Statement of Environmental Effects

Go Bananas Ropes Park, St Marys

August 2014

urbis

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Stephen White
Associate Director	Danielle Pinkerton
Consultant	Skye Playfair Redman
Job Code	SA5499
Report Number	SEE Version 1

URBIS
Australia Asia Middle East
urbis.com.au

TABLE OF CONTENTS

FIGURES:

1 Introduction

The Go Bananas Family Entertainment Centre (the Applicant) at the St Marys Rugby League Club is seeking to expand their existing operation. The Applicant is proposing to incorporate an Aerial Adventure Park (AAP) which will occupy an area of approximately 570sqm being approximately 11 metres by 52 metres immediately north of the existing outdoor play area.

Go Bananas St Marys is the largest purpose built Family Entertainment Centre in Australia catering for children 0-14 years of age and has been operating since 2010. The centre currently provides slides, multiple play areas for different age groups, themed party rooms, jumping castles, a café and other children's entertainment equipment.

The proposed addition of the AAP will provide entertainment facilities for the St Marys community and the broader area, suitable to all ages and abilities.

This Statement of Environmental Effects (SEE), prepared by Urbis on behalf of the Go Bananas Family Entertainment Centre, includes the following components:

- Description of the site and surrounds;
- Description of the proposal;
- Assessment of the proposal under Section 79C of the *Environmental Planning and Assessment Act 1979*; and
- Discussion of key planning considerations and impacts of the proposal.

1.1 PROPOSED WORKS

This proposal is seeking approval for the following additions:

- Construction of an aerial adventure course including steel poles, anchor blocks, pod stations, platform decks and stairs;
- New flooring in the area below and immediately surrounding the aerial adventure course with sections of timber, rubber, and turf;
- Shade sails to cover portions of the AAP;
- New fencing around the perimeter of the AAP;
- New amenities kiosk containing workspace and seating for 1-2 staff members, storage racks for safety equipment, and space to distribute safety equipment to the patrons through an opening in the eastern wall;
- Foyer extension; and
- Modifications to existing Go Bananas awning.

1.2 RECENT DEVELOPMENT APPLICATIONS

As part of SMRLC's efforts to realise its long term vision, a number of applications have been lodged to Penrith Council. These are summarised below. This SEE supports a development application which is entirely separate to previous applications. Existing site conditions are addressed in this report, any future and proposed works that form part of separate DA's are not addressed.

DA 10/1141 - Training Field Relocation

Consent for deferred commencement was granted by Council in 2011 for relocation of the training field to the eastern side of the existing stadium and removal of an area of Cumberland Plain Woodland (CPW).

DA 11/0470- Masters Home Improvement Store

Planning consent was granted by Council in 2012 for Torrens Title Subdivision of the St Marys Leagues Club land. The subdivision separated the north western corner of the site for development as a Masters Store. This approval included a new entry and access road and roundabout in the north western corner of the Club site. This development is now complete.

DA 13/1018- Remediation Works

This development application for site remediation works for a stockpile area located along the eastern edge of the Club site, on the Boronia Road Frontage (shown in figure below), was approved in February 2014. It is noted the works proposed by Go Bananas are outside this area.

FIGURE 1 - LOCATION OF STOCKPILE WITHIN SUBJECT SITE

DA13/0362- Outdoor Family and BBQ Court

The development application was for the re-design and expansion of the northern outdoor family and BBQ court. Approval was granted in 2013 and the project is currently under construction.

DA13/1196- Fitness Centre and Motel

In October 2013 an application was lodged seeking consent for a two-storey fitness centre including a café, pools and play area, and two three-storey motel buildings. New internal parking and circulation areas for pedestrians and vehicles, extensive landscaping and signage are also proposed. The location of the proposed buildings is to the east of the existing Club buildings. The works proposed by Go Bananas are not within the area affected by the Fitness Centre and Motel DA.

This application is currently under assessment by Council.

DA14/0932 – Western Foyer Expansion

Application for the expansion of the western foyer and Level 1 function centre addition, along with associated parking adjustments and landscape improvements. This application is currently under assessment.

1.3 SUPPORTING DOCUMENTS

This report is to be read in conjunction with the following supporting documentation:

- Pre-DA meeting minutes – Appendix A;
- Accessible Facilities Map – SBA Architects and PWC, Appendix B;
- Acoustic Report – Acoustic Logic, Appendix C;
- Architectural Drawings including Materials and Finishes, and Photomontage – Curtin Architects and TouchCloud; Appendix D;
- BCA Report – BM+G, Appendix E;
- Overland Flow and Drainage System Impact Report – TTW, Appendix F;
- Structural Design – Partridge, Appendix G;
- Key Operational Considerations – Touch Cloud, Appendix H;
- Lighting Design and Compliance Statement– Electrolight, Appendix I;
- Penrith Development Control Plan 2010 Compliance Table – Urbis – Appendix J;
- Traffic / Parking Study – McLaren traffic Engineering, Appendix K;
- AAP Safety Statement – Touch Cloud, Appendix L:
- Supporting documents from previous applications, Appendix M;
    - Bushfire Report - FPA Australia
    - Flood Impact Statement – Worley Parsons.

2 Site and Surrounds

2.1 THE SUBJECT SITE

The subject site (the site) is located on the corner of Forrester Road and Boronia Road. The site has a total land area of approximately 23 hectares (See Figure 2). The site is described as Lot 23 of DP 1142130. The site is owned by St Marys Rugby League Club and provides a range of public recreational activities.

The existing facilities on the site include:

- Club premises with dining, gaming, administration offices and car parking;
- Rugby League Stadium and separate training field;
- Saints Sports Lounge;
- Go Bananas Family Entertainment centre;
- Bottle-O store; and
- Sports training fields.

The western portion of the site is currently cleared and developed for the existing Club building and associated parking. The eastern portion of the site is largely undeveloped and includes a conservation area (Cumberland Plains Woodlands). The topography of the site has a slight slope to the east towards Ropes Creek which runs from south to north-west generally parallel to the site boundary.

2.2 SURROUNDING CONTEXT

The key characteristics of the surrounding context of the site are:

- The suburb of St Marys is located at the eastern boundary of Penrith LGA and is bisected by Forrester Road. The Club is located approximately 1.5 kilometres north of St Marys town centre;
- West of the subject site across Forrester Road is an existing industrial area;
- South of the site across Boronia Road is an established residential area, including Chifley College;
- The northern adjacent lot has recently been developed as a Masters Home Improvement centre;
- East of the site is a natural open space corridor running along Ropes Creek and contains Cumberland Plains Woodlands;
- A McDonald's restaurant to the south west of the site (on the south eastern side of the intersection between Forrester Road and Boronia Road);
- The site is located north east of a major roundabout. Fronting this roundabout is a Macdonald's restaurant and Drive-Thru (south east), a Seven-11 (south west), and undeveloped land (north west); and
- The interface between these surrounding land uses and the site is diluted by the width of Boronia and Forrester Roads and associated generous verges.

URBIS
SEE FINAL 29082014

FIGURE 2 – ST MARYS RUGBY LEAGUE CLUB SITE AND SURROUNDS

3 The Proposal

3.1 OVERVIEW

The proposed AAP consists of a series of linked 'crossings' which are crossed at height (usually between 2 and 15m) by guests who are securely fitted into standard conforming fall prevention/arrest harnesses and lanyards.

Crossings include playground-like challenges like suspension bridges, small zip Lines, and cargo net traverses. AAP activities also include controlled free-falls, giant swings and long zip lines.

The proposal comprises the addition of an AAP directly north of the existing Go Bananas facility. The facility reaches a maximum height of 22m and requires a total of 1,459sqm of floor area, made up of:

- Kiosk: 33sqm
- Lobby extension: 18sqm
- Existing outdoor area: 810sqm
- Extended outdoor area: 598sqm

The facility will accommodate a maximum of 150 people at a time, with a ropes course capacity of 30 people at any one time. The location of the proposed works is indicated in the figure below.

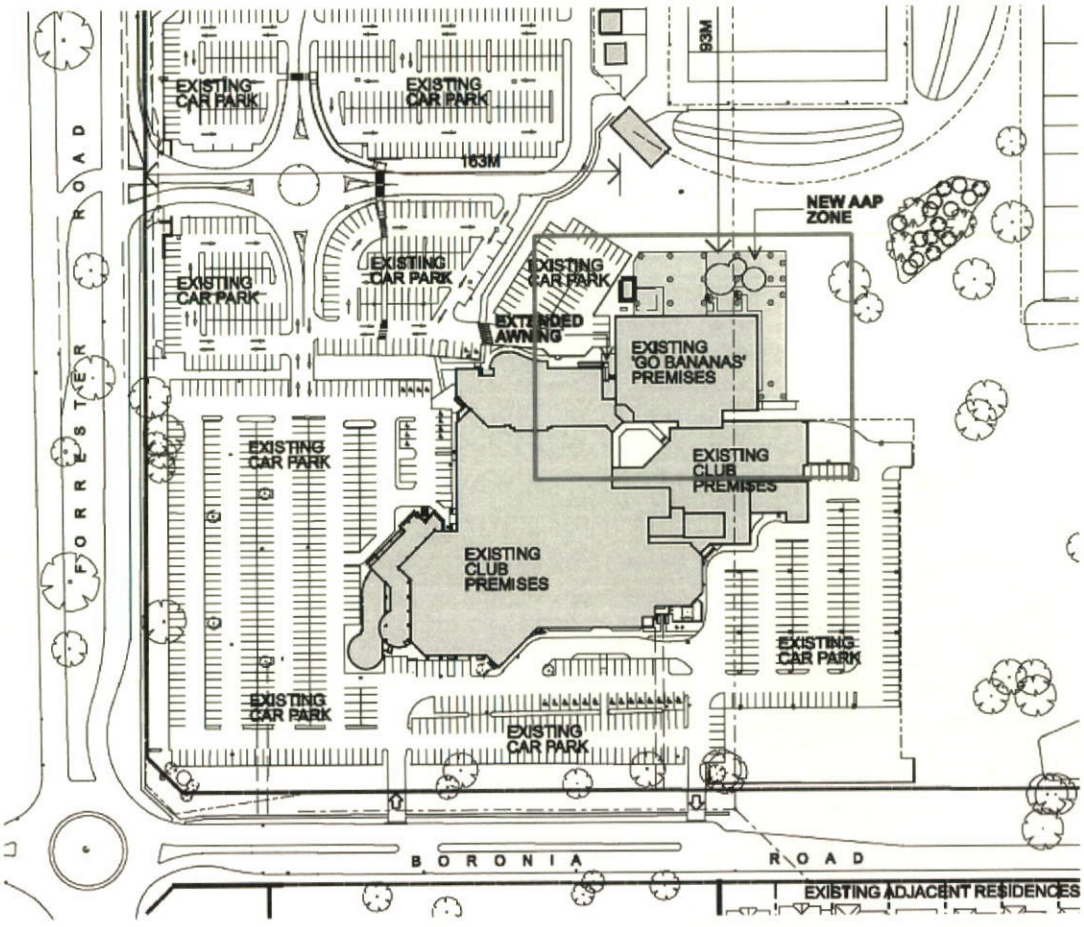


FIGURE 3 – LOCATION OF PROPOSED WORKS

The AAP will contribute to the existing outdoor entertainment opportunities in St Marys for all age groups and all abilities. The facility is the first of its kind in the area, and will importantly provide an aerial adventure course that is non-discriminatory with regards to disabilities.

3.2 BUILT FORM AND MATERIALS

Touchcloud have designed the facility and selected the materials to achieve a safe and visually interesting finished form. The proposed works involve:

- New flooring with sections of timber, wet pour rubber, turf and crushed sandstone;
- Flooring for outdoor area adjoining the eastern wall of the Go Bananas building;
- Shade sails to cover portions of the AAP;
- New fencing around the perimeter of the AAP;
- Installation of ropes course including:
    - Steel columns, beams and trusses (7 grounded, 6 suspended);
    - Activity ropes;
    - anchor blocks;
    - Pod stations over 4 levels;
    - Platform decks;
    - 80 activity elements;
    - X2 spiral staircases from ground to level 1, and ground to level 2;
    - Zip line;
- New amenities kiosk containing workspace and seating for 1-2 staff members, storage racks for safety equipment, and space to distribute safety equipment to the patrons through an opening in the eastern wall;
- Modifications to existing Go Bananas awning; and
- Foyer extension.

The figure below provides an indication of the interaction of the abovementioned features.

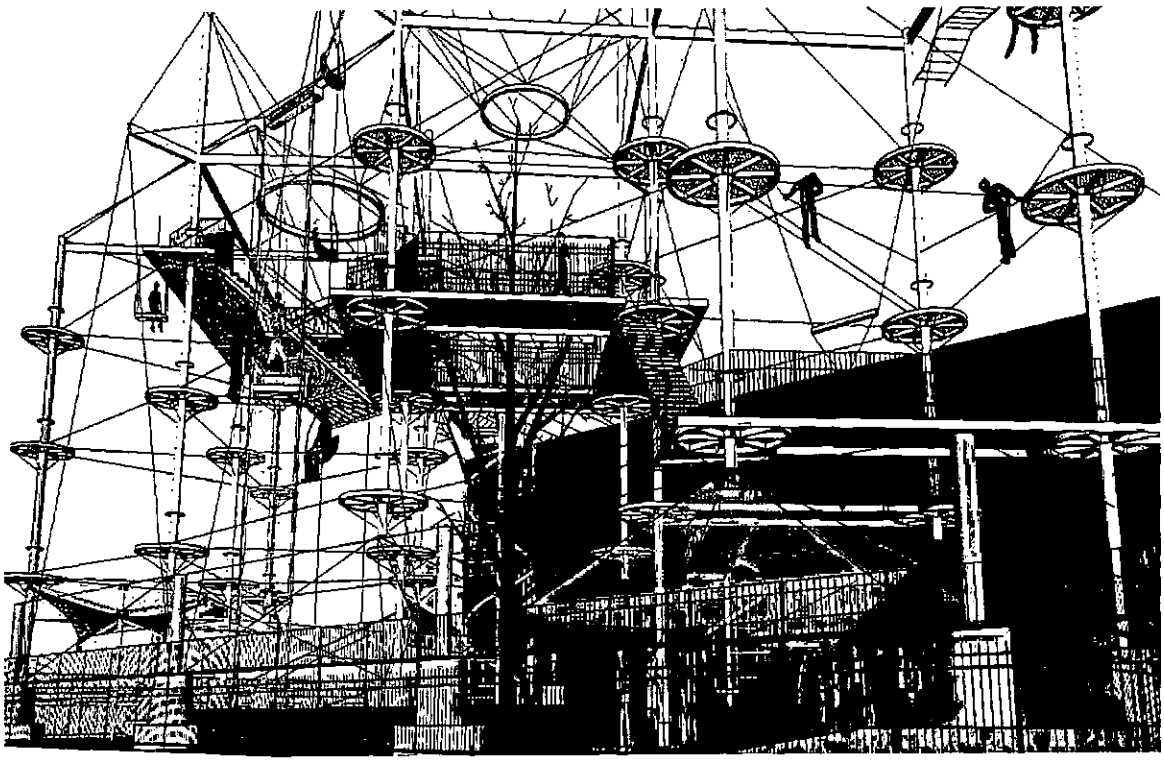


FIGURE 4 – RENDERING OR PROPOSED AERIAL ADVENTURE COURSE

Further details on the materials and finishes can be found in the Materials and Finishes Schedule and Sample Board, which are provided in Appendix D. Further information on the structural specifications is provided in Touch Clouds Key Operational Considerations report provided in Appendix H.

