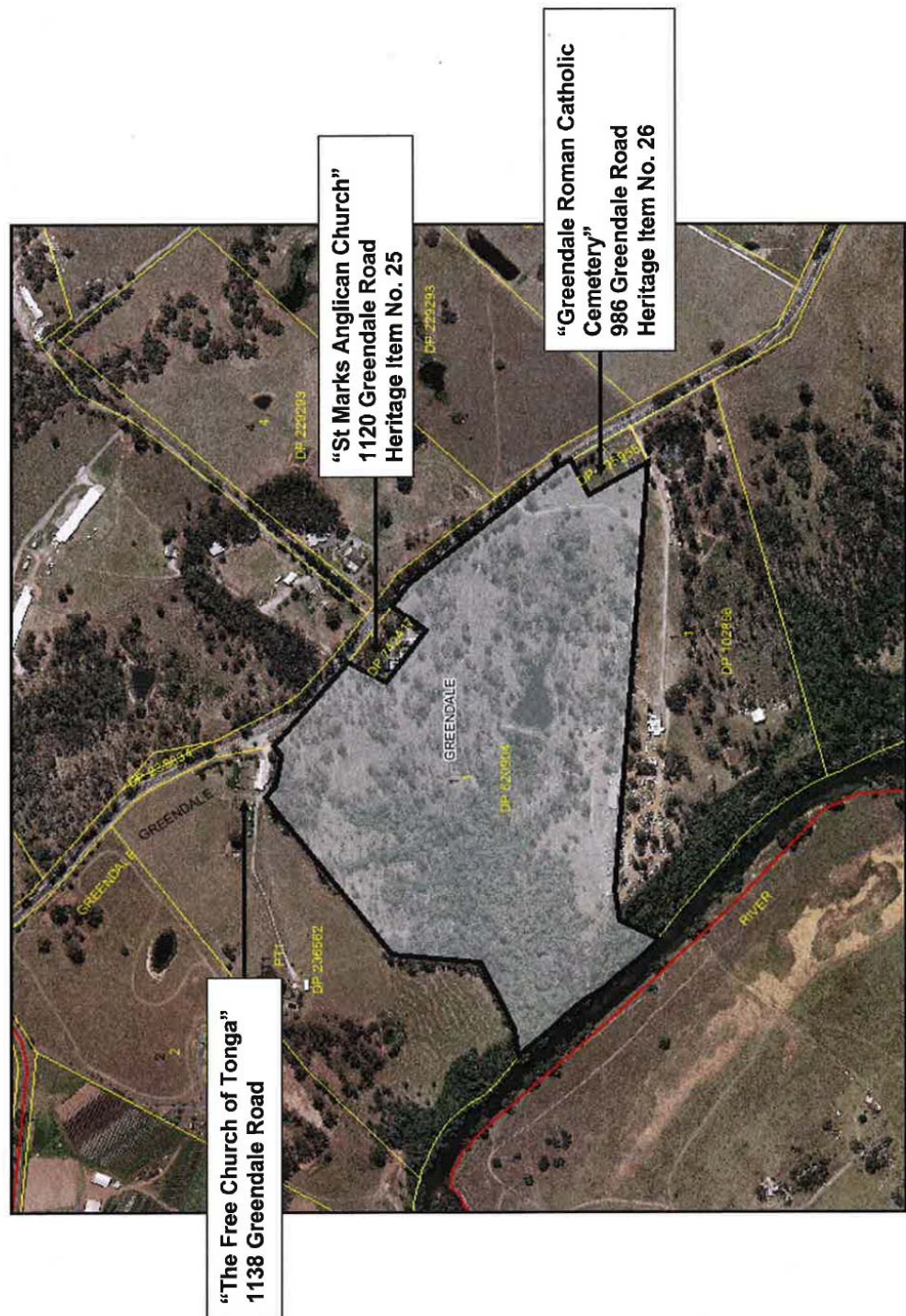
- (2) That persons who made a submission with regard to the proposed development be notified in writing of Joint Regional Planning Panel's decision.
- (3) An amendment be prepared to Liverpool Local Environmental Plan 2008 to remove the Shadforth Heritage Item classification from the subject site and consideration be given by Councils Heritage Officer to the re-siting of the monument to an alternative location.

## LOCATION MAP:





**DETAILED LOCATION MAP:**



## **BACKGROUND:**

22 December 2009-Pre-lodgement meeting conducted with the applicant and respective Council Officers.

23 April 2010-Development Application submitted to Council.

1 May 2010 to 17 June 2010- Development Application was publicly advertised in accordance with Part 1.1 of Liverpool Development Control Plan 2008. Council received a total of fifty eight (58) submissions.

1 July 2010-Preliminary assessment report considered by the Sydney Metropolitan West Joint Regional Planning Panel.

14 July 2010-Letter forwarded to the applicant requesting additional information.

26 July 2010-Post lodgement meeting conducted with the applicant and Council Officers to discuss preliminary comments raised by the Joint Regional Planning Panel preliminary meeting and issues raised in advertising period and possible re-design options available.

6 August 2010- Post lodgement meeting conducted with the applicant to discuss concept re-design options proposed by the applicant.

8 September 2010-Letter forwarded to the applicant requesting additional information.

8 October 2010-Amended proposal submitted to Council.

27 October to 2010 November 2010-Amended proposal publicly advertised.

22 November 2010-Public information session conducted.

17 January 2011-Additional information submitted to Council.

11 February 2011-Meeting conducted with applicant to discuss projected timeframe of JRPP meeting.

16 February 2011 to 18 March 2011-Further amended proposal advertised.

28 April 2011-Proposal forwarded to the Sydney West Joint Regional Planning Panel for determination.

## **DESCRIPTION OF SITE AND LOCALITY:**

The subject site is identified as being Lot 1 in DP 520904 (No.992) Greendale Road, Greendale. The site is located approximately 4 kilometres south of Wallacia.



