CONTENTS

Appendix 3
Preliminary Environmental Site Assessment

Appendix 4
Stormwater Management and Soil Erosion Plan
(Provided Separately)

Appendix 5
Hydrogeological Report

Appendix 6
Traffic and Parking Assessment and Patronage Survey

Appendix 7
Access Review Report

Appendix 8
Waste Management Plan

INTRODUCTION

This is a Statement of Environmental Effects to accompany a Development Application made under Section 78A (1) of the Environmental Planning and Assessment Act 1979 ("the Act").

The Development is not Exempt Development pursuant to Section 76(2) of the Act.

The Development Application is not in relation to Designated Development.

The Development is not Integrated Development pursuant to Section 91 of the Act. Referral to the Department Primary Industries Office of Water is not therefore required.

The Development Application includes reference to the following matters, which require approval under the Local Government Act 1993 in so far as such approvals are necessary for the construction of the development:

- Stormwater Drainage
- Waste Management

The Development Application is not made in respect of land that is, or is part of a wilderness area within the meaning of the Wilderness Act 1987.

The Proposed Development is required to be in accordance with the Manly Local Environmental Plan 2013 and the Manly Development Control Plan 2013 – Amendment Number 1

The Statement of Environmental Effects addresses those matters for consideration by the consent authority as set out in Section 79C (1) of the Act.

The Statement of Environmental Effects seeks to:

(a) demonstrate that the environmental impact of the development has been considered; and
(b) set out steps to be taken to protect the environment and/or to mitigate harm.

These matters are dealt with throughout this Statement in the descriptions, the analyses and accompanying diagrams and in the context of the Matters for Consideration under S79C (1) of the Act.

1 THE SITE AND CONTEXT ANALYSIS

1.01 DESCRIPTION OF THE PROPOSED DEVELOPMENT SITE

Title Description

The title description is as follows:-

Lot 1 DP 168527
Lot 1 and Pt3 DP 168526
Lots A and B DP 331109
Lots 36, 37, 43 to 54 incl., 85 and 86 in Sect 9 DP 939916

Site Description

The site address is L.M. Graham Reserve Manly. Specifically, the relevant portion is located on the corner of Kenneth Road and Balgowlah Road and extends in a westerly direction towards the existing football fields encompassing the existing car parking area.

Council has adopted a Landscape Masterplan for the L.M. Graham Reserve (Drawing SK01 Issue F dated 10 March 2011) which indicates a line at right angles to Kenneth Road and approximately 19 metres to the west of the existing car park as being the desired western boundary of the swim centre site. This line is approximately 13 metres clear of the relocated position of the eastern sideline of the closest (Senior) Soccer Football Field. The Football Association recommends a clearance of 6 metres and the remaining space is shown on the master plan as being a levy bank. The levy bank is shown extending southwards along this line from Kenneth Road to integrate with the existing bank running down from the Balgowlah Road alignment.

The adopted Masterplan for the L.M. Graham Reserve also implies the relocation of an existing basketball court in the north eastern corner of the Reserve. The basketball court is identified on the survey plans, but is not shown on the Masterplan drawing. The Masterplan indicates a new basketball court on the far western boundary of the Reserve, which is assumed to be a relocation of the existing court referred to above.

The site has a diagonal fall of about 2 metres from its south-western corner adjacent Balgowlah Road (RL 4.0) to the north-eastern corner of Kenneth and Balgowlah Roads (RL 2.0).

The existing swim centre comprising an outdoor 50m pool, an outdoor 25m pool, children's pool amenities buildings and surrounding landscaped area is set on a made earth platform at about the same level of the south-western corner adjacent Balgowlah Road, that is RL 4.0.

The existing swim centre is currently entered from Balgowlah Road, whilst the car park has its principal entrance in Kenneth Road and an exit in Balgowlah Road. There is also a paved drop off area in Balgowlah Road adjacent the present entrance.

1.02 PHYSICAL ASPECTS OF THE SITE

Drawing Number 1310-DA01 (the "site analysis") provides a comprehensive review in graphic terms of the site characteristic and includes reference to the following:-

Flooding

The site is flood prone land. The site analysis drawing shows the 1:100 year flood line extending into the site along the south side of Kenneth Road, and the east and west side of Balgowlah Road to a little beyond its intersection with Pine Street.

Council has adopted *The Manly Lagoon Floodplain Management Study June 1996. Appendix A: Interim Policy and Administrative Guidelines for Development and Use of Land Affected by a 1 in 100 Year Flood - Manly Lagoon*. The study indicates a 1:100 year flood level in Kenneth Road of 2.7 AHD. The Flood Planning Level (FPL) is thus 3.2 AHD.
As indicated above, the existing pool facilities have been constructed on a made earth platform at approximately RL 4.0 that is some 800mm above the FPL.

Solar Access

The site analysis shows the solar path and indicates the position of the sun at various times of the year from the mid-summer sunrise in the east to the mid-summer sunset in the south west. The site is generally well served by its solar orientation, with landscaped outdoor areas on the north overlooking Kenneth Road. The built elements are on the south and east of the 50m outdoor pool, so as not to overshadow it.

The 50m pool is disadvantaged by its strong western orientation, which is likely to make it unpleasant on late summer afternoons. The east-west orientation of the 50m outdoor pool is somewhat unusual and also undesirable, insofar as swimmers and water polo players are required to swim and play into the late afternoon sun to their potential disadvantage.