3.3 OPERATIONAL DETAILS

The facility is expected to employ 2 full time and approximately 8 part time staff during operation.

The facility will operate between the following hours:

- Summer: 9am – 8pm
- Winter: 9am – 6pm

The ropes course has the capacity for 30 people at any one time, with a turnover time of 30 minutes. With each group of 30 staying 2-2.5 hours, the facility could have up to 150 people on the premises at any one time.

The following security measures will be put in place to secure the site:

- Pool-standard perimeter fence with locked gates;
- Out of hours ambient lighting;
- Movement sensor flood lighting; and
- Anti-climb measures at the base (non-negotiable platforms).

Further details are provided in the Key Operational Considerations document in Appendix H.

3.4 TRAFFIC AND PARKING

McLaren Traffic Engineers have carried out a parking and traffic assessment and prepared a report examining the traffic and parking implications of the proposed works (provided in Appendix K).

McLaren have considered the proposed parking accumulation as a result of DA13/1196 (fitness centre and motel) and DA14/0932 (western foyer expansion) and assessed the projected parking requirements of the Club, and this development. The report concludes the following:

> *The subject development provides 1190 car spaces which therefore represents a shortfall of 88 parking spaces should all developments be approved, constructed and occupied. The staged nature of the site's development allows for the actual operation to be observed and parking rates recalculated after part occupation. With this is mind it is recommended to allow the motel, fitness centre, aerial ropes centre and stage 1 expansion of the club to operate, at which time the development is projected to require only 1138 spaces. Then the actual parking demand can be compared to current projections in case the development with 1190 spaces sufficiently services the site including stage 2 without additional parking being constructed.*

As such, it is considered appropriate to assess the parking demand at a later stage to accurately respond to parking requirements on the site.

3.5 ACCESS

The proposed is specifically designed to accommodate people with disabilities, the circulation areas of the facility are completely accessible, and facilitated access to a selection of at-height challenges can (with prior arrangement) be achieved through the application of specialised equipment and rigging techniques.

The following strategies have been put in place to ensure complete accessibility of the park:

- 1:14 gradient ramps;
- Low set booking, reception, and café desks;

- Inclusive seating arrangements;
- High contrast surface level changes; and
- Provision of specialised adaptive equipment and rigging systems.

The location of accessible amenities and accessible parking are indicated in the Accessible Facilities Map provided in Appendix B.

Touch Cloud provides further information on the accessibility of the facility in their Key Operational Considerations report provided in provided in Appendix H.

The AAP will be accessed via the existing DDA compliant entry of the Go Bananas building, which has been proven to be compliant with the applicable accessibility requirements of the Building Code of Australia (BCA), *Disability (Access to Premises - Buildings) Standards 2010* and AS 1428: Design for Access and Mobility via previous development consent by Council.

A detailed DDA report will be submitted at CC stage.

4 Planning Framework

This section of the SEE addresses the proposal's compliance with relevant planning controls as required under Section 79C of the *Environmental Planning and Assessment Act 1979*, including:

- *State Environmental Planning Policy No. 55 – Remediation of Land;*
- *State Environmental Planning Policy No. 64 – Advertising and Signage;*
- *Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean;*
- *Penrith Local Environmental Plan 2010; and*
- Penrith Development Control Plan 2006.

4.1 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND.

A Soil Sampling Stage 1 Preliminary Site Investigation was undertaken as part of DA13/1018. This investigation concluded that subject to validation of the stockpile footprint following completion of the Stockpile Remediation Strategy (as per DA 13/1018 above) the site will be suitable for the proposed land use.

As the proposed works will not interfere with this stockpile, no contamination is anticipated or environmental investigation required.

4.2 STATE ENVIRONMENTAL PLANNING POLICY NO. 64 – ADVERTISING AND SIGNAGE

A separate application will be lodged for the proposed signage.

4.3 SYDNEY REGIONAL ENVIRONMENTAL PLAN NO. 20 – HAWKESBURY NEPEAN

The aim of SREP20 is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.

Clause 11(14) states that consent is required for recreational facilities on land:

> *(a) that adjoins the river or a tributary of the river, or*
>
> *(b) that is flood prone land.*

The proposed works are setback further from Ropes Creek than the existing rear building line. Given this distance and the location of the proposed on an existing paved area, no impact on the wider Hawkesbury-Nepean River system is anticipated.

While the northern region of the subject site falls within the 1:100 year flood plain for the Ropes Crossing flooding scenario and catchment flooding scenario, the proposed AAP location will not be affected.

4.4 PENRITH LOCAL ENVIRONMENTAL PLAN 2010

The principle local planning instrument is the Penrith Local Environmental Plan 2010 (PLEP). An assessment of the proposed against the PLEP is provided below.

4.4.1 ZONE

The site is located within the RE2 Private Recreation zone. The proposed addition qualifies as 'Recreation facilities (outdoor)', a use listed as permissible with consent.

The objectives of the RE2 Private recreation Zone are:

- To enable land to be used for private 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.

The proposal supports these objectives as it provides an additional recreational activity compatible with the existing Club and Go Bananas facility. The proposal will not have a negative impact on the natural environment given the work will be located on an existing developed area, and a considerable distance from Ropes Creek.

4.4.2 HEIGHT

There is no height control prescribed in the PLEP on the site. The application involves a climbing frame with a maximum height of 22m. This height is considered suitable given the facility is highly transparent with no perceivable bulk (see Figure 5 below). The sites separation from surrounding land uses and overall scale, the scale of the adjoining Masters development, and absence of a height control, further justify the proposed height.

FIGURE 5 - PHOTOMONTAGE OF PROPOSED AERIAL ADVENTURE PARK

This photomontage is also provided in Appendix D.

4.4.3 FLOOD PLANNING

A Flood Statement was prepared by Worley Parsons for DA14/0932 which contained images of the areas on the site affected by various flooding scenarios. It can be seen by these images the proposed location for the AAP is not affected by the flooding scenarios, therefore the proposal will not increase risk of damage by flood to people or property. Worley Parsons report is attached at Appendix M for reference.

4.4.4 PROTECTION OF SCENIC CHARACTER AND LANDSCAPE VALUES

The location of the proposed works is adjacent to, but not within the area identified as having 'Landscape and Scenic Values' by Council (see figure below).

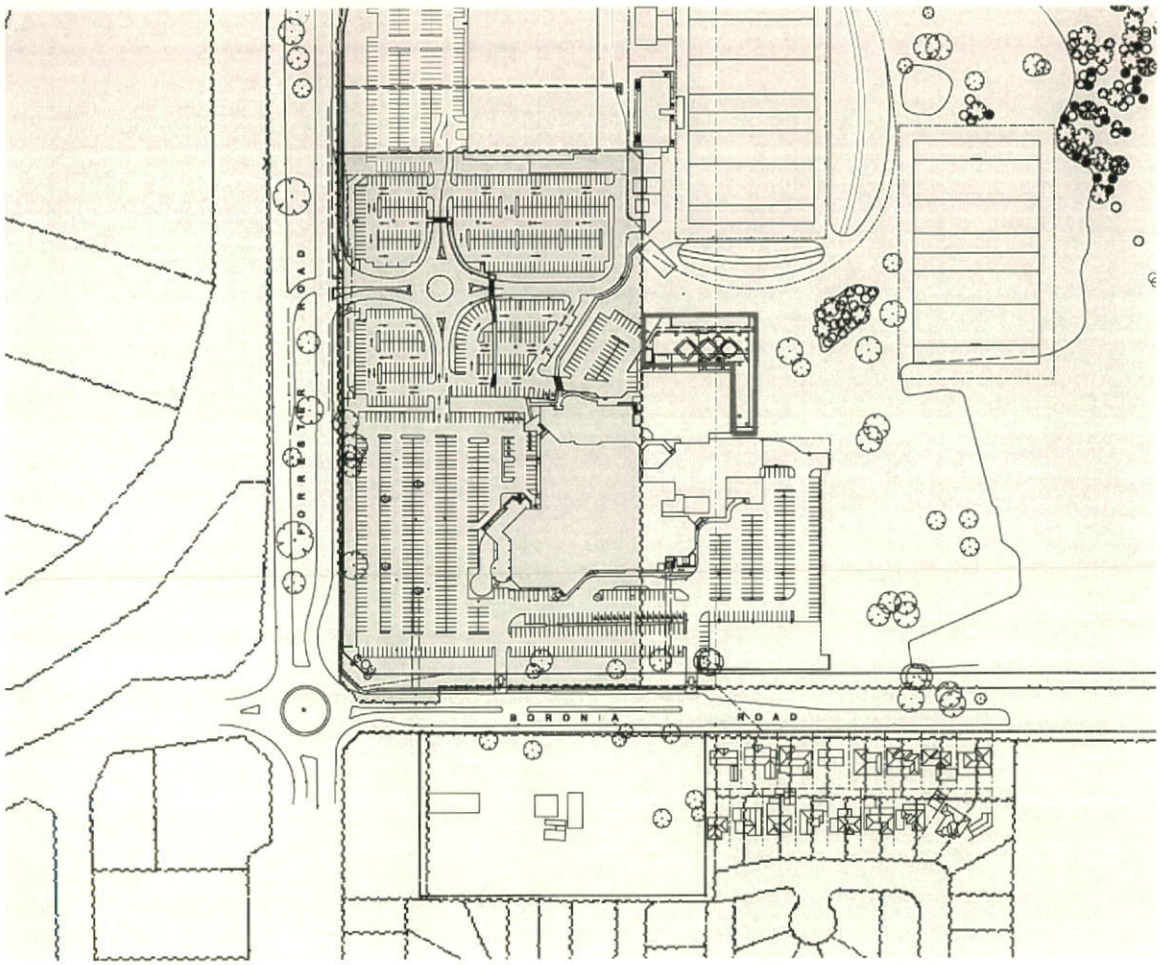


FIGURE 6 - LOCATION OF LAND IDENTIFIED AS HAVING LANDSCAPE AND SCENIC VALUE

The proposed foyer extension will not be visible from the public domain, and will not in any way interfere with landscape and scenic view.

Regardless, a photomontage to assist in the assessment of impact is provided in Appendix D. This photomontage, pictured above in Figure 5, demonstrates the development will have minimal visual impact from Forrester roads and the public domain on account of the transparency of the facility.

The proposed AAP when finished will be setback further from Forrester Road than the existing front building line, and have a maximum height of 22m. As such, the overall impact of the building will be minimal.

The existing verge and car park landscaping will also assist in creating a visual buffer from the public domain.

4.5 DRAFT ENVIRONMENTAL PLANNING INSTRUMENTS

None applicable.

4.6 ANY PLANNING AGREEMENT

None applicable.

4.7 THE REGULATIONS

None applicable.

4.8 DEVELOPMENT CONTROL PLAN

The *Penrith Development Control Plan 2008* provides detailed design guidelines to support the controls contained in the PLEP. Compliance with the relevant DCP controls is demonstrated in the table provided in Appendix J.

5 Assessment of Impacts

5.1 IMPACTS ON NATURAL ENVIRONMENT

The proposed works do not involve excavation or the removal of any trees, are adequately distanced from the Cumberland Plains Woodlands conservation area, and will not result in a reduction in deep soil area. Given the above, and considering the works will take place on an existing hard paved area, there will be no adverse impacts on the natural drainage and stormwater patterns on the site.

5.1.1 FLOOD MANAGEMENT

While the northern region of the subject site falls within the 1:100 year flood plain for the Ropes Crossing flooding scenario and catchment flooding scenario, the proposed AAP location will not be affected. Therefore the proposal will not increase risk of damage by flood to people or property.

5.1.2 OVERLAND FLOWS

Given the proposed AAP is a frame, it will not prevent overland flows from passing over the facility. TTW have prepared an Overland Flow and Drainage Impact Assessment Report, which has been provided in Appendix F.

5.1.3 STORMWATER AND SEDIMENT CONTROL

The location of the proposed works is predominantly hard paved. The use of grass as a flooring finish over parts of the AAP will increase the potential for natural infiltration. Given this, the proposed development will not have an adverse impact on stormwater and sediment movement on the site.

5.1.4 FLORA AND FAUNA

The proposed works do not involve the removal of any trees and are adequately distanced from the Cumberland Plains Woodlands conservation area so as to not have an impact on this habitat.

5.1.5 BUSH FIRE

Bushfire Planning Services undertook an analysis regarding the site's vulnerability to bushfires for DA14/0932. The findings of their analysis are summarised in their statement which accompanies this application.

The statement concluded the mapped bushfire hazard on this site was well over 100m from the proposed foyer. As such, it is assumed the proposed AAP will similarly be outside the mapped hazard zone and the construction requirements of AS3959 2009 are not considered applicable to this application. The Bushfire Statement has been provided for reference in Appendix M.

5.1.6 NOISE

Acoustic Logic has prepared an Acoustic Report which assesses the potential environmental noise impacts of the proposal. The report concludes that the primary source of noise will be from patron voices.

The nearest potentially affected residential properties are those on Boronia Road. In order to ensure acceptable noise standards, Acoustic Logic recommend a maximum music volume and a further review of any mechanical plants at CC stage.

The Acoustic Report is provided in Appendix C.

5.1.7 WATER

The proposed will utilise existing water facilities.

5.2 IMPACTS ON BUILT ENVIRONMENT

5.2.1 BUILT FORM AND SCALE

The considerable setback to Forrester Road and the Masters building reduces the visual impact of the AAP.

Careful selection of colours and materials has ensured the proposed does not have a high visual impact from the public domain. A materials and finishes schedule has been provided as part of the architectural set, and is provided in Appendix D.

The foyer extension and awning modifications will not be visible from the public domain.

5.2.2 RELATIONSHIP TO ADJOINING PROPERTIES

The setback of the proposed works to Forrester Road is greater than that of the existing club building façade. The works are also setback a considerable distance to the Masters development. The structure will be screened from residential dwellings in Boronia Road by the existing club building which will ensure there will be no impact on adjoining residential properties.

5.2.3 ACCESS, PARKING AND TRAFFIC

Vehicular access to the site is via Forrester Road and Boronia Road. Access from Forrester Road is via a right turn bay, or a left turn slip lane. An entry and exit driveway is provided from Boronia Road.

Approximately 1,190 parking spaces are currently provided on the site (excluding Masters parking) in the form of open air car parks.

The Forrester Road access point is shared by the Masters home improvement centre to the north.

McLaren Traffic Engineering has prepared a Traffic and Parking Assessment for this development which considers the cumulative impact of DA13/1196 and DA14/0932, existing demands from the Club, and demand from the proposed. McLaren recommend an assessment of the parking demand at a later stage to accurately respond to parking requirements on the site. This report is provided in Appendix K.

Bus stops for north and south bound buses are located in front of the Club on Forrester Road. Bus routes 759 and 780 service the site and provide access to St Marys Train Station and Mt Druitt Train Station. This service improves the accessibility of the site and provides an alternate transport means for getting to and from the facility.