The land is described as an elongated triangle shaped property that has a total area of 19.5 hectares with a frontage of approximately 382 metres to Greendale Road. The western boundary of the site directly fronts the Nepean River.



Frontage of site to Greendale Road

The site has access from Greendale Road which is a collector road with a sub-arterial function. Greendale Road facilitates two way traffic with one undivided lane in each direction.

The higher portion of the subject site where the development is proposed is currently vacant with no permanent buildings or structures. It contains a large dam over the central portion of the property. There is an existing dwelling and associated out buildings, containers, old car bodies and general scattered metal materials located along the rear south western portion of the property, adjacent to the southern side boundary of the property.

The crematorium building envelope lies on an upper slope of a low ridge line which falls to the south west. The crematorium complex is located approximately 50m from the top of the ridge line and comprises slopes ranging from 9-16%. The site drains into a number of ephemeral gullies, which ultimately drain into the Nepean River at the western extent of the property. The higher northern portion of the site, closer to Greendale Road, is undulating in nature. The highest area surrounding the site is occupied by the former St Marks Church property to the immediate north west which has been converted to a dwelling, with a second elevated area occupied by the Catholic Church property to the immediate east of the site.

Based on the survey levels submitted with Development Application, the frontage of the site to Greendale Road has an existing natural ground level of RL 62 AHD and the existing natural ground level of the crematorium building varies from RL 58 to RL 59 AHD. On this basis there is a fall of approximately 3 metres from the higher Greendale Road frontage of the site to where the ceremonial halls are proposed to be constructed (RL 58 AHD) and 4 metres to where the crematorium is proposed to be constructed (RL 58 AHD).

The property comprises heavily vegetated forest coverage although the development

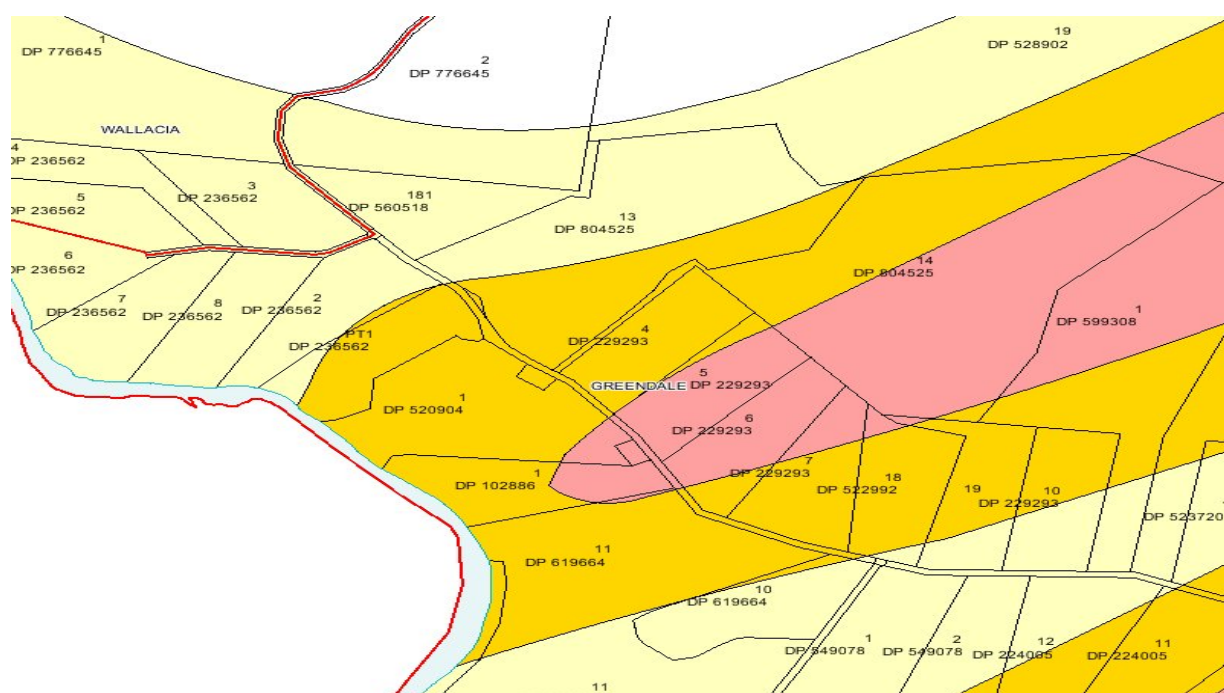
footprint area generally comprises exotic grasses with scattered larger mature eucalypt trees and regrowth trees. Three remnant vegetation communities occur on the site, including Grey Box Cumberland Plain Woodland, Forest Red Gum - Grey Box Woodland and Forest Red Gum Open Forest.

The site is a locally listed heritage item on the basis the site was understood to contain the Shadforth Monument (former pioneers monument) - item No. 24. It was re-located in 1980 from the St Marks Anglican Church site nearby after the sale of the church and conversion of the cemetery. However it has subsequently been discovered that the monument is in fact located within the Greendale Road reserve and on Council property. There are also two heritage items

immediately adjoining the site which front Greendale Road, namely St Marks Anglican Church which has been converted to a private dwelling and the Greendale Roman Catholic Cemetery to the immediate east. The site is not within a heritage conservation area.

The site is identified as being bushfire prone land. Town sewerage and water services are not available to the site.