Notwithstanding the disadvantages identified with the principal outdoor pool, the orientation opportunities for the new indoor aquatic facility are most satisfactory.

The orientation of the site and the location of the existing pools provide an excellent opportunity to integrate the new facility with the existing outdoor pools to the north and to make use of the attractive and shaded grass areas beyond. The new indoor centre has the opportunity to overlook all of these areas, although sun protection will potentially be required on the north and west sides.

Winds

The site analysis shows the principal wind directions at the site. The most unpleasant of these are likely to be the primary cold autumn winds from the south and the cold winter and spring winds from the west. The new development should provide protection from these cold winds.

Salt Spray

The site, perhaps surprisingly, is only 750 metres from Manly Beach. Therefore, associated with the summer winds, it is likely to be subject to wind borne salt sea spray. This is likely to make corrosion an issue for the building's external structure and fabric. The building by its nature will also be subject to potentially severe corrosion issues internally as well. For these reasons, the structure will be vulnerable whether it is internal or external to the building.

Substrata

A further, more detailed geotechnical investigation has been carried out and the new report dated 16 August 2013 consolidates the findings of both site investigations. The new report is

stated to supersede that dated 18 July 2013 is now included at Appendix 2 in lieu of that dated 18 July 2013.
The building structure will be designed in accordance with the recommendations contained in the Geotechnical Report. The new indoor pools and the building will be supported on grout injected piles bedded into the underlying rock which is at widely varying levels below the surface.

Land Contamination

An inquiry has been made of the NSW Environment Protection Authority ("EPA") who has advised that there are currently no statutory notices issued under the Unhealthy Building Land Act 1990 for the subject site. The site is not registered with the EPA as a contaminated site under the Contaminated Land Management Act 1997.

Notwithstanding the above, a report prepared by Environmental Investigation Services Division of Jeffery and Katauskas Pty Ltd dated 30 August 2013 (Ref E26655Krpt) indicates the presence of lead and polycyclic aromatic hydrocarbons (PAHs) at two locations and fragments of asbestos cement at the ground surface in several locations. The report recommends further investigation in order to define a procedure for remediation. It is intended to procure the further report and to follow any recommendations which are forthcoming from that report

The EIS Report is attached as Appendix

Acid Sulphate Soils

The site is classified Class 4 on the Acid Sulphate Soils Planning Map published by the Department of Land and Water Conservation.

Appendix 3 is an Analysis of Proposed Excavation prepared by TompkinsMDA Architects

It is not intended to carry out any works which extend more than two (2) metres below the natural ground surface, therefore, an Acid Sulphate Soils Management Plan is not required to be submitted and Development consent is not required.

Existing Trees

There is no Tree Preservation Order applying to the site.

There are several large trees on the site, mostly scattered along the Balgowlah Road and Kenneth Road frontages. Most of the existing trees are native, mainly Eucalypt species and Melaleucas of good quality. The location, approximate size and species of trees are shown on the survey plan and the landscape plan indicates the trees which are proposed to be removed to make way for the new development.

1.03 EXISTING DEVELOPMENT

General

The existing outdoor swimming facilities were originally built around 1974-5, but have been added to over a number of years and now include the following:

- Outdoor 50 metre x 8 lane pool
- Outdoor shaded wading (toddlers') pool

- Outdoor 25m x 5 lane pool
- Storage/delivery/plant buildings
- Entry pavilion, with ticketing, kiosk and clubrooms
- Summer amenities blocks (open to the sky)
- On-site parking for 87 cars
- Accessible Change Room
- Parenting Room

These facilities are all elevated on a platform of imported, consolidated fill at approximately RL 4.0 that is about 1.3 metres above the original adjacent natural ground level. The existing entrance is via stairs from Balgowlah Road

1.04 EXISTING TRAFFIC, ACCESS AND PARKING

General

The site is located at the corner of Kenneth and Balgowlah Roads. Of these, Kenneth Road is the busier of the two and is the principal vehicle entry point for the site, even though pedestrian access is from Balgowlah Road. Because the existing car park has an informal one way flow, the exit from the site is in Balgowlah Road, however due to the turning opportunity provided by the car park layout, many vehicles also leave via Kenneth Road.

The site is particularly well located with respect to public transport, being adjacent Kenneth Road, which provides one of the major links between the City and the northern beaches region. Balgowlah Road, whilst less important, also has a local route passing through.

Although the site is well served by public transport, many trips are made by private car. Car parking for 87 vehicles is currently available on western side of the site adjoining LM Graham Reserve. There is also currently some parallel parking available on the south side of Kenneth Road.

1.05 SURROUNDING DEVELOPMENT

General

The site is generally flat and open, with the Manly Golf Course to the north and the L.M. Graham Reserve to the west. The only adjacent development consists of residential flat buildings interspersed with single houses to the east and south. The development to the east is located a long distance from the proposed new development and that to the south is located at a significantly higher level that the development site.

Privacy and Views of Adjoining Residential Properties.

The site is located in an extensive basin which is generally flat. It is overlooked by residential development at a significantly higher level on the south and to a lesser extent, the east.
The proposed development, being single, part two storeys, will not have sufficient elevation to enable overlooking of adjoining residential properties. There are no views from adjoining properties which will be directly affected by the development as the only properties able to be affected will continue to have views over the roof of the Centre. The privacy of neighbouring residential properties will not therefore be detrimentally affected.