5.3 SOCIAL AND ECONOMIC IMPACTS

5.3.1 SOCIAL IMPACTS

The facility provides an outdoor entertainment opportunity in Western Sydney for all age groups and abilities unlike any other in Sydney.

The expected patronage is 40% families or children aged 6 or over, and the remainder above 18 years with no children including corporate visitors and international tourists.

The facility allows for easy sightlines around the perimeter to aid in child supervision. The perimeter fence, wind breaks and shade structures will provide for a safe and child friendly environment.

The facility is inclusive, and caters for all abilities with specialized harnesses and lanyards for those with mobility impairments.

The facility also provides opportunities for functions, parties, and corporate team building events with the activity and open space area accommodating up to 150 people.

5.3.2 ECONOMIC IMPACT

The proposal is expected to bring the following benefits to the local economy:

- Approximately 10 employment opportunities;
- Being Australia's first 'high-end' AAP, the facility will become a regional tourism draw card;
- Studies of similar projects have indicated an estimated $5.8m positive effect on economic output; and
- Increasing the offer of recreational facilities within St Marys.

6 Suitability of the Site

The site is considered suitable for the proposed development given the following:

- The facility and infrastructure on the site are already established, therefore the facility will be maximising the efficiency of the existing services and infrastructure;
- The expansion will have no adverse impact on the Cumberland Plains Woodlands, and does not require the removal of existing trees or vegetation;
- The location of the facility is not identified as being bush fire prone;
- The facility introduces areas of pervious surfaces to aid in natural infiltration;
- The site is not a heritage item, within a heritage conservation area, or within close proximity to a heritage item;
- The site is capable of accommodating adequate parking for staff, members and guests; and
- The zoning of the site under the PLEP permits the proposed outdoor recreational use.

7 Consultation

In preparing this Development Application the applicant engaged in a pre-Lodgement meeting with Council technical staff on 27 February 2014.

Preliminary plans of the proposed scheme were presented at this meeting. Council issued meeting minutes on the same day. These minutes outlined the discussion on all major planning and technical matters relating to the proposal, as well as a list of recommended documents to be submitted with the development application. It is noted that all agreed documentation has been submitted as part of this proposal.

Council provided a list of key issues relating to the application. These points are summarised below, and comments on each are provided.

> *The proposed height of the structure will extend beyond the ridge height of the current Club building. Consideration of the visual impact of the works on the skyline will need to be addressed in the SEE.*

The LEP 2010 does not assign a height control to the site. The visual impact of the building is addressed in Section 4.4.4.

> *Verification that the works are located outside the part of the site identified in the LEP 2010 Scenic and Landscape Values Map is to be provided within the SEE.*

Figure 6 demonstrates the location of the proposed works being outside the identified Scenic and Landscape Values area.

A photomontage to assist in the assessment of impact is provided in Appendix X. The photomontage provided in Figure 5 demonstrates the minimal visual impact of the proposed from Forrester Road and the public domain on account of the transparency of the facility.

> *The extent of works encroaches/conflicts with proposed car parking which forms part of a separate DA.*

The Parking and Traffic Assessment Report prepared by McLaren Traffic Engineering addresses this matter and is appended to the SEE.

> *The intensification of use associated with the proposal should be addressed by way of an operational management plan.*

The Key Operational Considerations document addresses security, lighting, staffing, patron management, hours of operation, safety protocols, and other operational matters is appended to this SEE.

> *A Safety Management Plan addressing how the facility operates, how safety harnessing is utilised and any recommended works to be incorporated into the business operation, is appended to this SEE.*

The Key Operational Considerations document addresses these matters.

> *A traffic and parking assessment report is required to consider the cumulative impact of the proposed works in conjunction with existing site operations and the proposed works.*

A Traffic and Parking Assessment Report prepared by McLaren traffic Engineers is appended to this SEE.

> *An acoustic report is required to accompany the application.*

An Acoustic Report prepared by Acoustic Logic is appended to this SEE.

The SEE is to outline all accessible facilities including specific accessible equipment, location of accessible amenities, location of accessible parking spaces and verification of compliant paths of travel.

Accessibility is addressed in Section 3.5 of this report.

The application is to address all relevant requirements under SEPP 55 Remediation of Land

SEPP 55 is addressed in Section 4.1 of this report.

Application will need to address impacts on the sites overland flow and drainage system

The proposed flooring allows for natural infiltration given the impervious nature of the XX and Xx materials. Additionally, the AAP is a frame structure, and therefore will not obstruct overland flows.

A BCA compliance statement is to be submitted in support of the application.

A BCA Compliance Statement is appended to this SEE.

8 The Public Interest

It is considered the proposal is in the interest of the public given the social and economic impacts listed in section 5.3.

The proposed facility provides school children, families, professionals and people with a disability in Western Sydney with access to a unique and state of the art AAP not found anywhere else in Sydney.

The facility provides an outdoor entertainment opportunity for all age groups and is designed to aid in child supervision to make the facility as family-friendly as possible.

The facility is inclusive, and caters for all abilities with specialized harnesses and lanyards for those with mobility impairments.

The facility also provides opportunities for functions, parties, and corporate team building events with the activity and open space area accommodating up to 150 people.

Increased visitation to the St Mary's Precinct as a result of the facility will help activate the area and increase localised spending, while also providing additional employment opportunities.

9 Conclusion

The assessment provided in this report indicates the application for the AAP on the subject site is in accordance with key State and Local Planning Policy Framework and will provide significant public benefit for the local and wider community. This SEE has assessed the potential environmental, economic, and social impacts of the proposal and demonstrated how these impacts will either be positive or mitigated to ensure the amenity and scenic and landscape values of the area will be preserved.

As such we consider the proposal supportable and should be approved by Council.

Disclaimer

This report is dated August 2014 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Family Entertainment Centre Unit Trust (**Instructing Party**) for the purpose of SEE (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

Appendix A Pre-DA meeting minutes

Our Ref: PL14/0016
Contact: Gavin Cherry
Telephone: (02) 4732 8125

27 February 2014

St Marys Rugby League Club
Cnr Forrester & Boronia Roads
ST MARYS NSW 2760

Attention: Rob Desborough

Dear Mr Desborough,

Pre-lodgement Meeting
Proposed Extension of Go Banana's - Aerial Adventure Park
Lot 11 DP 1192443, St Marys Rugby League Club Boronia Road
NORTH ST MARYS NSW 2760

We welcome your initiative to commence your project in the Penrith Local Government Area.

Thankyou for participating in Council's pre-lodgement meeting on 27 February 2014. We consider that the pre-lodgement process will assist in the preparation and determination of your proposal.

If you require any further assistance regarding the attached advice please contact me on (02) 4732 8125.

Yours faithfully,

Gavin Cherry
Principal Planner

***** Important Note *****

The pre-lodgement panel will endeavour to provide information which will enable you to identify issues that must be addressed in any application. The onus remains on the applicant to ensure that all relevant controls and issues are considered prior to the submission of an application.

Information given by the pre-lodgement panel does not constitute a formal assessment of your proposal and at no time should comments of the officers be taken as a guarantee of approval of your proposal.

It is noted that there is no Development Application before the Council within the meaning of the *Environmental Planning and Assessment Act 1979*. This response is provided on the basis that it does not fetter the Council's planning discretion and assessment of any Development Application if lodged. It is recommended that you obtain your own independent expert advice.

The response is based upon the information provided at the time of the meeting.

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrithcity.nsw.gov.au

PENRITH
CITY COUNCIL

ENGLISH	If you do not understand this, please contact the Telephone Interpreting Service on 131 450 and ask them to contact Penrith City Council on your behalf on (02) 4732 7777. Or come to the Council offices and ask for an interpreter.
ARABIC	إذا لم يكن بامكانك قراءة النص أعلاه. الرجاء الاتصال بخدمات الترجمة الفورية الهاتفية (TIS) على الرقم 131 450 والطلب منهم الاتصال بدورهم بمجلس مدينة بنريث نيابة عنك على الرقم (02) 4732 7777 . أو يمكنك الحضور إلى المجلس وطلب ترتيب مترجم فوري لك .
CHINESE	如果您无法阅读这些文字，请致电 131 450 联系电话传译服务中心，请他们代您拨打 (02) 4732 7777 联系 Penrith 市议会。您也可以亲自到市议会来并要求获得口译服务。
GREEK	Αν δεν μπορείτε να το διαβάσετε αυτό, τηλεφωνήστε στην Τηλεφωνική Υπηρεσία Διερμηνέων στο 131 450 και ζητήστε τους να επικοινωνήσουν με το Δήμο Penrith (Penrith City Council) για λογαριασμό σας στον αριθμό (02) 4732 7777, ή ελάτε στη Δημαρχία και ζητήστε διερμηνέα.
HINDI	यदि आप इसे नहीं पढ़ पाते हैं, तो कृपया 131 450 पर टेलीफोन दुभाषिया सेवा से संपर्क करें और उनसे कहें कि वे आपकी ओर से पेनरथि सटिी काउंसलि से (02) 4732 7777 पर संपर्क करें. या आप काउंसलि आएँ और एक दुभाषिये की माँग करें.
ITALIAN	Se non riuscite a leggere questo, contattate il servizio telefonico di interpretariato al numero 131 450 e chiedetegli di contattare da parte vostra il comune di Penrith City al numero (02) 4732 7777 oppure venite in comune e richiedete un interprete.
MALTESE	Jekk ma tistax taqra dan, jekk jogħġbok, ikkuntattja lit-Telephone Interpreting Service fuq 131 450 u itlobhom biex jikkuntattjaw Penrith City Council f'ismek fuq (02) 4732 7777. Jew ejja l-Kunsill u itlob għal interpretu.
PERSIAN	اگر نمی توانید این مطلب را بخوانید، لطفاً به خدمات ترجمه تلفنی به شماره 131 450 زنگ بزنید و از آنان بخواهید با شورای شهر پنریث Penrith City Council به شمار ۰ 7777 4732 (02) از جانب شما تماس بگیرند. یا اینکه به شهرداری Council آمده و مترجم بخواهید.
SINGHALESE	ඔබට මෙය කියවීමට නොහැකි නම්, කරුණාකර දුරකථන අංක 131 450 ඔස්සේ දුරකථන පරිවර්තන සේවාව (Telephone Interpreting Service) අමතා ඔබ වෙනුවෙන් දුරකථන අංක (02) 4732 7777 අමතා පෙන්රිත් නගර සභාව (Penrith City Council) හා සම්බන්ධ කර දෙන ලෙස ඉල්ලා සිටින්න. නැතිනම් නගර සභාව වෙත පැමිණ භාෂා පරිවර්තකයකු ලබා දෙන ලෙස ඉල්ලා සිටින්න.
TAMIL	இதை உங்களால் வாசிக்க இயலவில்லை என்றால், 'தொலைபேசி உரைபெயர்ப்பு சேவை'யை 131 450 எனும் இலக்கத்தில் அழைத்து 'பென்ரித் நகரவை'யுடன் (02) 4732 7777 எனும் இலக்கத்தில் உங்கள் சார்பாக தொடர்பு கொள்ளுமாறு கேளுங்கள். அல்லது நகரவைக்கு விஜயம் செய்து உரைபெயர்ப்பாளர் ஒருவர் வேண்டுமெனக் கேளுங்கள்.
VIETNAMESE	Nếu quý vị không thể đọc được thông tin này, xin liên lạc Dịch Vụ Thông Dịch Qua Điện Thoại ở số 131 450 và yêu cầu họ thay mặt quý vị liên lạc với Hội Đồng Thành Phố Penrith ở số (02) 4732 7777. Hoặc hãy tới Hội Đồng và yêu cầu có thông dịch viên.

PROPERTY AND PLANNING INFORMATION	
Attendees	**Proponent** Rob Desborough (St Mary's Leagues Club) Amgad Botros (Go Banana's) Kent Marchant (Touch Cloud) **Penrith City Council** Principal Planner – Gavin Cherry Mark Cremona – Development Engineer Craig Squires – Fire Safety Supervisor Chris Martyn – Planning Administration
Proposal	Extension of Go Banana's - Aerial Adventure Park
Address	Lot 11 DP 1192443 , St Marys Rugby League Club Boronia Road NORTH ST MARYS NSW 2760
Zoning and permissibility	The proposal would be best defined as a 'recreation facility (outdoor)' being:- ***recreation facility (outdoor)*** *means a building or place (other than a recreation area) used predominantly for outdoor recreation, whether or not operated for the purposes of gain, including a golf course, golf driving range, mini-golf centre, tennis court, paint-ball centre, lawn bowling green, outdoor swimming pool, equestrian centre, skate board ramp, go-kart track, rifle range, water-ski centre or any other building or place of a like character used for outdoor recreation (including any ancillary buildings), but does not include an entertainment facility or a recreation facility (major).* The subject site is zoned part RE2 - Private Recreation and part IN2 – Light Industry. The location of the proposed works is within land zoned RE2. A 'recreation facility (outdoor)' is a permissible land use in the RE2 zone subject to consent from Council. The site is identified as being within a flood planning area as per LEP 2010 Map Sheet (18). The site is identified as being within a scenic and landscape values area pursuant LEP 2010 Map Sheet (18).
Site constraints	— Bushfire Prone Land — Overland Flows — 88B Restrictions and Easements (where applicable) — Endangered Ecological Community — Tree Presentation
Development Type	Local Development

KEY ISSUES AND OUTCOMES

The proposal is to address the following issues:

RELEVANT EPI's POLICIES AND GUIDELINES

Planning provisions applying to the site, including permissibility and the provisions of all plans and policies are contained in **Appendix A**.

PLANNING

- The proposed height of the structure is 22m. Given it will extend beyond the ridge height of the current club building, consideration of the visual impact of the works on the skyline will need to be addressed within the statement of environmental effects. This could include additional landscaping works throughout the car park or front setback area to ameliorate the visual prominence of the structure.

- Verification that the works are outside that part of the site affected by the LEP 2010 Scenic and Landscape Values Map is to be provided within the Statement of Environmental Effects. If any works encroach within this affected area, assessment against Clause 6.5 of the LEP 2010 is required.

- The site plan submitted (location of intended works) will need to be amended as the extent of works encroaches / conflicts with proposed car parking as part of a separate Development Application currently under assessment by Council for a fitness centre and motel.

- The proposal will result in the facility being an independent attractor separate from the registered club. The intensification of use should be addressed by way of an operational management plan. This plan should address security and surveillance, lighting, staffing levels, patron management, hours of operation, safety protocols, emergency response and risk assessment.

- A safety management plan (or safer by design statement) is to accompany the application and should explain how the facility operates, how safety harnessing is utilised and outline any recommended works that are to be incorporated into the business operation.

- A Traffic and Parking Assessment Report / Statement is required to consider the cumulative impact of the proposed works in conjunction with existing site operations and the proposed combined works (subject of a current separate development application). This should include consideration of existing car parking efficiency, dual use arguments, staff / patron parking allocations, accessible parking and proposed internal access arrangements.

- An acoustic report is required to accompany the application and is to specifically consider the noise impacts of the external activities on the closest residential receivers.

- The statement of environmental effects is outline all accessible facilities including specific accessible equipment, location of accessible

amenities, location of accessible parking spaces and verification of compliant paths of travel.