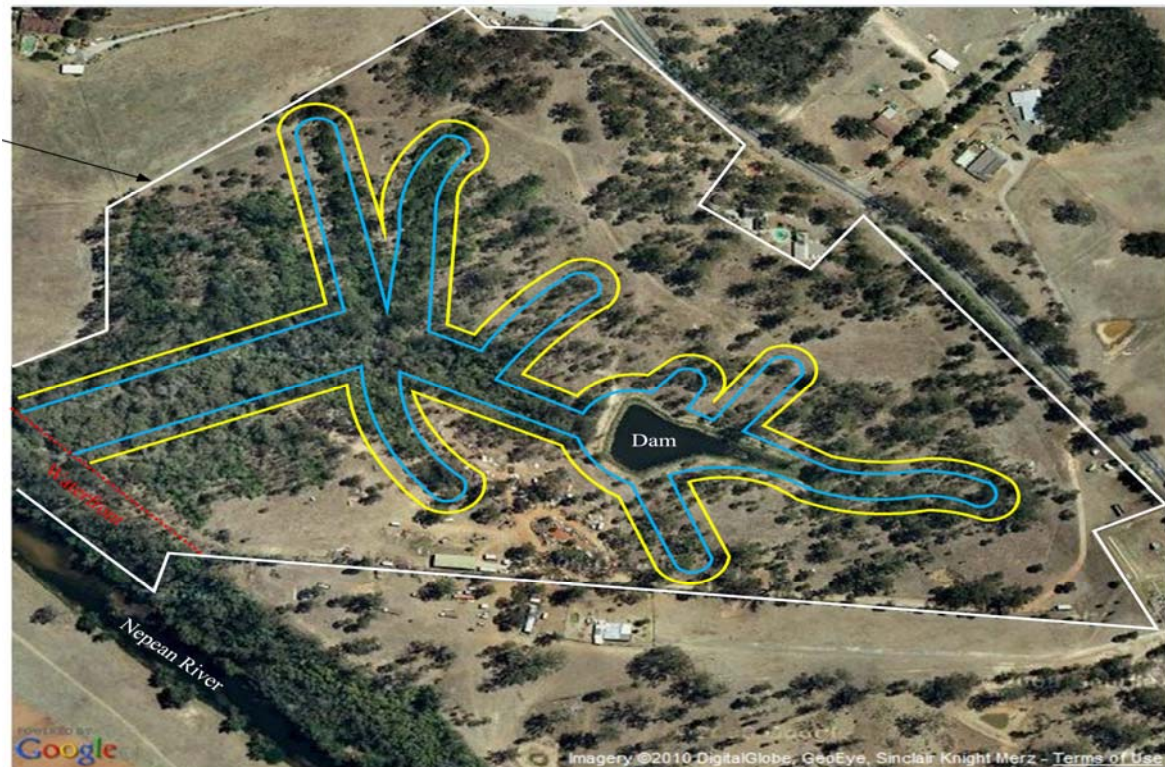
The bulk of the site is located within the ANEF 20-25 Australian noise exposure forecast, however the far north eastern portion of the site, where the crematorium is sited is located within the ANEF 30-35 Australian noise exposure forecast.



ANEF Noise Exposure Forecast

The lower western portion of the property is affected by flooding under 1% Annual Exceedance Probability (AEP) event. The proposed buildings are located outside the 1% AEP flood extent. The 1% AEP flood level in the vicinity of the property is 46.1m Australian Height Datum (AHD) and the buildings are proposed to be constructed above the flood line at RL 58.





#### Natural Drainage Depressions

The area surrounding the site is primarily rural in character with the average size of properties immediately adjoining and adjacent to the site having an area of approximately 10 hectares with some other larger properties also in the general area. The site directly adjoins the former St Mark's Anglican Church (No.112 Greendale Road) on three boundaries. The Church site comprises a small sandstone church which was converted for residential use in 1980. The site also directly adjoins the Greendale Roman Catholic Cemetery to the immediate east (No 986 Greendale Road) which also comprises a small chapel that was built in 1995. To the west, the site backs onto the Nepean River. To the north west, the site adjoins a large parcel of land owned by the Free Church of Tonga which comprises a place of worship which is sited closer to the Greendale Road frontage of the site and has no heritage value. The property also contains a dwelling.

To the north, the site is directly adjacent to medium acreage properties with areas of approximately 10 hectares.





Frontage of site to Greendale Road



View along Greendale Road frontage of site

## DETAILS OF THE APPLICATION:

Council is in receipt of a Development Application that proposes construction of a crematorium comprising the following:

### Stage 1

- Crematorium, comprising two cremators

- Four (4) to six (6) ceremonies are forecast to occur per day
- Two (2) ceremony halls with a seating capacity of 140 people each
- The combined floor area of the crematorium and ceremony halls is 2100m<sup>2</sup>, including entry hall
- Information centre with a floor area of 100m<sup>2</sup> located at the northern frontage of the site adjacent to the main entrance
- Entrance wall and metal fencing with a height of 1.23m
- Internal road with 9m width and line marked car parking for a total of 126 vehicles and informal parking for up to 216 vehicles along the sides of the access road
- Provision of fountain in centre of entry roundabout
- Memorial garden with capacity for containment of 10,000 ashes in receptacles
- Landscaping
- Vegetation clearing
- Rehabilitation of Grey Box Cumberland Plain Woodland and Shale/Sandstone Transitional Forest
- Establishment of Asset Protection zones and emergency bushfire trails

## Stage 2

- Temple/meditation centre with a floor area of 400m<sup>2</sup>
- Three (3) dormitories with sleeping capacity for 12 persons each with facilities for dining with floor area of 500m<sup>2</sup>. The maximum length of stay is 2-5 days.
- The combined floor area of the temple/meditation hall and dormitories is 900m<sup>2</sup>
- Extension of private road and car parking area
- Landscaping

The development involves two detached (2) building clusters. The stage 1 crematorium, associated ceremony halls and information centre are sited on the north eastern portion of the site and the stage 2 temple/meditation complex with ancillary dormitories is sited over the north western portion of the site. It is estimated that the total combined building and hard stand areas is approximately 1.75 hectares.