Overshadowing

Because the proposed development is located to the south of the existing facility, and is significantly lower than adjoining properties to its south, overshadowing is not an issue. This fact is illustrated by the shadow diagrams provided.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The work comprises the demolition of some of the existing structures on the site, previously listed, and the construction of a new aquatic and leisure centre together with a small fitness centre. In addition, a small community building is proposed which will replace the existing bus shelter on Kenneth Road; provide male, female and accessible change rooms, together with a cafe, all for users of the LM Graham Reserve.

The proposed new aquatic and leisure centre is an assembly building, being a sports centre located on two levels. It is therefore Class 9b and is required to be of Type B construction under the Building Code of Australia (BCA). The community building, whilst also of Class 9b is only a single level and may therefore be of Type C construction.

2.01 CLAUSE DELETED ISSUE C

2.02 THE PROPOSED DEVELOPMENT

The development for which approval is sought includes the new indoor aquatic centre, the demolition of the existing swim centre change rooms, offices kiosk, canopies and entry area excepting the existing substation, the new community facilities on Kenneth Road, off street and on street car parking.

Programme

The basic functions being provided within the new indoor component of the facility include:
"Wet" Facilities:

- 25 metre, 8 lane lap pool
- Seating for 150 spectators
- Programme pool
- Leisure pool
- Spa pool
- Sauna and steam room
- Change Rooms and amenities
- First aid room
- Water filtration and disinfection plant
- Mechanical Plant
- Brine Plant
- Equipment store
- Foyer
- Office
- Store

"Dry" Facilities:

- Gymnasium
- Group Fitness/multipurpose space
- Change Rooms and amenities
- Assessment room

The 'shared' components of the new facility include:

- Administration, incorporating reception, centre manager's office, staff amenities and a control room
- Kiosk, incorporating servery, kitchen, cool room and store
- Creche; including dedicated amenities, sign-in/office, cot room, and toy store
- Male, female wet, dry and accessible change rooms and amenities
- Lobby and circulation space

Community Facilities as follows:

Male, female, (home and away) team change rooms
Kiosk/cafe
Community Store
Bus shelter.

The community facilities are intended for the use of community sporting groups using the LM Graham Reserve. It is not intended to have any association with the aquatic facilities other than the obvious architectural and urban design connections, in so far as it comprises part of the entry to both facilities.

Environmental Considerations

The proposed development is required to adopt a high level of environmental responsibility by employing passive design and a high level of ecologically sustainable strategies. The use of simple planning and architectural devices to modify and control the internal environment for comfort and energy saving is therefore mandatory.

High levels of natural daylight and adequate controllable natural ventilation are required, even though there will be times when mechanical assistance to air movement and temperature will be necessary. If possible, the installation of supplementary lighting, mechanical space heating in the pool hall and other services will be controlled automatically by a Building Management System (BMS). It is also intended that the Centre maintain throughout its life the principles of environmental sustainability, from which the architecture of the proposed development is derived.

This is to be a modern aquatic and leisure centre. The architectural forms are derived from the requirements of the brief, the shape of the available site and the levels of natural daylight and cross ventilation anticipated in facilities that are required to be environmental sustainable.

Noise

Due to the nature of the activities that patrons will participate in, the major spaces will require acoustic treatment to internal surfaces. Analysis of break-out noise during the design phase will be translated into the provision of physical devices and surfaces to provide absorption of noise within. This analysis will also include the roof mounted mechanical equipment, and expected losses of attenuation supplying or exhausting air that may have an effect on internal spaces or noise levels at the site boundary.

The spaces that would be expected to create a high level of noise from patrons include:

- Pool hall
- Gymnasium (sound system – music)
- Group Fitness space (sound system – music, and amplified voice)

Site Layout

The position of the new structure on the site has been determined primarily by consideration of the Site Analysis with the following additional objectives:

- A strong desire to retain and enhance the expansive views to the west from the existing centre and to retain as much of the existing car park as possible.
- Retain and directly relate to the existing outdoor 50 metre pool,
- Not to overshadow any adjacent residential properties
- Use the natural basin of the site to reduce the apparent overall height (and bulk) of the building.
- Give the proposed development a presence on Balgowlah Road and an entry on Kenneth Road
- Orientate the pool hall towards the north, whilst emphasising and integrating it with the existing outdoor swimming facilities

It should be noted and emphasised here that the available site area is highly restricted when the requirements of the functional brief are considered.

Functional Planning Arrangement

A fundamental decision has been taken to maintain the level of the existing centre at around RL 4.0 and to extend it into the new facility, well above the Flood Planning Level (FPL) of 3.2 AHD. The functional requirement for spectator seating adjacent the 25 metre indoor pool lead to the establishment of another internal level 1.8 metres higher than the 25 metre, programme and outdoor pools.

The functional arrangement within the proposed development was then developed from a consideration of the client's programme, availability of views and identification of which spaces could be located as part of a services "core" to the west. The facility is densely planned on multiple levels with the two storey core component containing and defining the major (pool hall) spaces. The northern side is aligned parallel to the existing 50 metre outdoor pool and the south east side is aligned roughly with Balgowlah Road, giving rise to the right angled 45 degree triangular plan form.