- The application is to address all relevant requirements under State Environmental Planning Policy 55 Remediation of Land (SEPP 55). Council cannot consent to any development unless these requirements have been satisfied. Should remediation be required this will require development consent. The application is to demonstrate that the land is suitable for the proposed purpose.

ENGINEERING

- Separate discussions with Council's Engineers is occurring to consider and resolve identified drainage and overland flow requirements as a result of a separate Development Application on the site. The modeling undertaken as part of this separate application will be required to consider the proposed works (Aerial Adventure Park). Alternatively any application pursued for the Aerial Adventure Park will need to address impacts on the sites overland flow and drainage system.

BUILDING

- A BCA compliance statement is to be submitted in support of the application. This statement should address:-

  — Balustrade requirements and how any identified non compliances are to be addressed.
  — Verification that required paths of travel from the existing facility (Go Bananas) are not compromised by the proposed works.
  — Potential for upgrade works to the existing facility.

Documents to be submitted with development application	— Site Plan — Elevation Drawings — Equipment Design Details — Lighting Details — Notification Plan — Statement of Environmental Effects (SEE) — Visual Impact Assessment (address in SEE) — Traffic Assessment — Acoustic Report — Operational Management Plan — Safety / Security Details — Accessibility Details — BCA Compliance Statement — Schedule of External Materials And Finishes — Six printed and a CD copy of your development application Please refer to Council's Development Application checklist, as attached, for further details of submission requirements and ensure that plans submitted illustrate consistent detail. Please ensure you contact Council's duty officer on 4732 7991 to make an appointment for lodgement of this application.

Fees	Please call Development Services Department's Administrative Support on (02) 4732 7991 to enquire about fees and charges.

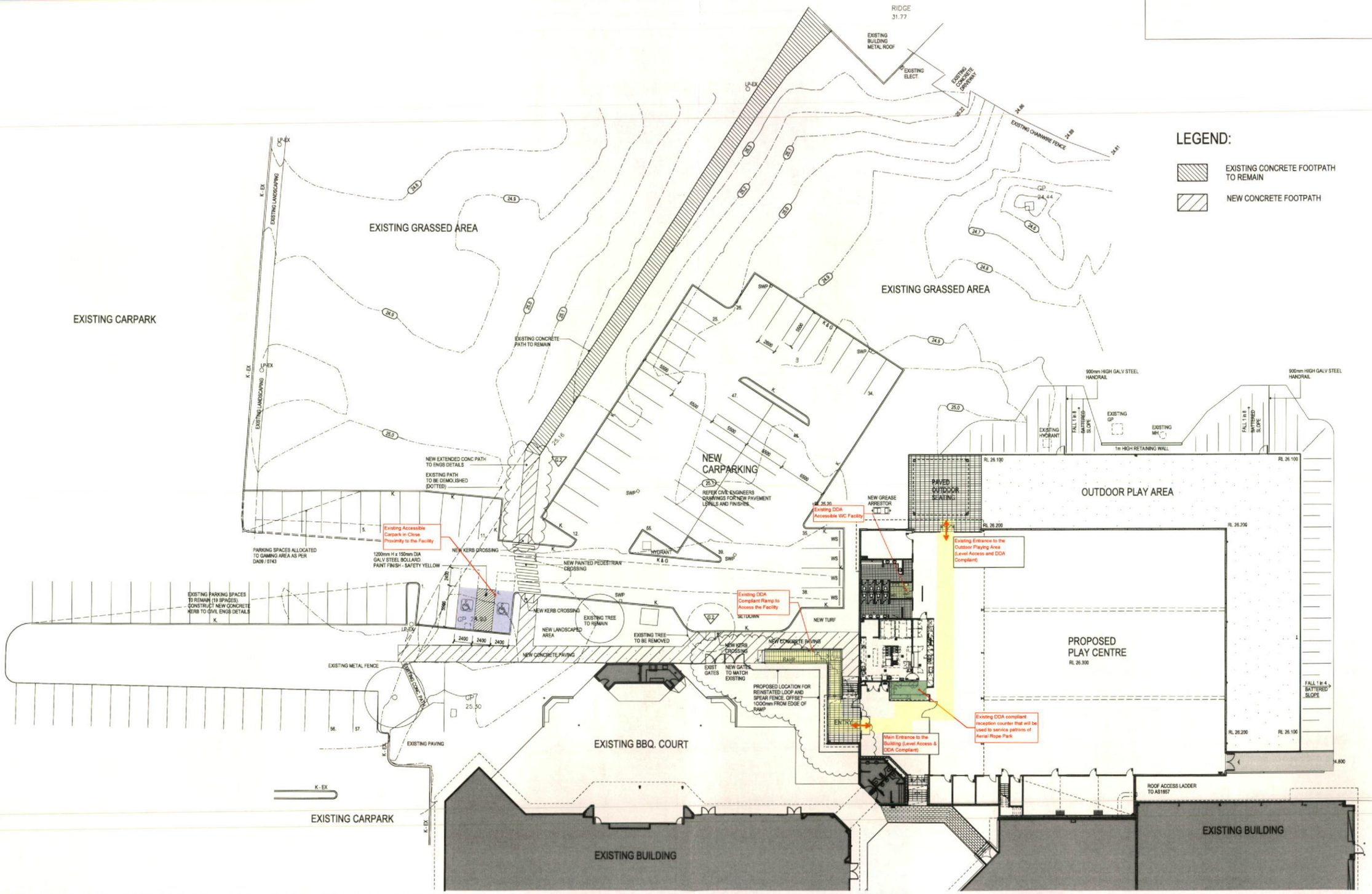
APPENDIX A

- SREP 20 – Hawkesbury Nepean
- SEPP 55 - Remediation of Land
- Penrith LEP 2010
- Penrith DCP 2010
- Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance.

Appendix B

Accessible Facilities Map – SBA Architects and PWC

PWC Markup 28/08/14



ISSUE	REV.	DESCRIPTION	DATE
	H	FENCE REPOSITIONED AND GATES ADDED	18.06.10
	G	RE-ISSUED FOR CONSTRUCTION	26.02.10
	2	HATCHING ADDED	
	1	LEGEND ADDED	
	F	EXTERNAL GATED ADDED, HANDRAILS ADDED TO BATTERED SLOPE	24.02.10
	E	ISSUE FOR CONSTRUCTION	04.02.10
	D	CONSTRUCTION CERTIFICATE APPLICATION	22.01.10
	C	FOR CO-ORDINATION	13.01.10
	B	FOR CO-ORDINATION	06.01.10
	A	PRELIMINARY FOR CLIENT REVIEW	23.12.09

ISSUE	REV.	DESCRIPTION	DATE
	I	AS BUILT	18.07.10

SBA ARCHITECTS
Residential Industrial Residential Retail Interior Design
Suite 702, 83 Mount Street, North Sydney NSW 2060
T 02 9929 9988 F 02 9929 8899
E info@sbaarch.com.au W www.sbaarch.com.au

CLIENT
FDC
FDC Construction & Fitout
25 - 24 Junction Steet
Forest Lodge NSW 2037
T 02 9566 2822 F 02 9566 2900

PROJECT
ST MARYS LEAGUES CLUB
'GO BANANAS' PLAY CENTRE

TITLE
SITE PLAN

DATE	27.11.09	PROJECT No.	09149
SCALE	1:200 @ B1		
DRAWN	PP		
CHECKED		DWG No.	GA 101
APPROVED		ISSUE	/ I

Appendix C Acoustic Report – Acoustic Logic

Go Bananas Extension, St Marys Rugby League Club

Noise Emission Assessment

SYDNEY
A: 9 Sarah St Mascot NSW 2020
T: (02) 8339 8000
F: (02) 8338 8399

SYDNEY MELBOURNE BRISBANE CANBERRA
LONDON DUBAI SINGAPORE GREECE

www.acousticlogic.com.au
ABN: 11 068 954 343

DOCUMENT CONTROL REGISTER

Project Number	20140804.1
Project Name	Go Bananas Extension, St Marys Rugby League Club
Document Title	Noise Emission Assessment
Document Reference	20140804.1/1208A/R3/TA
Issue Type	Email
Attention To	Family Entertainment Centre Unit Trust Lei Chen

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
1	12/08/2014	20140804.1/1208A/R1/TA	TA		TA
2	12/08/2014	20140804.1/1208A/R2/TA	TA		TA
3	12/08/2014	20140804.1/1208A/R3/TA	TA		TA

TABLE OF CONTENTS

1 INTRODUCTION

This report presents an analysis of potential acoustic impacts associated with the proposed Go Bananas aerial park extension of St Marys Rugby Leagues Club.

This report will identify potential noise sources generated by the site, and determine noise emission goals for the development to meet Council acoustic requirements to ensure that nearby developments are not adversely impacted.

This assessment is based on drawings provided by TouchCloud Global Pty Ltd dated July 2014.

2 SITE DESCRIPTION

2.1 THE PROPOSAL

The proposed extension of Go Bananas consists of an outdoor aerial park to be located in the north eastern corner of the site. Patrons using the outdoor areas of the aerial park have been identified as a potential noise emission source. It is anticipated that the maximum capacity of the outdoor aerial park will be 150 patrons at any one time.

The facility is expected to operate between 9:00am and 8:00pm in the summer months, and 9:00am and 6:00pm in the winter months

2.2 POTENTIALLY AFFECTED RECEIVERS

The nearest potentially affected residential properties are those located on Boronia Road to the south of the site. Noise emission compliance at these residential receivers will result in compliance at all receiver locations.

Figure 1 illustrates the subject site and location of noise measurements.

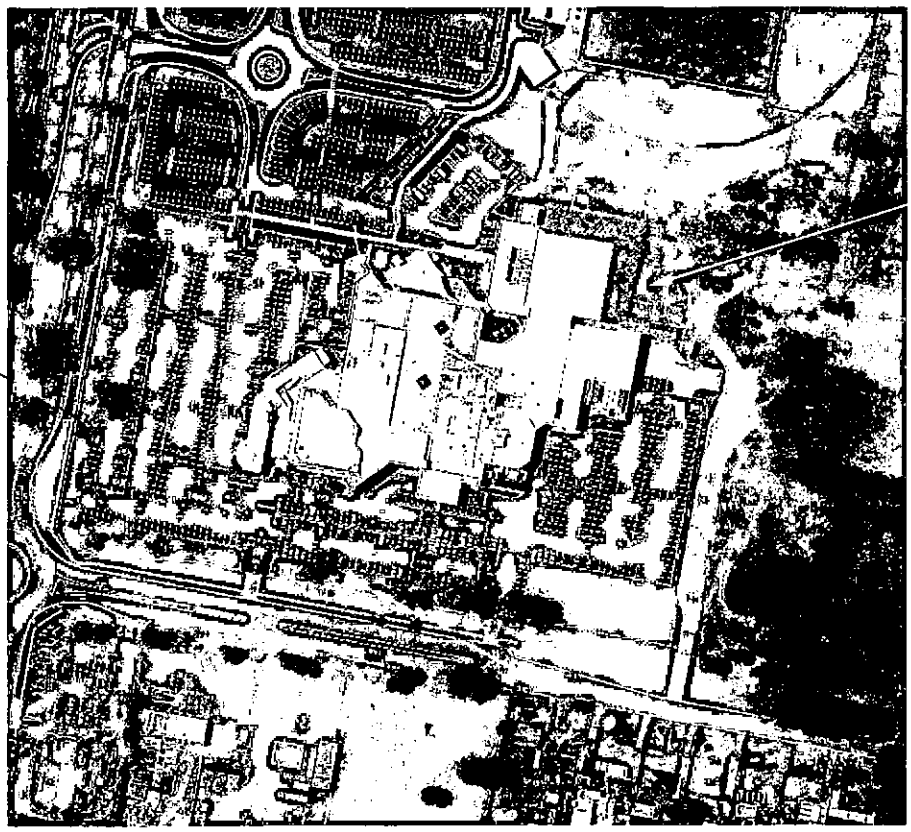


Figure 1 – Site Map and Noise Measurement Location

3 ENVIRONMENTAL NOISE DESCRIPTORS

Environmental noise constantly varies. Accordingly, it is not possible to accurately determine prevailing environmental noise conditions by measuring a single, instantaneous noise level.

To accurately determine the environmental noise a 15-20 minute measurement interval is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In analysing environmental noise, three-principle measurement parameters are used, namely L_{10}, L_{90} and L_{eq}.

The L_{10} and L_{90} measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement intervals.

The L_{10} parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the L_{90} level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The L_{90} parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the new source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L_{90} level.

The L_{eq} parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the 15 minute period. L_{eq} is important in the assessment of traffic noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of environmental noise.

4 BACKGROUND NOISE MEASUREMENTS

Long term monitoring of background and traffic noise was conducted using a noise monitor installed on site at 177 Boronia Road, St Marys.

Monitoring was conducted from the 14th to the 22nd May 2013 using an Acoustic Research Laboratories noise monitor set to A-weighted fast response. The monitor was calibrated at the start and end of the monitoring period using a Rion NC-73 calibrator. No significant drift was noted. Noise logger data is provided in Appendix 1.

The following table presents the measured background noise levels and the measured existing traffic noise levels at 177 Boronia Road, St Marys, which is one of the nearest residential receivers.

Table 1 – Measured Noise Levels – 177 Boronia Road, St Marys

Descriptor	Daytime (7am-6pm)	Evening (6pm – 10pm)	Night time (10pm-7am)
Background Noise Levels dB(A) L_{90}	43	44	40

5 NOISE EMISSION OBJECTIVES

Noise impacts should comply with the requirements of the Penrith Council DCP.

In accordance with the Penrith City Council DCP 2010, noise emissions from the use of the site will be managed in accordance with the NSW Environmental Protection Authority (EPA) Industrial Noise Policy (INP).

5.1 NSW EPA INDUSTRIAL NOISE POLICY

The recommended assessment objectives vary depending on the potentially affected receivers, the time of day, and the type of noise source. The EPA Industrial Noise Policy has two requirements which both have to be complied with, namely an amenity criterion and an intrusiveness criterion.

5.1.1 Intrusiveness Criterion

The guideline is intended to limit the audibility of noise emissions at residential receivers and requires that noise emissions measured using the L_{eq} descriptor not exceed the background noise level by more than 5 dB(A). Where applicable, the intrusive noise level should be penalised (increased) to account for any annoying characteristics such as tonality.

5.1.2 Amenity Criterion

The guideline is intended to limit the absolute noise level from all noise sources to a level that is consistent with the general environment. The EPA's Industrial Noise Policy sets out acceptable noise levels for various localities. Table 2.1 on page 16 of the policy indicates 4 categories to distinguish different residential areas. They are rural, suburban, urban and urban/industrial interface. Table 2 provides the recommended maximum noise levels for the suburban residential receivers for the day, evening and night periods. For the purposes of this condition:

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;
- Evening is defined as the period from 6pm to 10pm; and
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

Table 2 - EPA Recommended Acceptable Noise Levels

Type of Receiver	Time of day	Recommended Noise Level dB(A)L_{eq}	
		Recommended	Maximum
Residential - Suburban	Day	55	60
	Evening	45	50
	Night	40	45

5.2 SUMMARY OF NOISE ASSESSMENT OBJECTIVES

The following table presents the summary of noise emission objectives applicable to the site. As the extension only operates during the "day" and "evening" periods, noise emissions have been assessed to these times.