The amended proposal submitted to Council on 8 October 2010 has reduced the number of associated halls associated with the crematorium from four (4) to two (2) and also reduced the height of the crematorium from 14.5 metres to 9.2 metres at the southern rear of the building. The height of the crematorium at its northern frontage was originally 8.5 metres but has been reduced to 7.0 metres. The amended design of the proposal has significantly reduced the bulk and scale of the crematorium building via a reduction in the height of the roof form which previously incorporated internal flues. The narrow flues are now located at the rear of the crematorium. The amended design has also achieved a significant reduction in the overall building footprint via the deletion of the two ceremony halls which has assisted to reduce the bulk and scale of the development. Other changes incorporated into the amended plans include:

- Widening of private road width from 6 to 9 metres
- Removal of second north western access to Greendale Road servicing temple/meditation centre. However an emergency gate is provided on the plans where the previous access was nominated.
- Roundabout located over western portion of site removed



- Temple setback further away from Greendale Road to minimise clearing of Cumberland Plain Woodland and Shale/Sandstone Transition Forest. Previous setback was 35 metres and amended setback is 80 metres
- Memorial Gardens previously proposed on the lower southern side of crematorium re-located to higher northern Greendale Road frontage side of crematorium complex

The proposed development footprint involves significant regrading, excavation for foundations, construction of internal private roads, footpaths and other paved areas. Significant disturbance of soils will be required to facilitate the required earthworks. The crematorium and associated halls are proposed to be constructed with a finished floor level of RL 58 AHD and will involve extensive cutting of 1-1.5 metres on the higher northern side and similar filling on the lower southern side of the building. The temple/mediation and dormitory accommodation buildings are proposed to be constructed with a finished floor level of RL 57AHD and RL 58 AHD and will also require extensive filling of approximately 2 metres on the lower southern side of the building.

The crematorium complex and temple/dormitory accommodation buildings are sited approximately 500 metres and 300 metres respectively from the Nepean River.

### Crematorium

The building design consists of modern rendered buildings with A symmetrical cone shaped roofs. The crematorium and two ceremonial halls are clustered into the one complex with a finished floor level of RL 58 and are linked via a connected entry hall.

The crematorium complex has provision for two cremators to function simultaneously which are sited on the ground level of the building. A foyer control room, ash collection room and toilets are also proposed on the ground level of the building. A viewing gallery is proposed on the higher first floor of the building for grieving relatives. The crematorium buildings incorporate skylights which are designed to provide ambience and allow natural light penetration into the building.

The ceremony halls have seating capacity of 140 each with amenities facilities. The halls have private gardens and a small structure to console grieving persons. An audiovisual control room and a family viewing room are also provided.

The crematorium and ceremonial halls have a maximum height ranging from 7.8 metres to 9.2 metres measured on the southern rear elevation of the buildings from the top of the roofs to the natural ground level. The crematorium however does incorporate two flues at the southern rear of the building which provide the building with an overall maximum height of 14 metres measured from the rear southern elevation of the building to the natural ground level where the site drops away. The two flues combined measure 2.4 x 0.8 metres. The northern elevation frontage of the development to Greendale Road has a variable height ranging from 5.7 metres to 7.0 metres measured from the natural ground level to the roof.

The front setback of the buildings from the Greendale Road boundary frontage ranges from approximately 20 metres to 64 metres. The crematorium is sited approximately 64 metres from the boundary to Greendale Road. The information centre is sited approximately 20 metres, the ceremonial halls 41-44 metres and the crematorium is 64 metres from the northern front Greendale Road boundary of the site. The memorial gardens at the closest point are located approximately 15 metres from the front Greendale Road boundary. The ash storage receptacles have a height

of approximately 1.7 metres and have walking paths between them.

The crematorium and ceremony halls will be constructed of rendered masonry walls and a light weight concrete roof. Each of the various building roofs incorporate glazed skylights. The external finish of the buildings consists of muted subtle colours of grey and beige/light brown.

The crematorium has provision for an above ground LPG tank with a capacity of 7.5 kilolitres which is located approximately 23 metres to the rear south east of the crematorium.

The crematorium also incorporates stepped flower gardens on the east and western sides of the memorial garden as shown on the concept landscape plan.

The cremator will be equipped with a range of monitoring equipment for process control and for emissions tracking, including a thermocouples for measuring temperature, flow meters for controlling fuel/air ratio, oxygen sensor, opacity, carbon monoxide and carbon dioxide monitors in the stack. The parameters will be monitored continuously and operating conditions controlled for least release of emissions, especially odour and particulate matter. The odour and air quality report submitted with the proposal advises that typically it takes approximately 70 minutes to cremate a body.

The proposal does not represent a Scheduled Activity under the Protection of the Environment Operations Act and hence is not required to be licensed. Neither does the proposal represent Designated Development under Schedule 3 of the Environmental Planning and Assessment Regulation 2000.

#### Temple/Meditation Dormitory Building

The temple and dormitory accommodation are proposed to operate directly in conjunction with the crematorium and not operate independently of one another. The accommodation component is intended for persons who have travelled long distances to attend funeral services. The temple/meditation is not intended to operate as a place for regular public worship but as an ancillary mediation place for persons that have attended a funeral service.

The Temple comprises a prayer hall on the first floor level, multipurpose/meditation hall on the lower level, and three dormitories to accommodate approximately 6 people in each dormitory with a total of 18 people at a given time.

The building is proposed to be constructed of rendered brick/block work walls with terracotta roof tiles.

The temple is sited approximately 80 metres from the northern front boundary frontage to Greendale Road.

#### Information Centre

The Information centre is located 20 metres from the northern Greendale Road frontage of the site adjoining the main gate. The information centre is a smaller circular shaped building comprising a visitors lounge and toilets. It is a single storey building with a height of 4.5 metres and floor area of 100m<sup>2</sup>. It will be constructed of a light weight concrete roof form and rendered brickwork matching the crematorium and ceremony halls.

## Access

Vehicular access to the site is proposed via a double width driveway crossing in Greendale Road, approximately 15 metres north of the existing driveway crossing near the north eastern corner of the site and provides two-way vehicular access. The internal roads are 9 metres in width.