The internal planning of the facility is derived from important functional requirements and the exploration of the opportunities presented by the site. In simple terms, the pool hall has been located adjacent the existing outdoor 50 metre pool to maintain interaction between the 'wet' activities, while the 'dry' activities have been designated to take their place on the other (western) side of the facility. Within each of the wet and dry zones, considerations of access, safety, security, sequence of entry, usage, comfort, availability of amenities, ventilation and requirements for natural light have all contributed and informed the layouts.

The various public spaces are all fully accessible and comply with the Disability (Access to Premises – Buildings) Standards 2010. The changes in levels and access to the pools is facilitated by ramps complying with AS 1428.

For example:

- The indoor 25 metre pool is located adjacent the existing outdoor 50 metre outdoor pool in order that, when used in competitive mode, for example, heats can be run at the same time as finals using both pools. Physical and visual access between the pools is convenient for competitors, marshals and officials alike.
- The water depths are arranged to ensure that the deepest water is furthest away from the entry and approaching users for safety.
- The indoor facilities, being on the south do not overshadow the existing pool and outdoor space.
- The café/kiosk is located to serve the pool hall as well as the outdoor spaces, particularly the indoor leisure pool and programme pool where parents with smaller children will congregate, and to provide views to the leisure pool, the 25 metre indoor pool and the outdoor areas.
- Dry and wet activities are separated by levels, yet each is able to be controlled from a single entry/reception point.
- The crèche is located to be accessible immediately prior to entering the pool hall and arranged so that children are not able to see their parent(s) once they have been deposited for care.

Therefore, the form of the proposed development is comprised of the steel framed, glass clad transparent pool hall, fitted hard into the triangular shape and area of the available site and a two storey, more solid, opaque core structure containing the smaller functional spaces, such as change rooms, plant and administrative offices, crèche etc. on the ground floor and the fitness club on the first floor above, all overlooking the pool hall below. Between the two is the principal axis of the building, which extends from Kenneth Road via the AS 1428.1 complying access ramp, past the Creche, through the entry, and which overlooks the lower part of the pool hall, to the wet change facilities which serve both the indoor and outdoor pools. The axis/walkway is terminated by the spa / pamper area which is elevated slightly to overlook the leisure pool.

Views and Outlook

There are no 'vistas' to be exploited from the indoor facility, however it has been located so as to be well integrated with the outdoor facilities and spaces and to preserve and enhance the outlook from the existing outdoor pools. This outlook extends for about a kilometre to the west of the site and is essentially over continuous green space terminated only and then partially by built development to the west of Manly West Park.

The spaces which by their nature do not require an outlook, such as amenities, plant, kitchen, etc, form part of the solid core which protects the lighter glazed structure of the pool hall from exposure to the western sun.

An 'internal' outlook has been created by the lowering of the indoor 25 metre and programme pools, to accommodate the spectator seating, thus providing additional spectator viewing from the leisure pool concourse and from within the lobby and entry spaces.

The principal access to the building is by a wide AS 1428.1 compliant access ramp for the use of all patrons. The ramp is an important architectural feature which reaches out towards Kenneth Road to emphasise the entry location. This location is also emphasised by the new community change rooms, kiosk/cafe and bus shelter.

The existing location of the shared pedestrian and cycle path running along the southern boundary of Kenneth Road further serves to emphasis the entry location.

Open Space Opportunities

A consideration of the open space opportunities for the indoor facility confirmed the preference for the functional arrangement described above which provided a northerly orientation over the existing outdoor pools and their associated landscaped areas.

Ecologically Sustainable Design Strategies

The proposed development adopts environmental responsibility by employing passive design and a high level of ecologically sustainable strategies. Ecologically sustainable design is the result in part of environmentally responsible design which in turn relies on the adoption of passive design principles wherever possible. On this site opportunities are available for extensive use of passive design techniques. The adoption of ecologically sustainable design in relation to daylight and energy conservation has been used in combination with the triangular geometry of the building set out. The application of these elements gives rise to a north–facing building with an angular geometry extending across the entire development.

The main source of daylight for the pool hall is from the south through the "saw-tooth" roof structure. This structural form also provides an extensive north facing opportunity for the installation of additional solar pool water heating panels in the future.

The extensive west wall whilst substantially blank is articulated by sun shading to the windows of the fitness club in order to exclude hot afternoon sun, and to resist heat transfer. Various louvre panels are provided for ventilation in the pool water treatment and mechanical services plant rooms.

The south east wall which will only be subject to direct sun in the early summer mornings is almost all fully glazed. This will provide an exciting level of transparency to the Centre which is seen as an attraction in daytime and night time situations.

Roof Form and Pitch

The pool hall roof is of the traditional saw-tooth form with vertical glazing facing south and a north facing pitched portion of 26.57 degrees, which is designed to facilitate the use of solar heating panels, either now or in the future. The structure comprises 3.6 metre deep fabricated tubular trusses spanning east west, a distance varying from 61 metres in the northernmost bay to 11 metres in the south. As the span reduces, so too do the truss member sizes, thus expressing visually, the impact of the span variations.

Construction Materials

The proposed development has been designed using materials and technologies relevant to the twenty-first century in order to create a comfortable and environmentally sustainable facility.

The materials are to be kept neutral in colour, accented at locations yet to be determined. The prominent materials will include and expressed steel structure, concrete block walls, glass, and corrugated sheet metal. Materials and finishes to be used and their locations are set out on the drawings.