Table 3 - Noise Objectives for Residential Receivers, dB(A)

Time of day	Measured Background Noise Level dB(A) L_{90}	Amenity (recommended) Criteria dB(A) L_{eq}	Intrusiveness Criteria Background + 5 dB(A) L_{eq}
Day	43	55	48
Evening	44	45	49

6 NOISE IMPACT ASSESSMENT

The main noise source in the proposed outdoor area would be patron noise (children and adults). A noise level of 85dB(A) L_{eq} has been utilised as sound power level per patron within the aerial park; this noise level is consistent for noise levels measured by this office within outdoor areas in a number of similar developments.

The emission levels were corrected for distance attenuation, façade reflection, barrier effects and the number of patrons to determine the resultant noise level. Where noted in the tables below, noise levels have also taken into account the effect of noise attenuation treatments.

6.1 PREDICTED NOISE LEVELS

The predicted noise levels presented within this Section are based on the following information / assumptions:

- Sound Power Level of 85dB(A) L_{eq} per patron in the aerial park, with one in three patrons having a raised voice at any one point in time;
- The outdoor area is filled to capacity with 150 patrons;
- Partial screening of the aerial park from the residential receivers by existing elements of the St Marys Leagues Club.

Noise emissions from the use of the outdoor aerial park are presented below:

Table 4 - Noise Objectives for Residential Receivers, dB(A)

Time of day	Predicted Noise Emissions dB(A) L_{eq}	Amenity (recommended) Criteria dB(A) L_{eq}	Intrusiveness Criteria Background + 5 dB(A) L_{eq}	Complies
Day	43	55	48	Yes
Evening	43	45	49	Yes

7 RECOMMENDATIONS

To ensure compliance with all nominated assessment criteria the following management controls and acoustic treatments are required.

- Music is not to exceed 75dB(A)L_{eq} in the outdoor aerial park.

- A detailed review of any external mechanical plant should be undertaken at construction certificate stage (once plant selections and locations are finalised). Acoustic treatments should be determined in order to control plant noise emissions to the levels set out in section 5 of this report. Compliance with these noise emission requirements will be achievable with standard acoustic treatments (plant enclosures, in-duct acoustic treatments and similar).

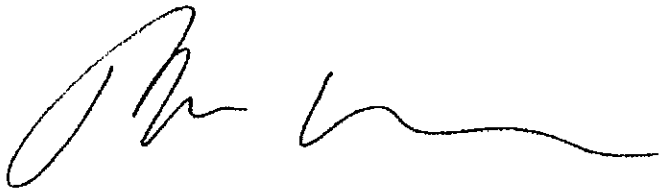
8 CONCLUSION

Potential noise impacts from the proposed Go Bananas extension to be located at St Marys Leagues Club been assessed against the requirements of the NSW EPA Industrial Noise Policy in accordance with the Penrith City Council DCP.

The acoustic treatments necessary to achieve compliance with the project noise emission and noise intrusion goals have been set out in section 7 of this report.

We trust this information is satisfactory. Please contact us should you have any further queries.

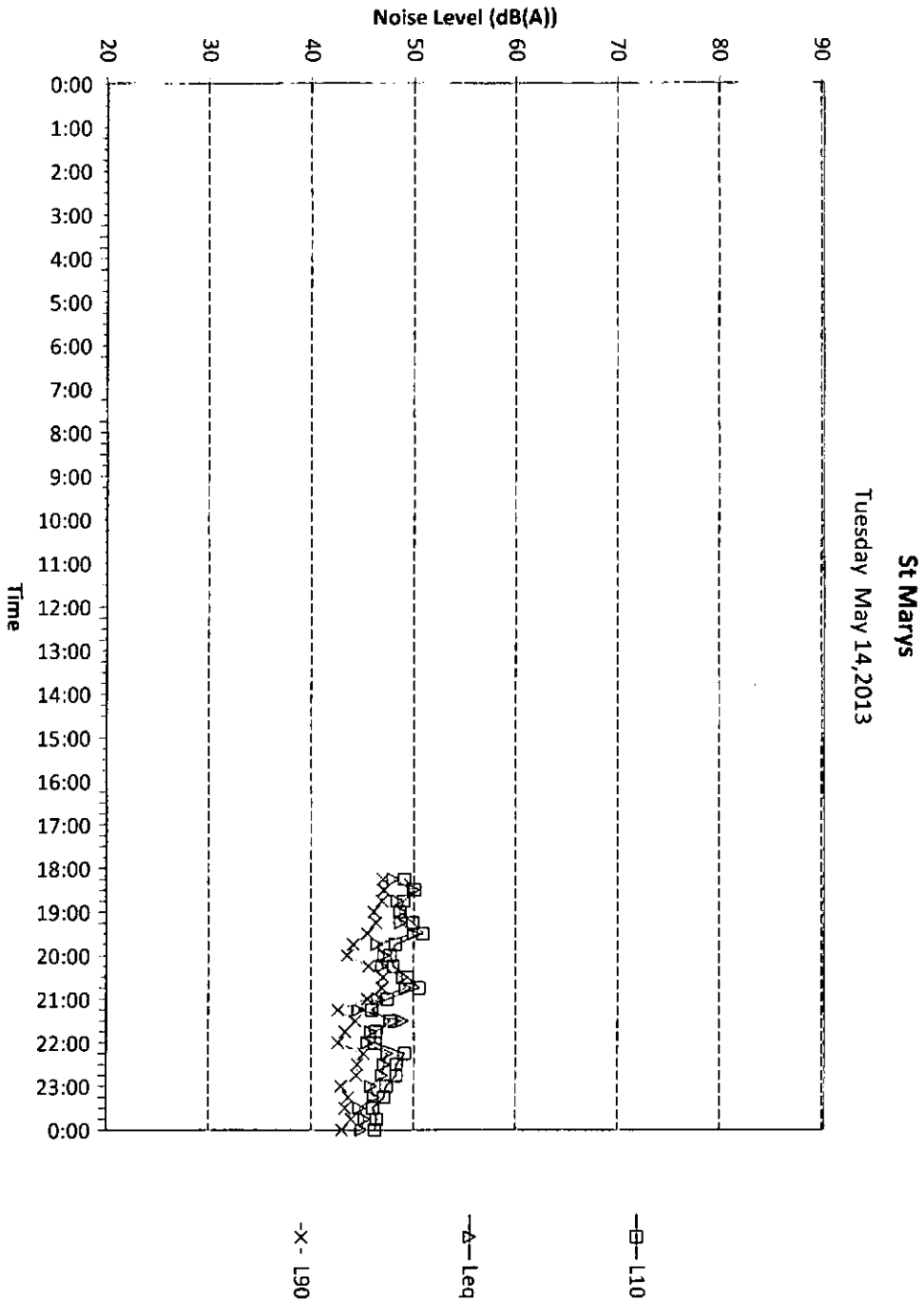
Yours faithfully,

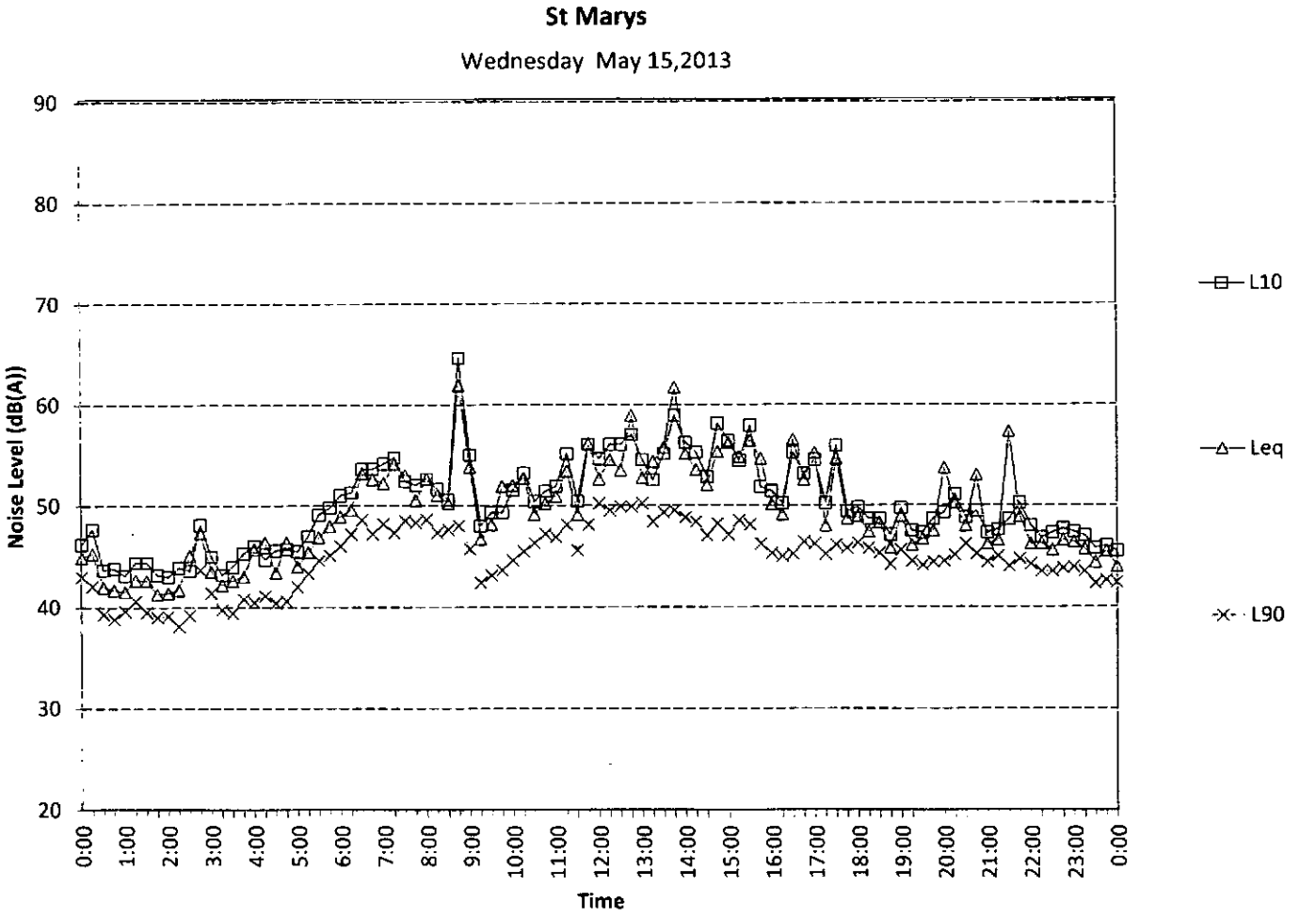


Acoustic Logic Consultancy Pty Ltd
Thomas Aubusson

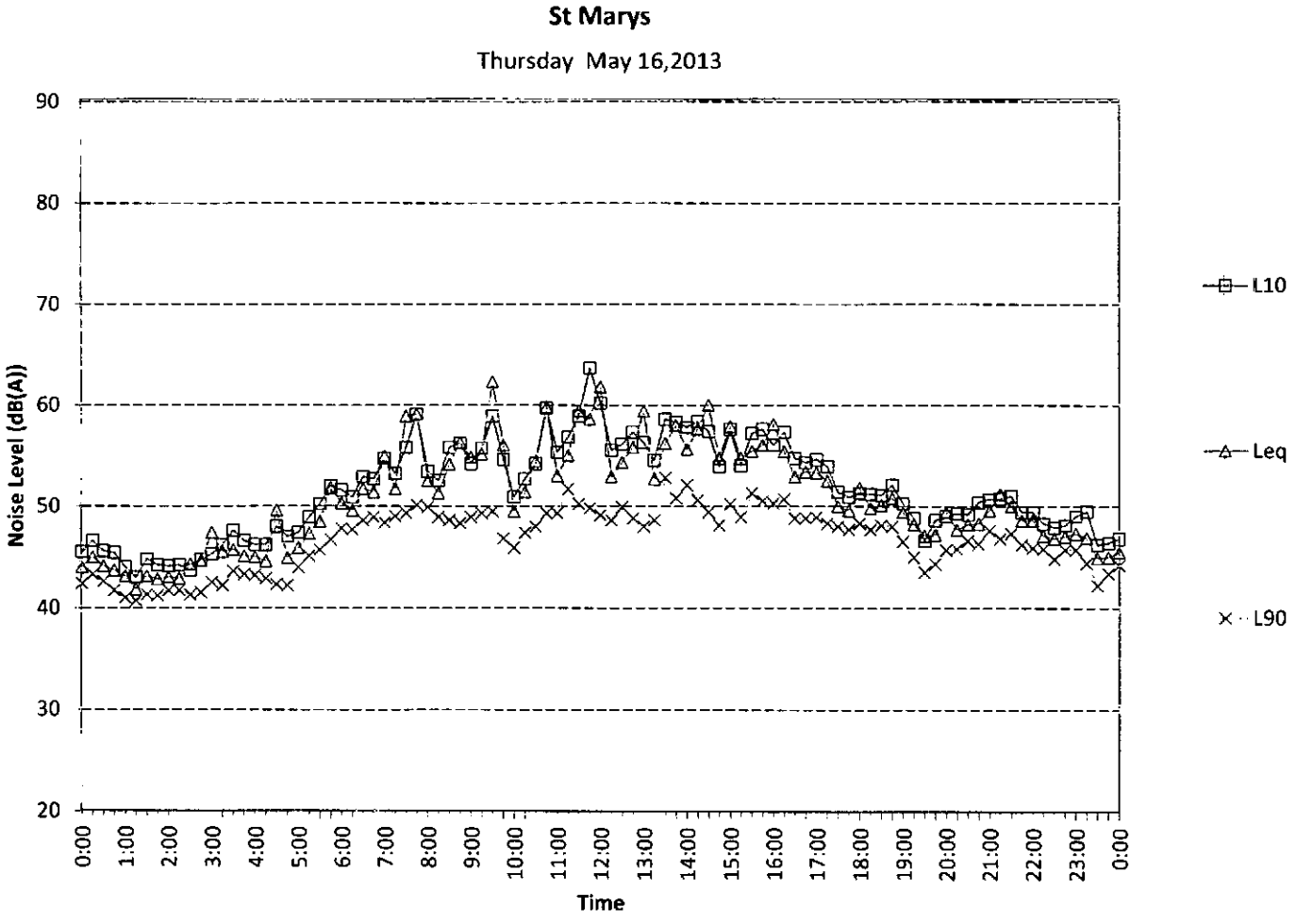
APPENDIX ONE –
UNATTENDED MONITORING DATA