It is proposed to provide a CHR type of intersection treatment to access the site in accordance with the RTA Road Design Guide. The intersection treatment involves provision of right and left hand turning bays from Greendale Road for motorists turning into the site. The turning bays will necessitate widening of approximately 3 metres on the eastern and western sides of Greendale Road to facilitate the intersection treatment recommended by the applicant's Traffic Consultant and is supported by Councils Traffic Engineer. The concept of the intersection treatment prepared by the applicant's Traffic Engineering Consultant involves provision of a 136 metre long deceleration lane for right hand turning vehicles into the site and a 90 metre deceleration lane for vehicles turning left into the site. The intersection design will be subject to detailed Engineering design.

The applicant's Traffic Engineering Consultant has advised that the required safe sight distance for vehicles entering and exiting the proposed crematorium is 170 metres from the proposed driveway crossing, in accordance with the RTA Road Design Guide, Section 4 Intersections at Grade. It is determined that this required sight distance is available to the left side for vehicles exiting the site, however, it is restricted on the right hand side, due to existing vegetation.

To facilitate site distance requirements in accordance with the RTA intersection design guidelines will require removal of vegetation located within the road reserve to the north of the proposed intersection. The extent of these works is to be confirmed during the detail design of the proposed road widening to be undertaken. Also due to the existing crests on Greendale Road, located to the north and south of the proposed driveway, the applicant's Traffic Consultant has recommended advance warning signs be installed on both sides of the road, to warn motorists of turning vehicles at the Crematorium site, in order to increase safety.

The "RTA Guide to Traffic Generating Development – 2002" does not provide a traffic generation rate for crematoriums or cemeteries. Based on surveyed results of current traffic generation rates from two existing cemeteries (Pine Grove Memorial Park and Forest Lawn Cemetery), the applicant's Traffic Engineering Consultant has estimated that the crematorium will have a peak traffic generation rate of 66 vehicles per hour at maximum capacity. However, on special and rare occasions and during high profile funerals, the traffic generation rate may be increased up to between 200 and 300 vehicles per hour.

The applicant's Traffic Engineering Consultant has estimated the likely traffic generation rate for the proposed development as listed in the following table:

<b>Cemetery Site</b>	<b>Maximum number of</b>	<b>Existing peak traffic generation (veh/h) at current</b>	<b>Projected peak traffic generation (veh/h) at maximum capacity</b>
----------------------	--------------------------	--	--

Pine Grove Memorial Park	40,000	131 veh/h at 50% capacity	262 veh/h at 100% capacity
Forest Lawn Cemetery	120,000	81 veh/h at 60% capacity	114 veh/h at 100% capacity
<b>Proposed crematorium site</b>	<b>10,000</b>	-	<b>66 veh/h at 100% capacity</b>

### Parking

The car parking provision has been determined by the applicant's Traffic Engineer based on surveyed results of Pine Grove memorial Cemetery and Forest Lawn Cemetery which have respective parking provision of 1 space per 77 burial plots and 1 space per 315 burial plots. The most conservative car parking rates of 1 space per 77 burial plots has been adopted to calculate likely car parking demand for the development.

The development has on-site car parking provision for one hundred and twenty six (126) formal line marked spaces and approximately 216 unmarked on-site kerbside parallel parking along the proposed private road. A total of 342 car parking spaces can be provided on site. The 216 kerbside spaces has been determined on the basis of the road having a length of 650 metres and allowing 6 metres per parallel car parking space.

The applicant's Traffic Consultant advised that the development provides for 600 spaces on the private road and a total of 726 spaces, which represents an additional 596 on-site parking spaces to the estimated parking provision required. This is not considered to represent an accurate reflection of practical car parking provided on site. In actual fact

Based on the crematorium having a maximum of 10,000 ash storage spaces, the applicant's Traffic Engineering Consultant has advised that the proposal generates a demand for one hundred and thirty (130) on-site car parking spaces at the rates of 1 space per 77 ashes. As the proposal can practically achieve 342 spaces, it provides an additional 212 on-site parking spaces to the estimated parking provision required.

The on-site parking spaces are provided over five (5) separate car parking areas and on both sides of two-way internal roadways within the site, to allow visitors to obtain parking all throughout the site.

There is provision for fourteen (14) spaces for people with a disability, three (3) parking spaces for mini busses and two (2) parking spaces for larger buses. There is provision for a service vehicle bay located on the western side of the circular car parking allocation to the east of the crematorium. All general-use parking spaces have a width of 2.6 metres and a length of 5.5 metres, which is in accordance with AS2890. 1-2004.

### Landscaping

The frontage of the development to Greendale Road is proposed to be landscaped with a 5 metre wide hedge/planter bed with timber edging that will be planted with native trees, shrub and groundcover species at a density of 1 plant per m<sup>2</sup>. Local native species are proposed to be used with a dense growth habit to ensure a dense screen is achieved. The plant species proposed consist of a variety of natives ranging from Lomandra Grass with a height of 1 metre, shrubs with a mature height of 2-3 metres and small trees with a height of 6 metres. The trees are proposed to be planted 1 per 2 lineal metres.

A sandstone wall with a height of 1.23 metres is proposed at the entry of the development to Greendale Road along with a 1.2 metre high (black) metal galvanised fencing. A draft condition has been imposed requiring the existing timber paling fence located on the western side of the proposed black galvanised fencing to be removed and replaced with black palisade fencing materials.

### Operations

The crematorium provides space for two bodies at any one time with 4 to 6 ceremonies forecast to occur per day.

The number of staff proposed to service the crematorium is 10-12 and 5-8 for the temple and accommodation component.

The proposed hours of operations of the crematorium and temple are:

-Monday to Friday	8am to 5pm
-Saturday:	9am to 5pm
-Sunday:	9am to 5pm

The dormitories will operate Monday to Sunday 24hrs.

### On-site sewerage management

The Development Application is accompanied by a detailed Waste Water Treatment Report prepared by Storm Consulting. (Project No.1044 Rev B).

The Waste Water Treatment Report identifies the most suitable waste water management system for the development is a secondary or tertiary treatment system coupled with shallow sub-surface drip irrigation, given the clay loam nature of the soils. The identified location for the disposal of secondary effluent disposal is in the south western portion of the site as this portion of the site is cleared of vegetation.