There are essentially two methods for the design of the structural steel framing for these very large spans: the first method is to use large heavy sections, probably portal frames, with large haunches and rigid connections at member junctions. Minimal bracing would be required in the opposite direction. Thus, the cost for the steel is high, but the fabrication is relatively

uncomplicated and quick. The second method is to use deeper open trusses with much smaller sections of steel. The tonnage of steel is much less, however, the complexity and number of connections is dramatically increased. The cost of steel decreases, while the cost of its fabrication increases due to complicated connections and longer labour / fabrication times.

However, there are two other items to be considered from an environmental standpoint. One is the amount of raw material being used and the second is the pollution generated by the transportation of the steel. For this reason a structural system with deep open lightweight trusses, is preferred. In addition, the scale, interest and architectural opportunities provided by the truss structure are far more appropriate for the plan shape adopted due to the shape of the site.

So far as practical and sensible, construction materials having low levels of embodied energy will be used. Investigations will be carried out into the possibility of using any recycled materials which may become available at the site.

The walls of the proposed development will employ light-coloured materials in order to reflect heat. The walls and roofs will be provided with a high level of thermal insulation and will comply with Section J of the BCA.

2.03 ACCESSIBILITY

It is of fundamental importance that an aquatic centre perhaps more than most public buildings comply with equitable access requirements. There is also a range of other issues relating specifically to pool design which will need to be addressed later in the programme. For Development Approval, the checklist below together with the Access Review at Appendix 7 is considered adequate.

This checklist below, extracted from Schedule 5 of the DCP 2013 Amendment 1 is intended to highlight key access requirements. It is a summary and does not include every requirement of the Disability (Access to Premises - Buildings) 2009 or the BCA 200

	Complies
Accessible Path of Travel (AS1428.1 Cl.5.1.2)	
The continuous accessible path of travel provides dignified and equitable access from the allotment boundary and accessible car space to the main pedestrian entrance.	**Yes**
The most commonly used and direct entrance to the building does not have any steps or trip hazards.	**Yes**
Walkways and Landings (AS1428.1 Cl.5.2 & 5.3) **Ramps and Landings**	
Walkways and Ramps are appropriate width.	**Yes**
Walkways and Ramps have appropriate gradients and length between landings.	**Yes**
Sufficient passing and turning spaces are provided.	**Yes**
Pathways are constructed to be non-slip and as smooth as possible.	**Yes**

Doorways and Entrance Lobbies (AS1428.1 Cl. 7)

Located on an accessible path of travel with sufficient clear opening width.	**Yes**	
No step at door threshold.	**Yes**	
Level circulation space on either side of the door.	**Yes**	

Sanitary Facilities (AS1428.1 Cl. 10)

Sanitary facility is unisex with separate entrance to male and female toilets.		**No**
The dimensions of the unisex toilet facility to be sufficient for a wheelchair user.	**Yes**	
For inward opening doors, be capable of being opened outwards in case of an emergency.	**Yes**	
Accessible toilet facility to be provided in accordance Part F2.4 BCA.	**Yes**	

Car Parking Facilities (AS2890.1)

Accessible car spaces to be located as close as possible to main entrance and linked by an accessible path of travel.	**Yes**	
Designed in accordance with minimum dimensions required.	**Yes**	
Accessible car spaces to be provided in accordance with Table D3.5 of the BCA.	**Yes**	

Lifts (AS1735.12)

Accessible Lift to be provided as an accessible path of travel for buildings over 3 storeys.	**Yes**	

Stairways (AS1428.1 Cl.9)

Handrails on both sides and continuous around landings.	**Yes**	
Install warning contrast strips on edge of stair nosing.	**Yes**	
Tactile indicators on the top and bottom of the stairs.	**Yes**	

2.04 ECOLOGICAL SUSTAINABLE DESIGN ELEMENTS

As stated previously, this type of facility requires a high level of passive and ecologically sustainable strategies to be employed in the design. The passive strategies employed are set out below.

Orientation

The proposed development is orientated as close as possible to true north-south, consistent with the desire achieve the best possible uniform daylighting from the south and the highest level of controllable solar access from the north. The other applicable wall, which in this case faces due west, is substantially opaque in order that the early morning and late afternoon

summer sun is excluded. Where walls face directly west and openings are still required or preferred, a high level of operable sun shading is employed. The south east facing wall will be almost fully glazed as it is only subjected to solar access in the summer months and then only till mid to late morning, after which time is will receive no sun at all.

Sun Control

The roof form of the proposed development makes use of large eaves overhangs to the north in order to exclude summer sun and selectively admit winter sun to the kiosk and seating area, the indoor 25 metre and program pool.

The pool hall has been designed to admit diffuse south daylight, which enters via the south-facing glazing and high level roof-lights of the saw-tooth roof arrangement. The quality of light achieved from this traditional roof form, used in conjunction with light internal surfaces, will only require supplementation during evening and night time operations.

A large horizontal skylight is proposed directly over the spa area to enhance its visual attraction when viewed from the entry area.

Natural Ventilation

Operable bi-folding doors have been located selectively in the north facing facade to allow natural ventilation to flow through the pool hall in the summer months. However, during late autumn, winter and early spring, these doors will remain closed, so that the desired artificial pool hall temperatures can be maintained. The internal air temperature of the hall should be kept at approximately 30 degrees Celsius, being one degree above the lap pool water temperature. This has the effect of patrons not feeling a chill when they emerge from the water.

The building envelope will be highly insulated to limit condensation and resist heat transfer. Significant openings are provided in the external walls to permit the entry of cooling and ventilating breezes in summer.