177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed



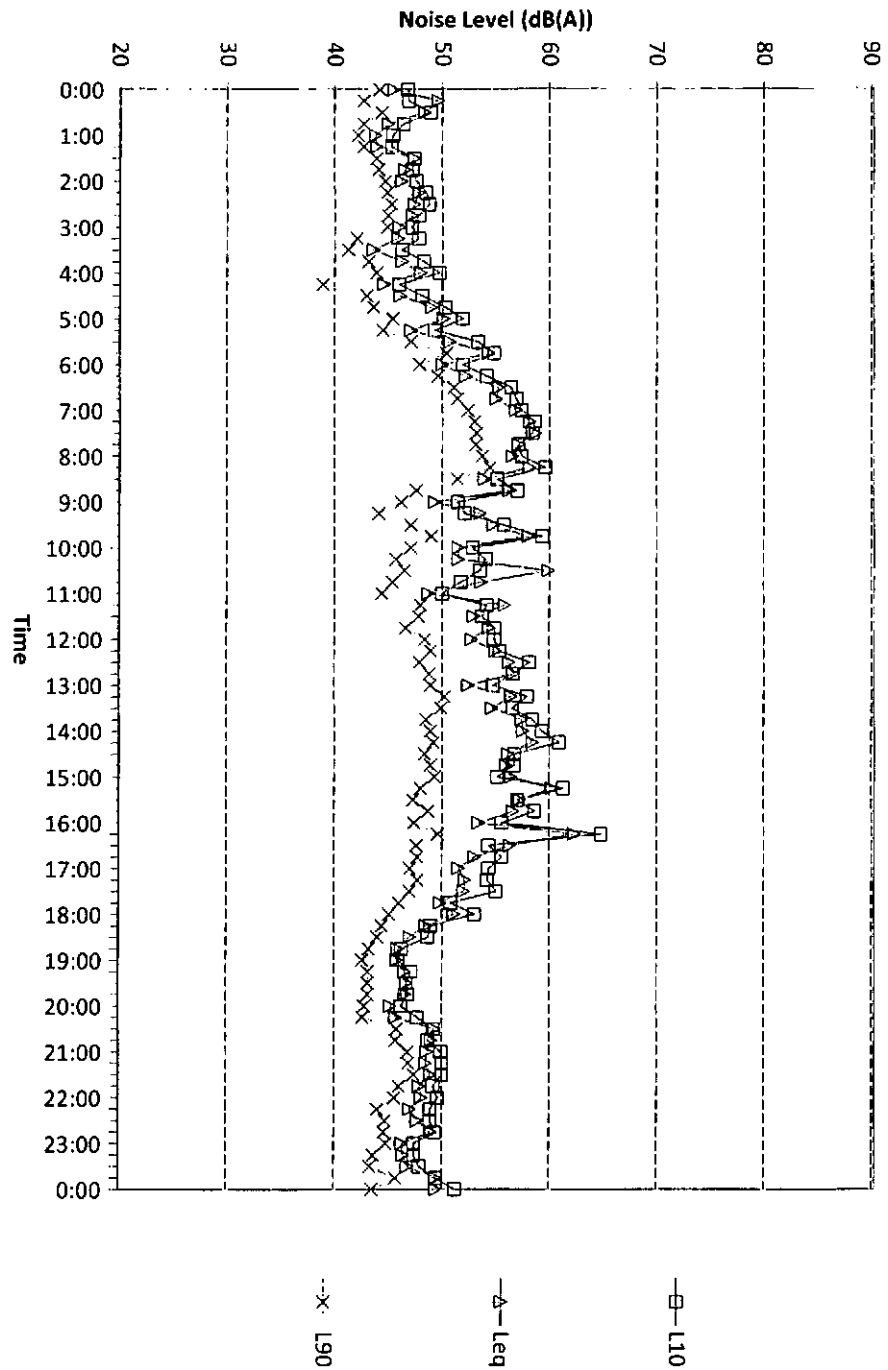


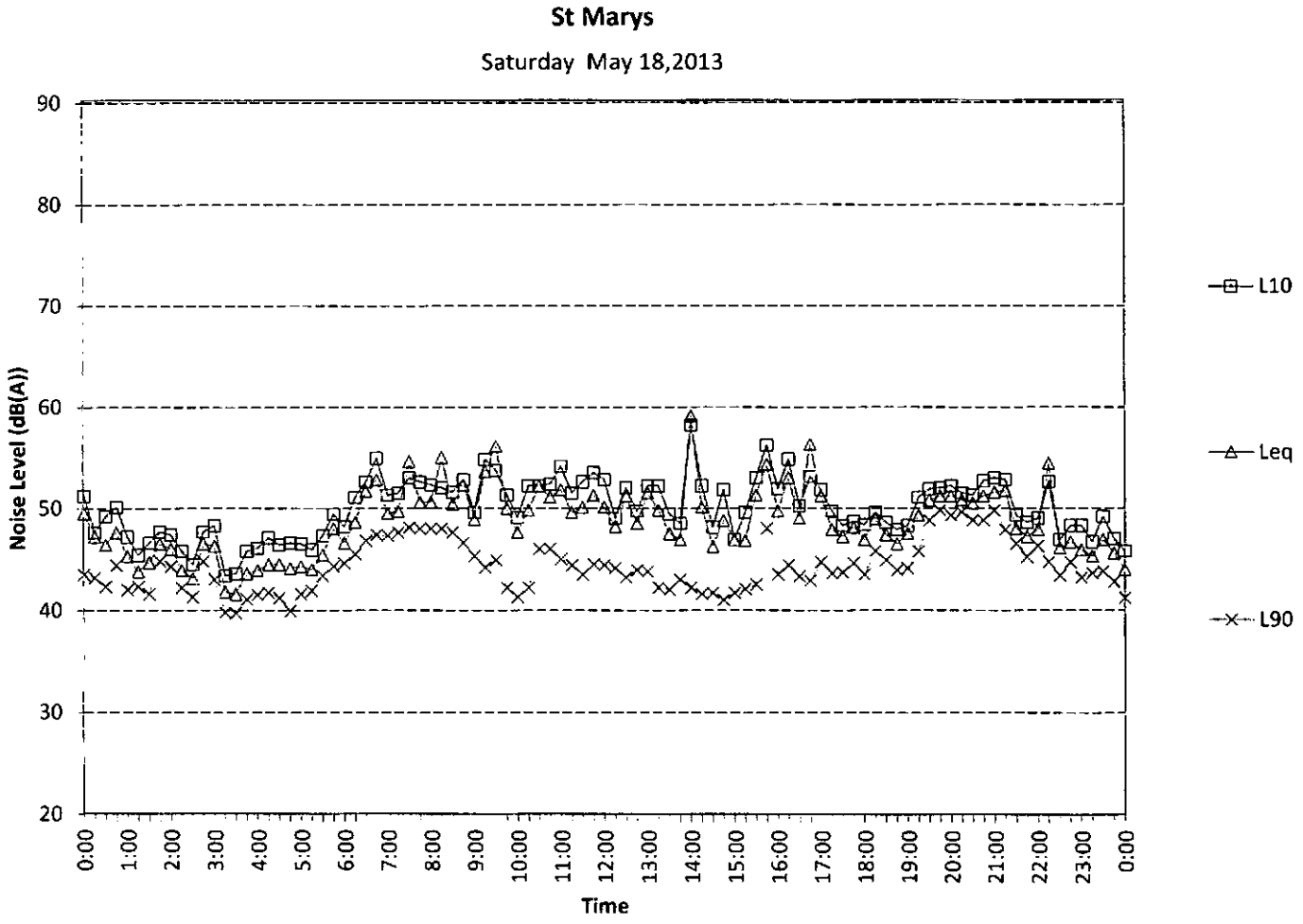
177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed



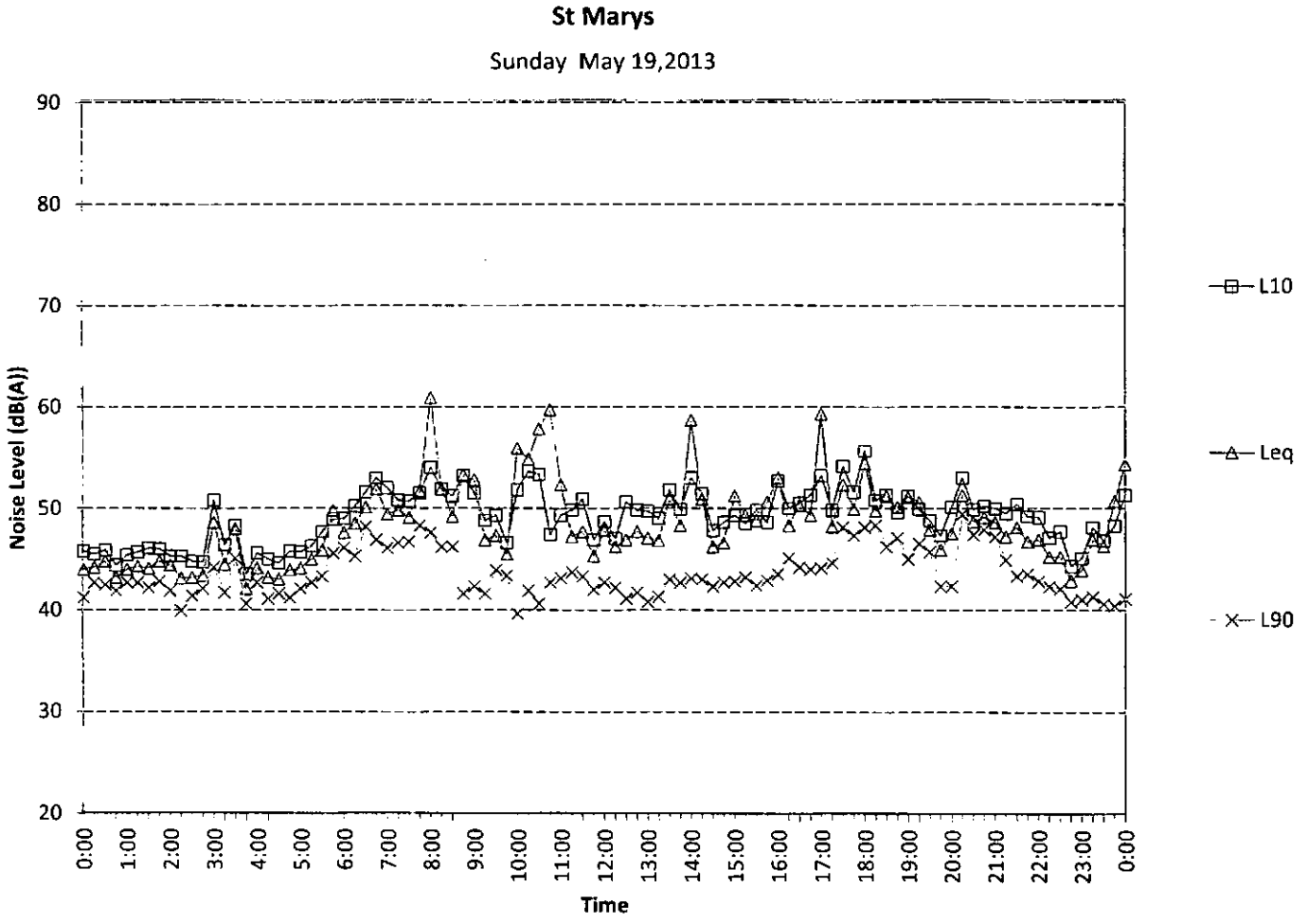
177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed

1778oronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed

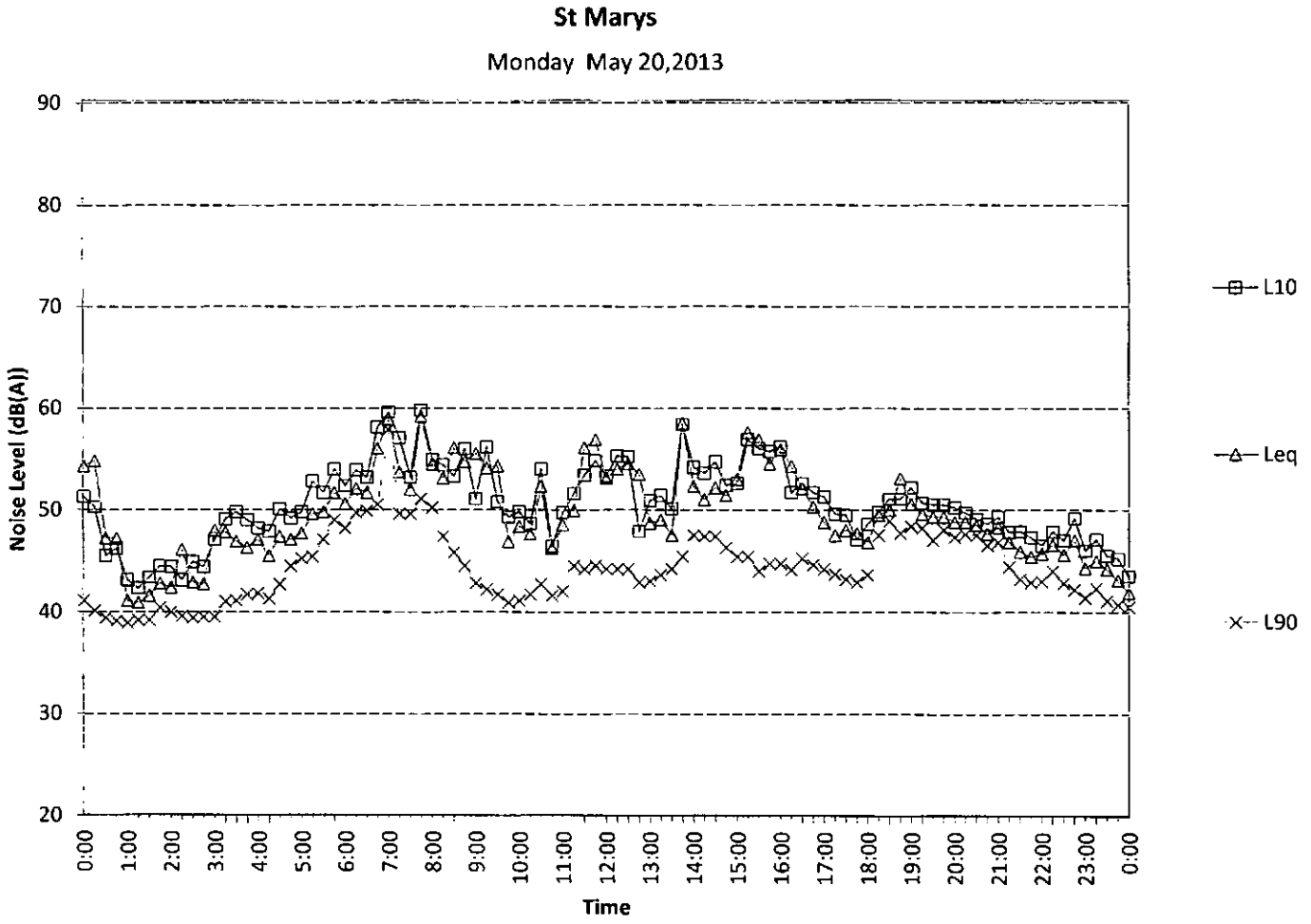




177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed

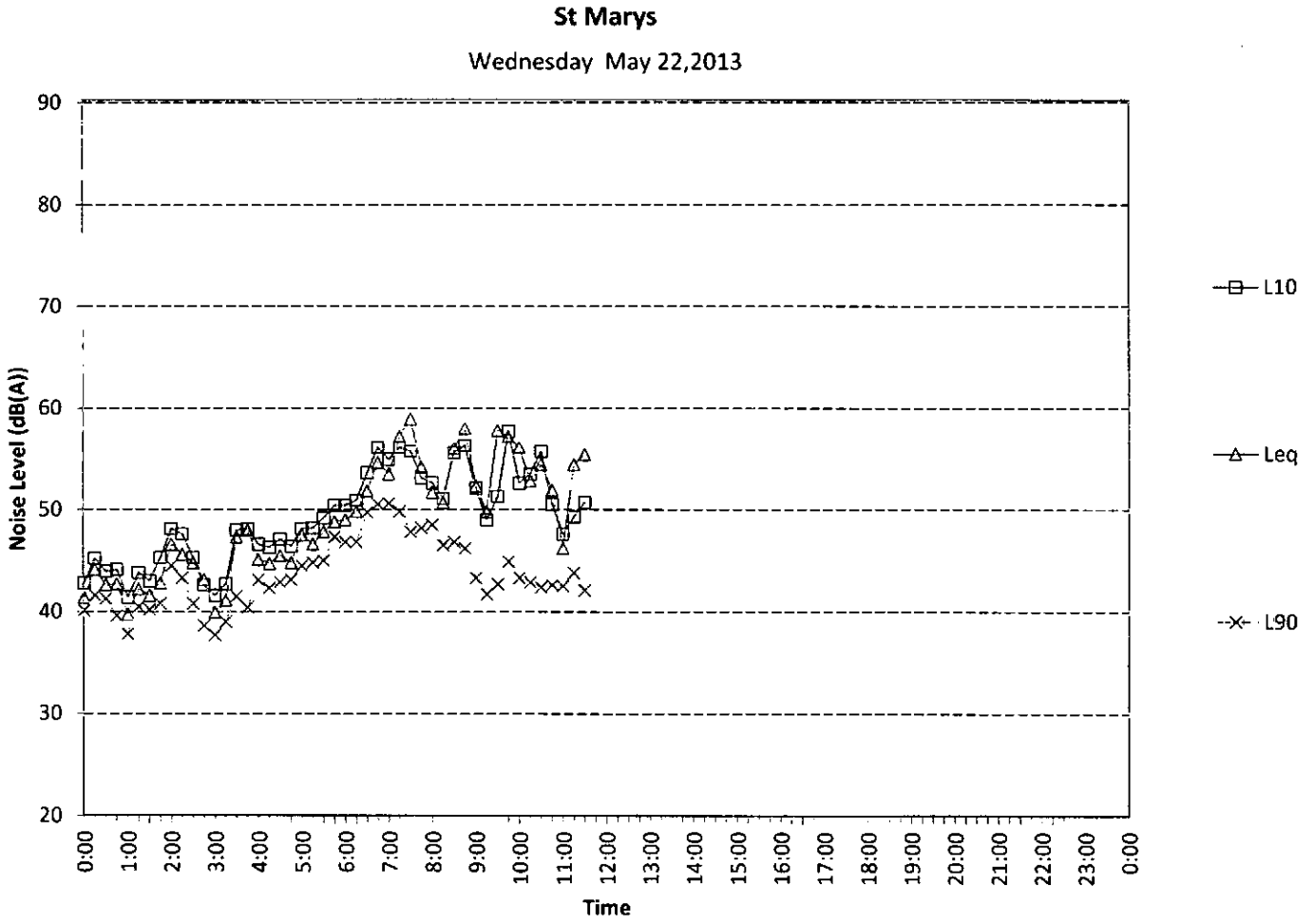


177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed



177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed

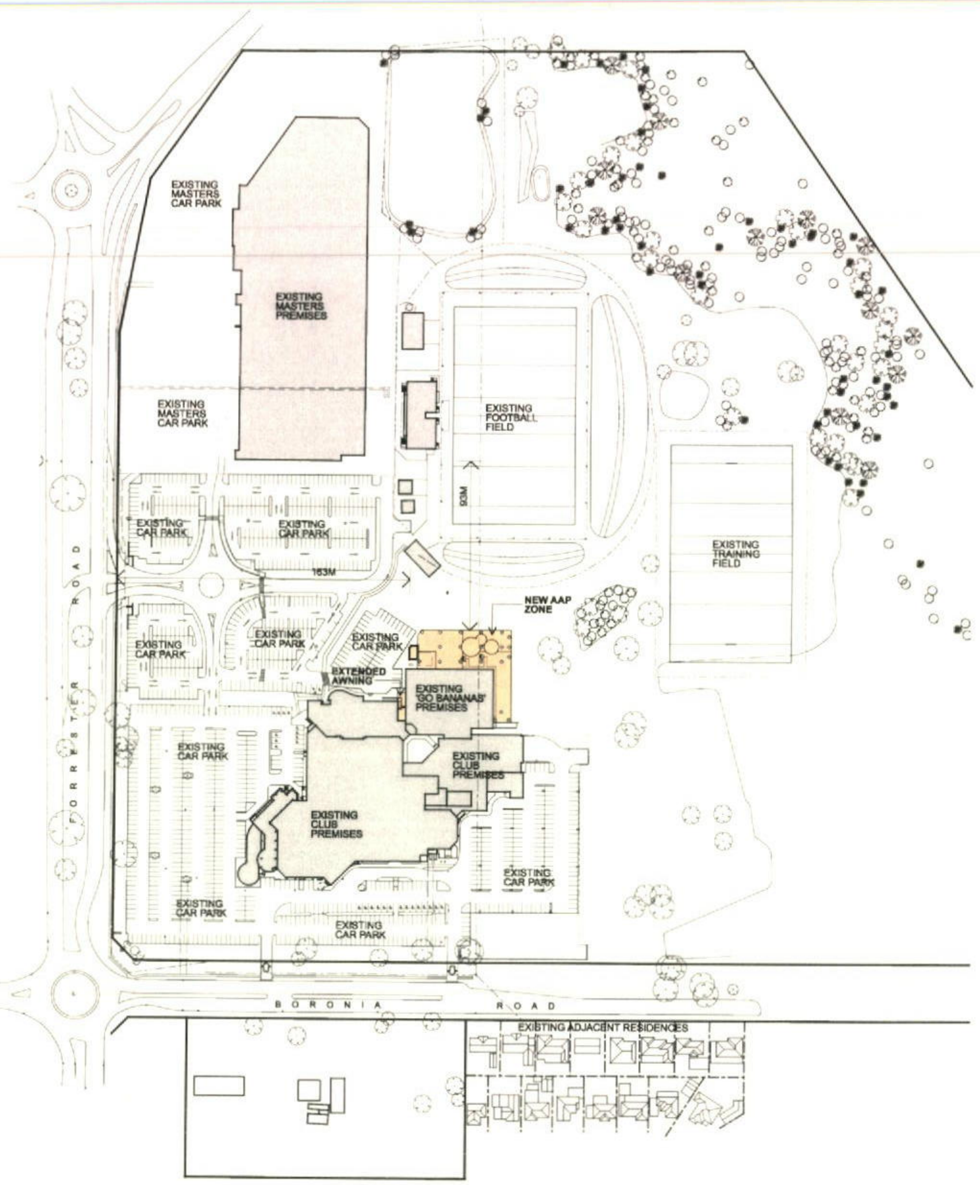
177Borania_NorthStMarys_heartleagueClub-20130522_Sta_Graphed



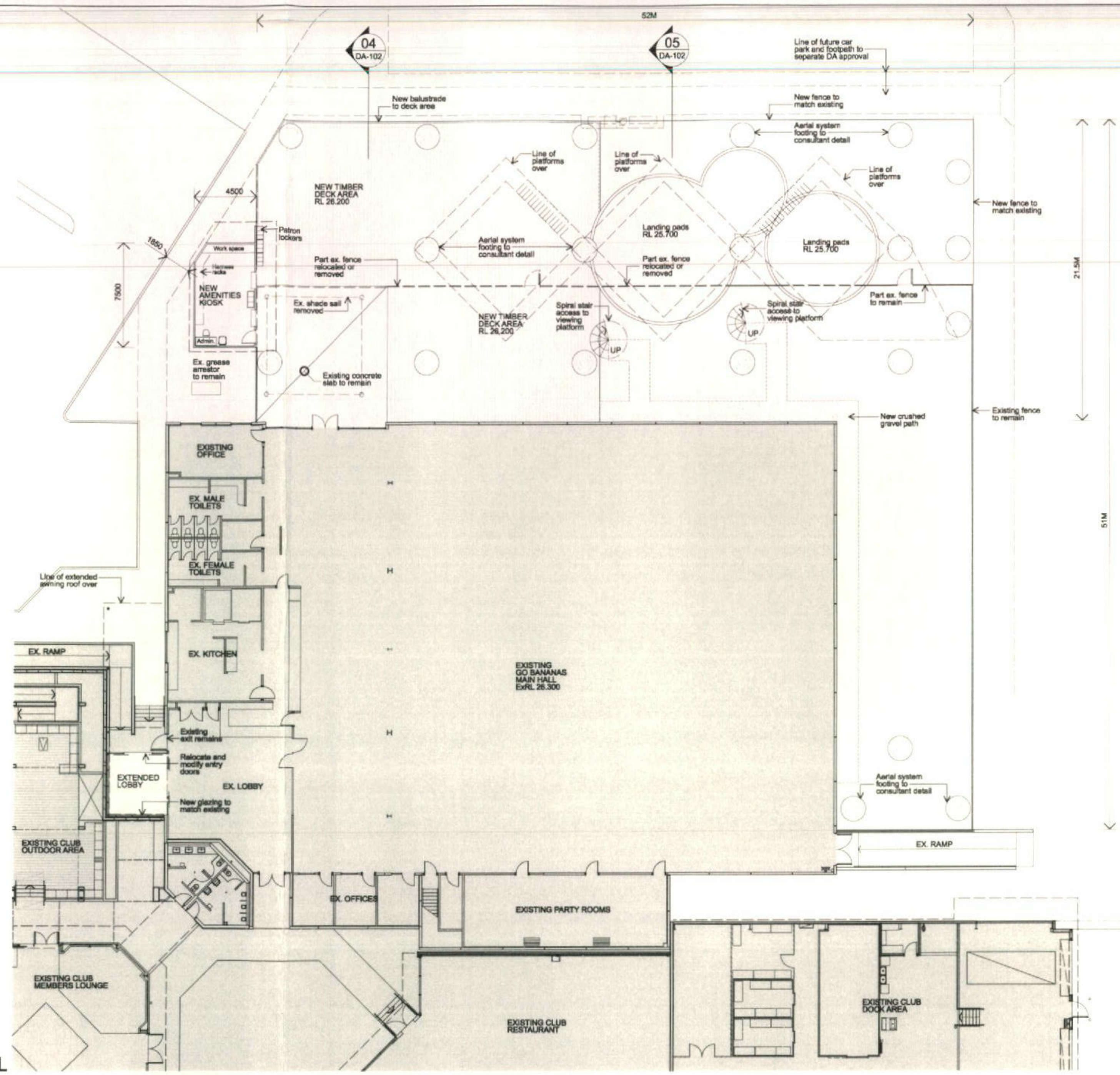
177Boronia_NorthStMarys_nearLeaguesClub-20130522_Sta_graphed

Appendix D

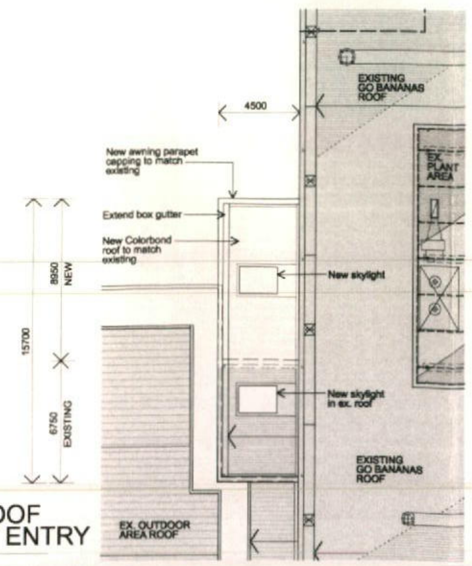
Architectural Drawings including Materials and Finishes and Photomontage – Curtin Architects and TouchCloud



01 SITE PLAN
SCALE 1:2000



02 GROUND LEVEL PLAN
SCALE 1:200

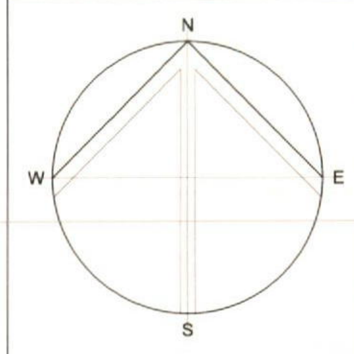


03 PART ROOF PLAN AT ENTRY
SCALE 1:200

10	20	30	40	50	100

THIS BAR REPRESENTS 100mm ON ORIGINAL

Curtin Bathgate and Somers accepts no responsibility for dimensions scaled off drawing. Check all copies and electronic drawings of any type for accuracy in scaling.



Issue	Amendment Description	Date
A	DA ISSUE	27.08.14

AMENDMENTS

1. Figured dimensions to be taken in preference to scaling.
2. Builder to check all dimensions on site where relevant and notify of any discrepancies.
3. All dimensions are given in millimetres except levels and drawings to scale 1:500 and smaller which are in metres.