Storm Consulting recommend a disposal area of 2700m<sup>2</sup> and a back up area of 2700m<sup>2</sup> be provided for the development. A total disposal area of 5400m<sup>2</sup>. Based on nutrient balance calculations, the development also provides for an absorption area of 5000m<sup>2</sup> to manage nutrient loads. In addition, to improve the capability of the wastewater disposal area to support non native vegetation and to promote soil drainage, Storm Consulting recommend that soil amelioration be undertaken involving application of lime and gypsum to the top 150mm of the soil profile prior to installation of the irrigation system.

Storm Consulting recommend a waste water treatment system that provides nutrient reduction to levels of around 5mg/l. for Phosphorous and 1.0mg/l. for nitrogen. A number of AWTs and membrane bioreactor package systems are able to achieve this level of treatment. Also to limit the treatment system footprint and



provide the treatment level required, Storm Consulting recommend that the wastewater treatment system incorporate a membrane bioreactor which should be able to handle the peak loading from the site, an estimated 11 kL/d, or around 80 EP. Some storage may be necessary as the disposal area is designed for the average flow, not peak flow.

Storm Consulting have plotted a suitable location for the disposal of secondary effluent which satisfies recommended buffer distances described in the Environmental Health and Protection Guidelines (Silver Book). Storm Consulting advise that there is at least 10,000m<sup>2</sup> of disposal area readily available over the site which is located in the south western portion of the site. The disposal area is located more than 100 metres from the banks of the Hawkesbury-Nepean River and complies with the Guidelines for On-Site Sewage Management for Single Households which recommends a minimum 100m buffer to permanent surface waters.

The latest amendment B Waste Water Treatment Report was prepared in direct response to the presence of a number of vegetation constraints over the site, in particular the existence of the Endangered Ecological Communities; Cumberland Plain Woodland (CWP) and Shale/Sandstone Transition Forest (SSTF). As a consequence, the development layout was modified to avoid, as much as possible these endangered communities to minimize clearing and impacts associated with Asset Protection Zones. To limit the impact of the wastewater disposal footprint on the EECs, the waste water disposal area was relocated from the original higher north western portion of the site to the south western portion.

Storm Consulting advise that wastewater generation is primarily from the ceremonial halls where visitors will use bathroom facilities. No food preparation is proposed. Dormitories incorporate bathrooms, kitchens and sleeping areas, wastewater production will be similar to household wastewater production.

Storm Consulting advise that the maximum peak wastewater production could potentially reach up to 11,000 litres per day when all facilities are in use (i.e. two ceremony halls and dormitories) and that there is adequate secondary area available to treat effluent on site. The average waste water generation is likely to be approximately 6408 litres per day.

#### Stormwater drainage

A concept stormwater drainage plan accompanies the Development Application. The stormwater plan incorporates a number of stormwater quality improvement devices to ensure treatment objectives are satisfied and the post development flows do not exceed pre development flows. The system includes the use of rock treatment headwalls below the buildings and car parking footprints, to dissipate flow rates and minimise scouring impacts and via dispersion within natural drainage lines which flow ultimately into the Nepean River.

#### Vegetation Removal

The proposal necessitates removal of approximately 140m<sup>2</sup> of Cumberland Plain Woodland and 0.41 ha of Shale /Sandstone Transition Forest. A further 1.82 hectares of shale/Sandstone Transitional Forest will be affected to achieve the required Asset Protection zone for fire hazard surrounding the development. Clearing and construction of fire trails to provide access and egress for fire-fighting vehicles

are also proposed. Offsetting for the removal of the Cumberland Plain Woodland and shale/Sandstone Transitional Forest is proposed on existing cleared areas in accordance with a future Vegetation Management Plan which has been imposed as a Draft Deferred Commencement condition of consent.

#### Supporting documentation

The proposal is supported by the following plans and reports:

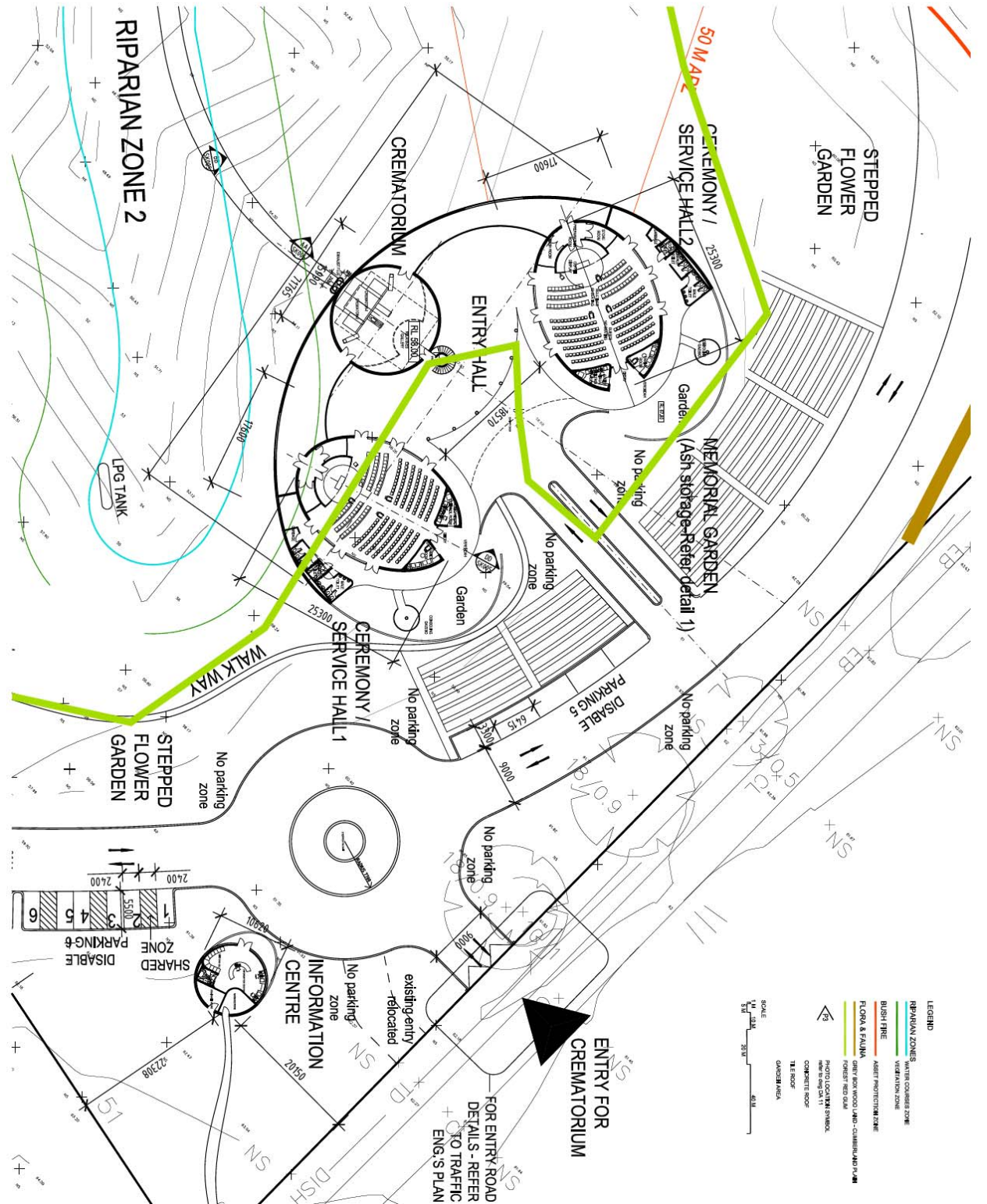
- Architectural plans
- Statement of Environmental Effects Report
- Flora and Fauna Report
- Air Quality and Odour and Impact Assessment
- Stage 1 Preliminary Contamination Report
- Traffic and Parking Impact Assessment Report
- Heritage Impact Statement
- Preliminary Aboriginal Archaeology Report
- Acoustic Report
- Salinity Management Report
- On-Site Waste Water Treatment Report
- Concept Stormwater Management plans
- Flood Risk Report
- Cut and fill plans
- Soil erosion and sediment control plans