2.05 TRAFFIC, ACCESS AND PARKING

The remaining on site car parking area has been laid out in a sixty degree pattern to accommodate a total of forty nine (49) cars including four (4) disabled parking spaces and two (2) spaces for parents with prams. The number of disabled spaces provided is derived from the requirements of the BCA for both the on-site parking and the increased off-site parking components.

A requirement for increased parking and for the improvement of surrounding traffic movement will be created by the establishment of the new indoor centre. For this and other practical reasons, some traffic management measures will need to be incorporated into the local street network to ensure safer, more convenient and more equitable access to the site.

- Restriction of access to be from Kenneth Road only.
- Construction of traffic calming devices and kerb modifications to slow traffic along the Kenneth Road adjacent the site entry.
- Enlargement of the existing dedicated bus drop-off / parking zone at the Balgowlah Road school entrance to the proposed facility to accommodate three (3) State Transit buses.

Council subsequently employed Lyle Marshall and Associates to carry out a Patronage Survey and to prepare a Traffic and Parking Assessment for the site. The Report, covering on site and on street parking is included at Appendix 6.

Entrance, Exit, Loading and Unloading

It is anticipated that a small number of deliveries to the Centre will be made early each morning. In addition, pool plant, mechanical and lift service vehicles will attend periodically and a dedicated loading and unloading space will be provided adjacent the front entry off Kenneth Road for this purpose.

It is currently anticipated that the delivery of sodium chloride required for the pool water treatment system will be made at the new plant room area in the southwest corner of the site adjacent the spa pool. A dedicated platform will be provided for this purpose. A bunded receiving area and other safety measures required by the regulations under the Dangerous Goods Act 1975 will not be required as there will be no deliveries of sodium hypochlorite.

Car Parking

Manly Council does not have specific guidelines or controls applicable to the provision of car parking for recreation centres, nor are there any guidelines from the Roads and Maritime Services Authority NSW. Accordingly, reference is made to a Comparative Analysis of Car Parking Requirements for Aquatic Centres in New South Wales, previously prepared by TompkinsMDA.

TompkinsMDA Architects recommend that the number of car parking spaces provided for the Manly Andrew "Boy" Charlton Swim Centre Redevelopment should be based on the estimated number of visitors and the peak demands generated by the proposed facility and/or a rate of 1 space per 25 square metres of gross building area.

This recommended rate of provision is comparable with a rate of 1 space/32m2 at Mount Annan Leisure Centre, 1 space/30m2 provided at Hurstville Aquatic Centre, both of which are known to be inadequate and 1 space/27m2 at Emerton Aquatic Centre which is thought to be adequate.

Council subsequently employed Lyle Marshall and Associates to carry out a Patronage Survey and to prepare a Traffic and Parking Assessment for the site. The Report, covering on site and on street parking is included at Appendix 6.

2.06 STORMWATER MANAGEMENT

Existing Site Stormwater Arrangements

The site is subject to flooding. The existing site catchment discharges to Manly Lagoon. On-site detention (OSD) is therefore not provided.

Proposed Site Stormwater Arrangements

The site stormwater system will entail the collection of roof water via a symphonic drainage system discharging to series of downpipes, which along with surface water will be conveyed by in-ground drainage pipes, kerbs inlet pits and stormwater inspection pits. The system will be connected to the existing stormwater system in the car park, from where it will be conveyed to a kerb inlet pit and a 375 mm diameter line in Kenneth Road.

Soil Erosion

Soil erosion will be prevented by providing appropriate means of stormwater disposal. Soil erosion will be mitigated during construction by appropriate site management techniques.

The proposal involves a small amount of cut (from pool excavations) in order to create a predominantly single-level building. Any residual slope will be within limits that prevent erosion and they will be well landscaped to ensure soil stability.

There will be a gentle fall in the external areas towards the existing grated stormwater pits to control the volume of surface run-off.

The stormwater management system and soil erosion control methodology is shown on the drawings accompanying the Development Application and numbered C00, C02, C03 and C04.

2.07 MECHANICAL SERVICES

General

Air conditioning and mechanical ventilation will be provided for the various spaces as set out below.

Air conditioning:
- gymnasium and group fitness room
- creche
- administration areas

Mechanical supply ventilation with heating will be provided for:
- main pool areas
- kiosk
- Spa Suite

Mechanical exhaust ventilation will be provided for:
- toilets and shower areas
- kiosk

All systems will be designed to comply with the requirements of all relevant regulations including Australian Standard AS1668.2-1991.

Air Conditioning Systems

Air conditioning will be provided by individual, reverse-cycle, split systems for each space

This has the following advantages:

- Individual systems can be matched to the requirements of the space served. This eliminates unsatisfactory selection and the potentially higher operating costs of general systems.
- Operating times can be matched to the occupancy levels of individual spaces.

The main equipment will be located in the dedicated plant room with shielding to ensure noise from the plant is within allowable limits.

The air handling units will generally be located in the ceiling space adjacent to the room served. Fresh air will be drawn through the roof.

Mechanical Heated Supply Ventilation

The supply air system for pool areas will be located within the main plant room and on the roof. The system will be arranged with masonry ducts below floor level to discharge air vertically up the glazing to minimise condensation. A separate system will be provided for the kiosk and to prevent odours from the pool entering the space.

Heating for the supply ventilation system will be provided from the main gas heating plant. The heating plant will be sized to maintain the ambient air temperature in the pool hall at 1^{o}C above the water temperature of the indoor 25m pool. The roof structure has been designed to be conducive to the future installation of high performance evacuated tube solar panels. Pipework will be arranged to allow for this future installation with a minimum of redundancy.

Mechanical Exhaust Ventilation

Mechanical exhaust ventilation will be provided for all toilet and shower areas. Exhaust outlets will generally be located above the individual fixtures and cubicles to ensure thorough extraction of air which will then be discharged above the roof. Make up air will be drawn from the adjacent space.

Pool Heating

Investigation will be undertaken into alternative systems for the heating of the pool water, to include the following options:

- direct gas-fired boiler plant
- heat reclaim

A direct gas-fired boiler plant is the most economical to install but is more expensive to operate.

The heat reclaim system is the most expensive to install and the cheapest to operate. The system works on the principle that it recovers the heat from the pool enclosure which occurs due to heat loss from the water. It re-uses this heat to provide the majority of the pool water heating.

It has further advantages in that it cools and dehumidifies the pool enclosure.

2.08 BCA COMPLIANCE

The building is categorised as Class 9b under the Building Code of Australia and the design will meet all the guidelines set out for that classification of building.

2.09 LANDSCAPE

The landscaping concept design is shown on drawings number LD01

The proposed Landscape design responds to both the context of the site within Manly, the nature of the project, and the character of the area.

The proposed planting species draws on an Australian native palette for upper tree canopy cover, middle level mass planting, and lower level planting of grasses and ground covers.

The carpark entrance from Kenneth Road is defined with a row of mid scale evergreen Water Gum `Luscious', to provide a sense of entry, and shade to the carpark. Under planting of Lomandra` Tanika' provides low dense habitat for the long nosed bandicoot, as does mass planting of Dianella to the area between the main entrance ramp and the playing fields. Evergreen planting of the native coastal Tuckeroo (Cupaniopsis anacardioides) provides a sense of entry adjacent to the ramped access.

Between the carpark and the pool deck, gabion structures on two different levels take up the difference in level of around 1.5 metres, and in association with mass planting of Gymea Lily (Doryanthes excelsa), provide both a pleasant view from the carpark, and privacy from the pool deck area. A black chainmesh security fence would be located within this zone.

Along the Balgowlah Road frontage, the proposed planting reinforces the existing `tropical water feel' of the existing planting, with the use of Bangalow palm trees of various heights and sizes to allow views through the glass wall of the building, both in and out. Underplanting of low native yellow Guinea flower (Hibbertia scandens), and native violets (Viola hederaceae), provide sweeping ground planes of different textures and colour.

In order for the proposed development to be constructed, an unavoidable number of significant trees will need to be removed. The new landscape planting will however, complement the new building works and provide a setting appropriate to its use and form.

3 MATTERS FOR CONSIDERATION UNDER SECTION 79C (1) OF THE ACT

Section 79C(1) of the Environmental Planning and Assessment Act requires that in determining a development application, the consent authority is to take into consideration the following matters as are of relevance to the application.

This part sets out the matters for consideration under the Act and includes where appropriate extracts from the relevant documentation. This part shows the way in which the environmental impact of the development proposal has been considered in relation to those requirements and the steps taken to protect the environment and to mitigate harm.

For convenience relevant portions of the planning documentation are included below and shown in italics.

3.01 PROVISIONS OF ANY ENVIRONMENTAL PLANNING INSTRUMENT

Introduction

The site is zoned RE1 Public Recreation under the Manly Local Environmental Plan 2013

1 Objectives of zone

• To enable land to be used for public open space or recreational purposes.
• To provide a range of recreational settings and activities and compatible land uses.
• To protect and enhance the natural environment for recreational purposes.
• To protect, manage and restore areas visually exposed to the waters of Middle Harbour, North Harbour, Burnt Bridge Creek and the Pacific Ocean.
• To ensure that the height and bulk of any proposed buildings or structures have regard to existing vegetation, topography and surrounding land uses.

2 Permitted without consent

Nil

3 Permitted with consent

Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Car parks; Charter and tourism boating facilities; Child care centres; Community facilities; Depots; Emergency services facilities; Environmental facilities; Environmental protection works; Flood mitigation works; Information and education facilities; Jetties; Kiosks; Marinas; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Research stations; Respite day care centres; Restaurants or cafes; Roads; Take away food and drink premises; Water recreation structures; Water recycling facilities; Water reticulation systems; Water

storage facilities

4 Prohibited
Any development not specified in item 2 or 3

The proposed development, being an indoor aquatic and fitness facility is compatible with the required use of recreational purposes and contributes to the range of recreational settings and activities. The facility contributes to and enhances the natural environment for recreational purposes

The height and bulk of the proposed building and structures has regard to the scale of the existing vegetation in particular, the adjacent eucalypts. The topography, being relatively flat is appropriate to the horizontal scale of the building and the surrounding land uses, being generally residential are all elevated high above the site and the proposed building.

A copy of the Planning Certificate issued under Section 149(2) of Environmental Planning and Assessment Act 1979 is attached at Appendix 1.

3.02 PROVISION OF ANY DEVELOPMENT CONTROL PLAN(S)

According to the S149(2) Certificate the relevant Development Control Plan (DCP) is Manly Development Control Plan 2013 Amendment Number 1

On review, the DCP is not particularly relevant to the proposed development, however the principles and processes outlined in the DCP have been complied with.