# PLANS

## SITE PLAN



## DETAILED PLAN OF CREMATORIUM & HALLS





## 23

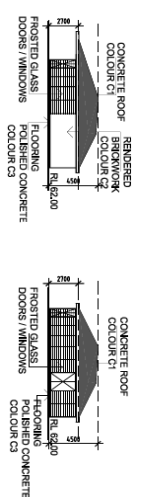


# ELEVATIONS OF CREMATORIUM

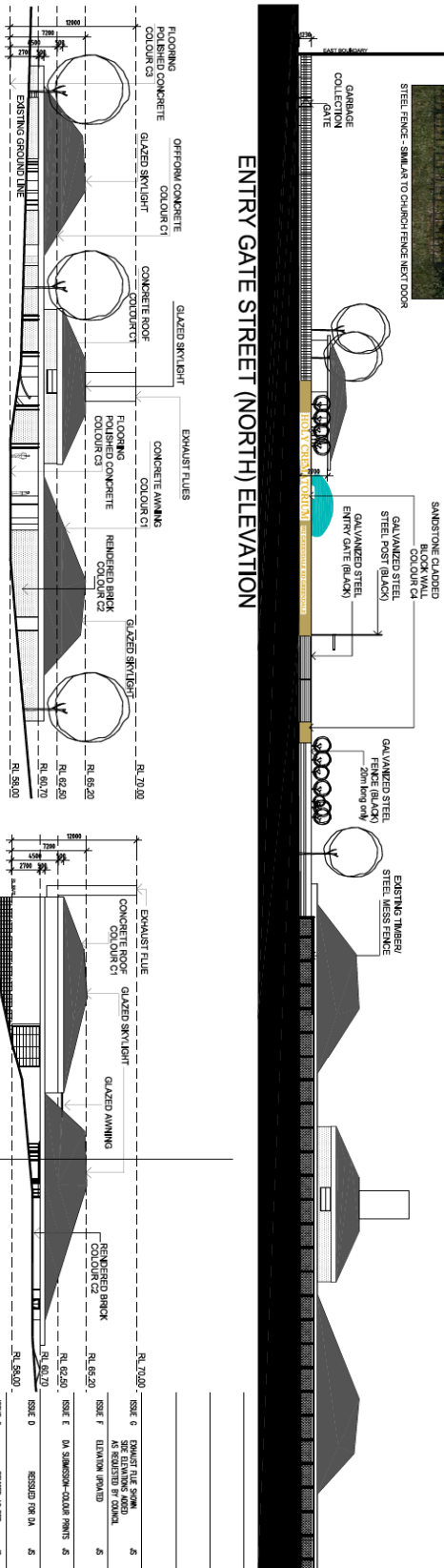


## INFORMATION CENTRE SOUTH ELEVATION

## INFORMATION CENTRE WEST ELEVATION



## ENTRY GATE STREET (NORTH) ELEVATION



## NORTH ELEVATION

## EAST ELEVATION

## SOUTH ELEVATION

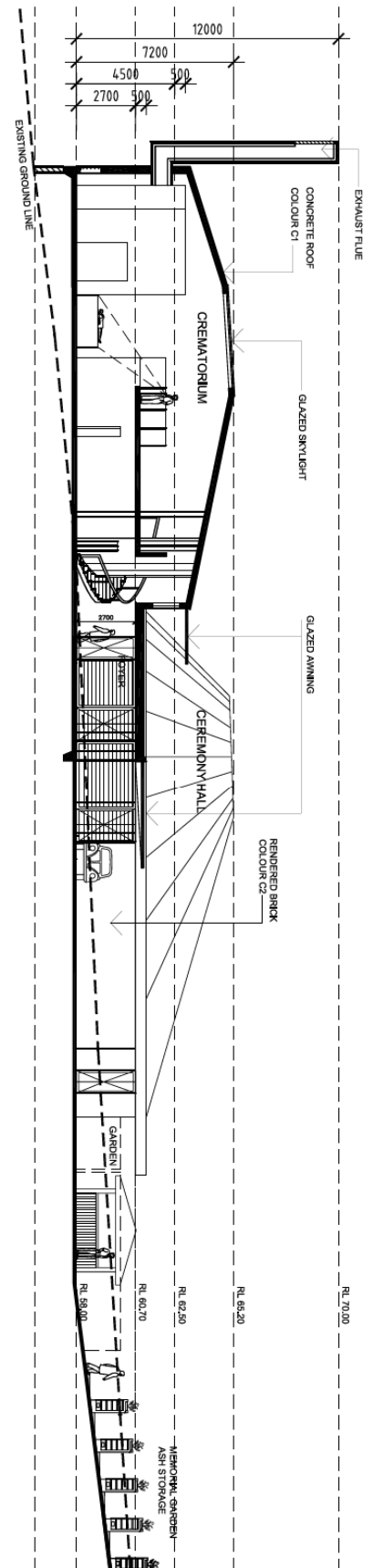
## WEST ELEVATION

ISSUE NO.	ISSUE DESCRIPTION	DATE
ISSUE A	ISSUE FOR CLIENTS	28/09/11
ISSUE B	ISSUE FOR CLIENTS	15/04/12
ISSUE C	ISSUE FOR CLIENTS	15/04/12
ISSUE D	ISSUE FOR CLIENTS	15/04/12
ISSUE E	ISSUE FOR CLIENTS	15/04/12
ISSUE F	ISSUE FOR CLIENTS	15/04/12
ISSUE G	ISSUE FOR CLIENTS	15/04/12

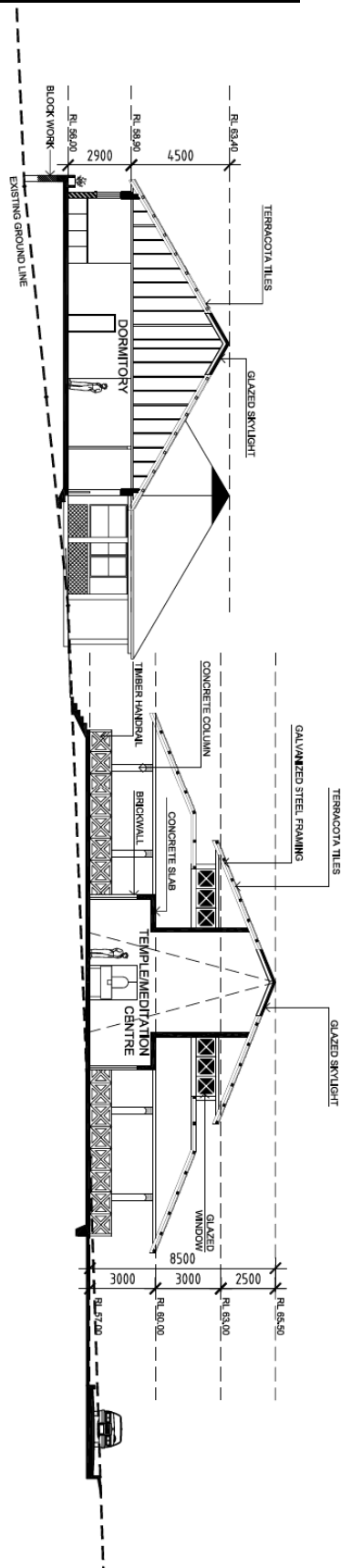
PROJECT NO.	DA 005
SCALE	1:200
DATE	15/04/12
DESIGNER	JAY SUNNAM ARCHITECT
CLIENT	PROPOSED CREMATORIUM
LOCATION	ROAD GREENDALE NSW

## SECTIONS OF CREMATORIUM & TEMPLE

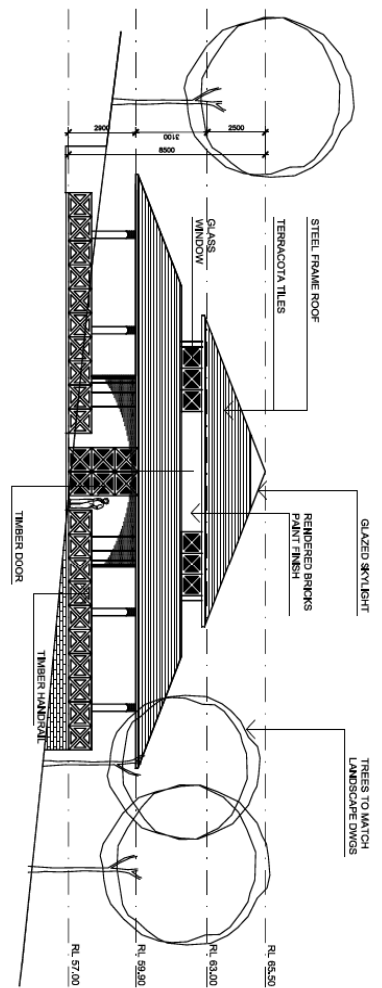
SECTION AA - CREMATORIUM



SECTION BB - TEMPLE/MEDITATION CENTRE AND DORMITORIES CROSS SECTION



JRPP (Sydney West Region) Business Paper – (Item 2) (28 April 2011) – (JRPP 2010SYW030)

[illegible]

Architectural elevation drawing of the Dormitory North Elevations. The drawing shows a long, low building with a series of gabled roof sections. The roof is labeled "GLAZED SKYLIGHT" and "GLAZED WINDOWS". The walls are labeled "TERRACOTTA TILES" and "RENDERED BRICKS". The building is flanked by trees and a planter box. Dimensions are given as 2900 and 4500. The drawing is oriented vertically on the page.

## **PHOTOMONTAGE**



**BIRD'S EYE VIEW**



**EAST VIEW**



**WEST VIEW**