The DCP requires Government owned buildings to comply with the provisions of Design for Access and Mobility AS 1428.2 Enhanced and Additional Requirements – Buildings and Facilities, rather than AS1428.1.

Notwithstanding the above, an exemption is sought from compliance with the provisions of Design for Access and Mobility AS 1428.2 Enhanced and Additional Requirements – Buildings and Facilities in relation to the maximum allowable length of 1:14 ramp grades. The reason for this request is that the 6 metre maximum length of a 1:14 grade ramp (AS1428.2) is unable to be accommodated and approval for the maximum length of 9 metres (AS1428.1) is requested.

3.03 IMPACT OF DEVELOPMENT

The environmental impacts on the natural environment and on the built environment have been considered in detail throughout this Statement of Environmental Effects. There are no impacts which would prevent the Development Application being approved.

The social and economic impacts in the locality have been considered and are not of negative significance. The proposed development will make a positive contribution to the social and economic circumstance of the people of Manly.

3.04 SUITABILITY OF THE SITE FOR DEVELOPMENT

Given existence of established swimming pools on the site, and that the primary purpose of the proposed development is to improve and modernise these facilities, particularly in terms of health and safety, it can be seen that the site is well suited for this nature of development.

The facilities will reinforce existing links to LM Graham Reserve to the west. During construction, the site shall be sufficiently insulated to reduce the extent of break-out noise at the residential boundary. No overshadowing occurs to the residential properties to the south, as set out elsewhere in this Statement of Environmental Effects.

3.05 SUBMISSIONS

The Development Application is to be dealt with in accordance with the Act. Any submissions will be dealt with according to Council policy and the development will be considered on its merits. The submissions will be responded to by Council Officers as they are received.

3.06 PUBLIC INTEREST

The development application will be advertised and neighbouring owners notified in accordance the requirements of the Act. There are no neighbours who will be significantly and unreasonably affected detrimentally by the development. It is unlikely therefore that the public interest will not be served.

4. CONCLUSION

There are no detrimental environmental effects created by the development. The design will make a positive contribution to the architectural character and ecological sustainability of Manly Local Government Area. The proposed development will be a further example of the diversity of which the community is proud and will contribute significantly to the understanding and appreciation of ecologically sustainable design principles in the local area. The effects of the development include:

- Provision of a significant new public leisure facility.
- No reduction in existing public facilities.
- A significant widening of the existing age and demographic attraction of the whole facility
- Provision of facilities with equity of access.
- Maintain community ownership of land.
- Positive visual impact.
- Strengthening of pedestrian and cycle pathway network.
- Increased access and convenience for LM Graham Reserve
- Acceptable increase in vehicular traffic.
- Incorporation of many existing trees in new and extensive landscaping.

The development is allowable under the Local Environmental Plan and will have a positive impact on the environment. The Development Application should therefore be approved.

Michael Davies
TompkinsMDA Architects Pty Ltd
1 August 2013 (revised 6 November 2013 and again 12 December 2013)

APPENDICES

APPENDIX 1
PLANNING CERTIFICATE UNDER SECTION 149

APPENDIX 2
GEOTECHNICAL REPORT

APPENDIX 3
PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT

APPENDIX 4
STORMWATER MANAGEMENT AND SOIL EROSION PLAN
(PROVIDED SEPARATELY)

APPENDIX 5
HYDROGEOLOGICAL REPORT

APPENDIX 6
TRAFFIC AND PARKING ASSESSMENT AND PATRONAGE SURVEY

APPENDIX 7
ACCESS REVIEW REPORT

APPENDIX 8
WASTE MANAGEMENT PLAN

APPENDIX 1

PLANNING CERTIFICATE UNDER SECTION 149

APPENDIX 2

GEOTECHNICAL REPORT DATED 16 AUGUST 2013 REFERENCE 26655ZH2rpt
JK GEOTECHNICS

APPENDIX 3

PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT
EIS

APPENDIX 4
(Provided separately)

STORMWATER MANAGEMENT AND SOIL EROSION PLAN
GEOFF NINNES FONG AND PARTNERS

APPENDIX 5

HYDROGEOLOGICAL REPORT
JK GEOTECHNICS

APPENDIX 6

TRAFFIC AND PARKING ASSESSMENT AND PATRONAGE SURVEY
LYLE MARSHALL AND ASSOCIATES PTY LTD

APPENDIX 7

ACCESS REVIEW REPORT
MORRIS GODING ACCESSIBILITY CONSULTANTS

APPENDIX 8

WASTE MANAGEMENT PLAN
MANLY COUNCIL

SUPPORTING DOCUMENTATION

1310-DA101	**Survey Plan**
1310-DA102	**On Site and Off Site Parking Plan**
1310-DA103	**Site Analysis Plan**
1310-DA104	**Site Plan and Lower Ground Floor Plan below RL 4.2 (includes kiosk change building)**
1310-DA105	**Lower Ground Floor Plan RL 4.2** **Upper Ground Floor Plan RL 5.4**
1310-DA106	**First Floor Plan RL 9.00 and Roof Plan**
1310-DA107	**Sections (North and West) Elevations (North, South, East and West)**
1310-DA108	**Shadow Diagrams**
1310-DA109	**Landscape Plan**
1310-DA 110	**Access Ramp Preliminary Detail**

Stormwater Management Plan

Erosion Control Plan