CURTIN ARCHITECTS
CURTIN BATHGATE & SOMERS
PTY. LIMITED
ARCHITECTS
ABN 43 052 102 744
52 Atchison Street, St. Leonards NSW 2065
Tel:02 9437 1111 Fax: 02 9437 1199
e-mail: mail@curtinarchitects.com.au

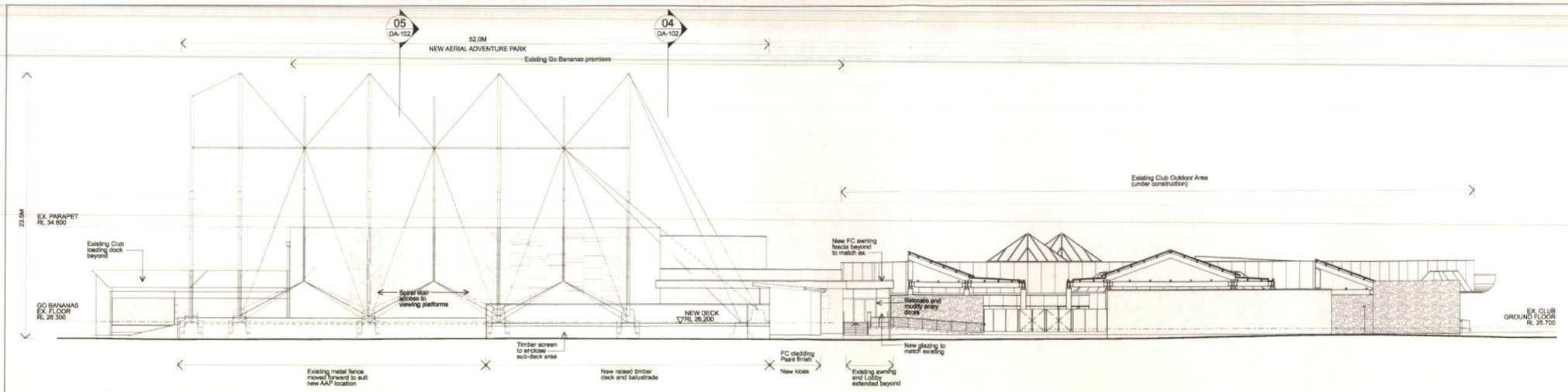
PROJECT:
GO BANANAS AERIAL ADVENTURE PARK
ST. MARYS RUGBY LEAGUE CLUB

DRAWING TITLE:
SITE PLAN
GROUND LEVEL PLAN
PART ROOF PLAN

DRAWN BY: JEH	SCALE: 1:2000, 1:200 @ A1
PROJECT No: 6449	DATE STARTED: AUGUST 2014
	DRAWING No: DA-101 ISSUE: A

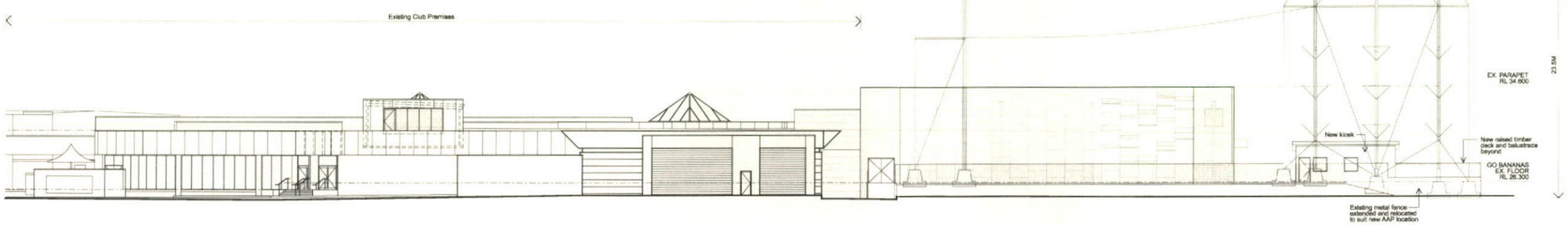
PLOT DATE: $DATE$ PLOT TIME: $TIME$ FILE NAME: $FILE$

...\Drawing Files\DA-101 Plans.dgn 27/08/2014 5:11:42 PM



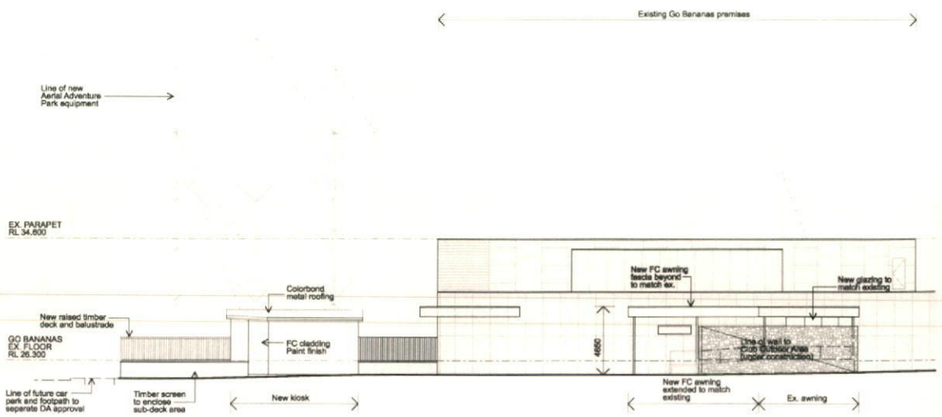
01 NORTH ELEVATION

SCALE 1:200



02 EAST ELEVATION

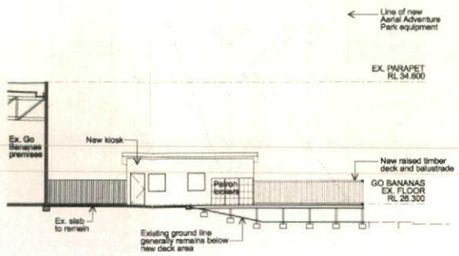
SCALE 1:200



03 PART WEST ELEVATION

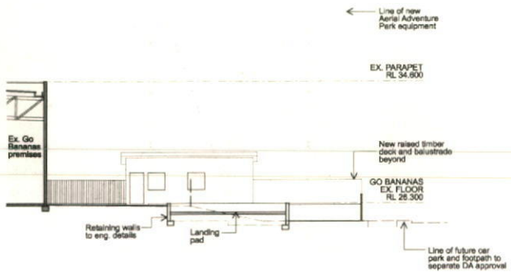
SCALE 1:200

ELEVATION TAKEN ALONG WALL AT ADJACENT NEW CLUB OUTDOOR AREA (CURRENTLY UNDER CONSTRUCTION AND OMITTED FOR CLARITY)



04 SECTION

SCALE 1:200



05 SECTION

SCALE 1:200

A	DA ISSUE	27.08.14
Issue	Amendment Description	Date

AMENDMENTS

1. Figured dimensions to be taken in preference to scaling.
2. Builder to check all dimensions on site where relevant and notify of any discrepancies.
3. All dimensions are given in millimetres except levels and drawings to scale 1:500 and smaller which are in metres.

CURTIN BATHGATE & SOMERS
PTY. LIMITED ABN 43 052 102 744
ARCHITECTS
CURTIN ARCHITECTS
52 Atchison Street, St. Leonards NSW 2065
Tel:02 9437 1111 Fax:02 9437 1199
e-mail: mail@curtinarchitects.com.au

PROJECT:
GO BANANAS AERIAL ADVENTURE PARK
ST. MARYS RUGBY LEAGUE CLUB

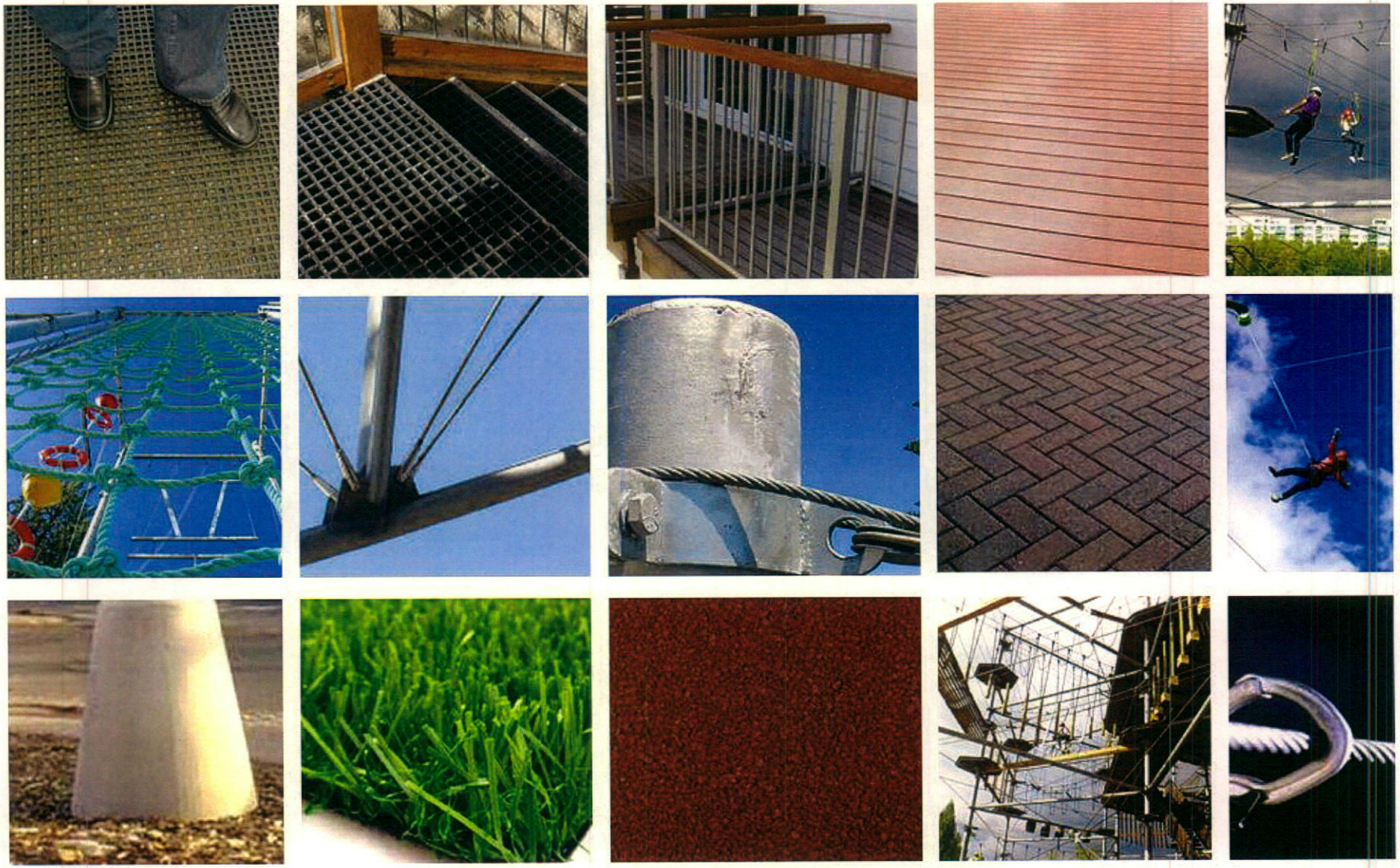
DRAWING TITLE:
ELEVATIONS SECTIONS

DRAWN BY: JEH	SCALE: 1:200 @ A1
PROJECT No: 6449	DATE STARTED: AUGUST 2014
	DRAWING No: DA-102 ISSUE: A

PLOT DATE: $DATE$ PLOT TIME: $TIME$

FILE NAME: $FILE$

...\DA-102 Elev and Sect.dgn 27/08/2014 5:11:43 PM



SAMPLE BOARD

TC^g
Touch Cloud Global Pty Ltd
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016
www.touchcloud.com.au

Go Bananas
Aerial Adventure Park

August 2014
SB AAP
003
DA AAP

SCHEDULE OF MATERIALS AND FINISHES

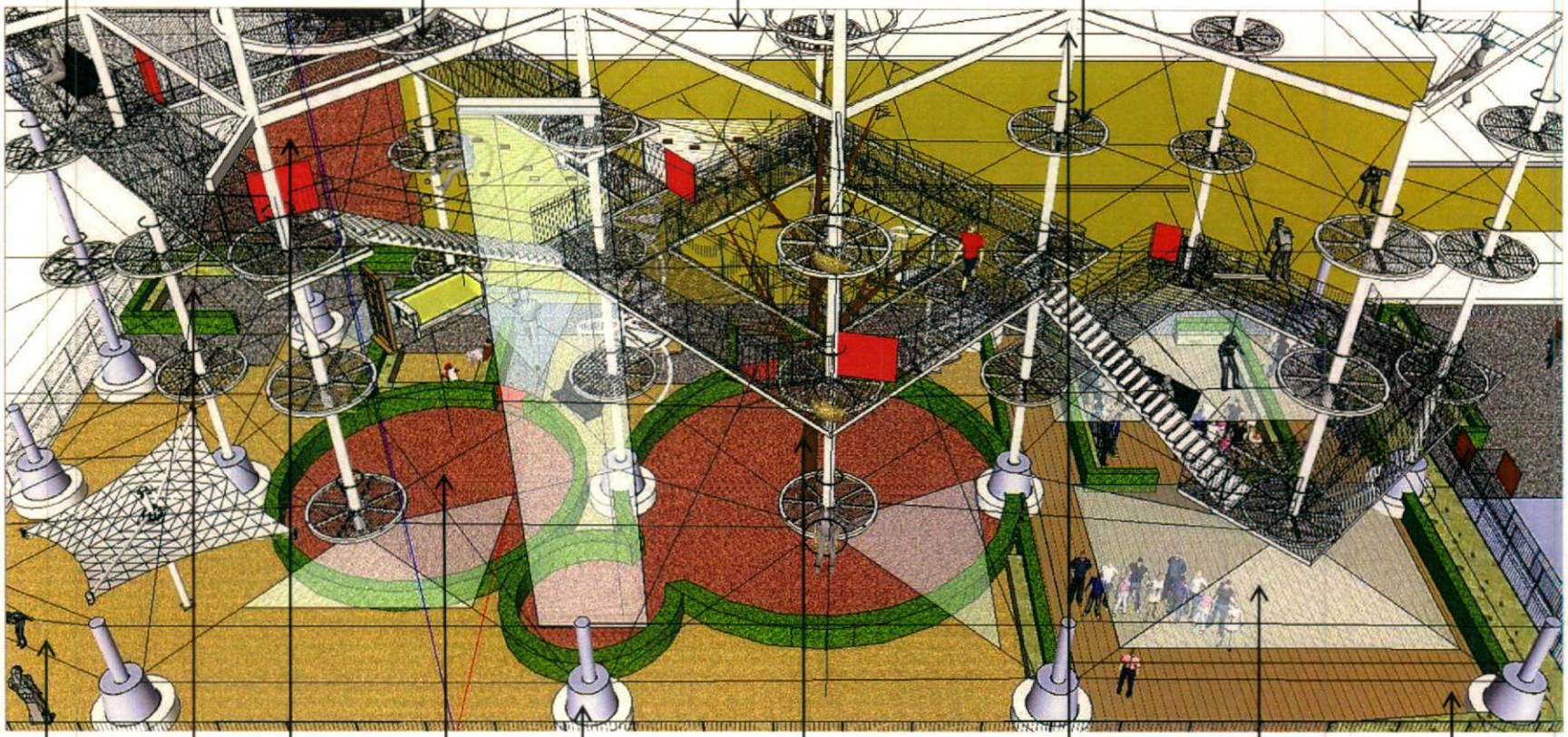
BALUSTRADE & PANELS
- IN-FILL 16MM VERTICAL RAILS (RAW GALVAINISED)
- HANDRAIL (RAW GALVAINISED)
- KICKPLATE (ALUMINIUM)

PLATFORM DECKS & STAIRS
- FRP MINI-MESH 13MM GRATING (GREY)

ARCHITECTURAL & ACTIVITY ROPE
- GALVANISED FSWR (RAW)
- GALVANISED FITTINGS & FASTENERS (RAW)

'POD' DECKS
- PERFORATED PLY LAMINATED IN GRIP ENHANCED FIBREGLASS (JARAH)

ACTIVITIES - 'CROSSINGS'
- ADVENTURE PLAYGROUND TYPE - CARGO NETS/ ROPE BRIDGES/ MONKEY BARS ETC (VARIETY OF MATERIALS & FINISHES)



GROUNDS
- LANSCAPED WITH GRASS & HARDENED PATH

PATHS
- PAVED (MATCH EXISTING OUTDOOR AREA)

ZIP LANDING ZONE
- ARTIFICIAL TURF (GREEN)

SOFTFALL
- WET POUR RUBBER (RED EARTH)

COLUMN BALLAST FOOTINGS
- CONCRETE (RAW)

ARCHITECTURAL CLIMBING STRUCTURE
- BESPOKE TREE-LIKE (GAL STEEL &HARDWOOD)

COLUMNS, BEAMS & TRUSSES
- HOT DIPPED GALVANISED STEEL (RAW)

SHADE SAILS
- COMMERCIAL SHADE MEMBRANE (WHITE)

DECKING
- MODWOOD (JARAH)

TC^g
Touch Cloud Global Pty Ltd
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016
www.touchcloud.com.au

Go Bananas
Aerial Adventure Park

August 2014
SMF AAP
001
DA AAP

PHOTOMONTAGE

TC^g
Touch Cloud Global Pty Ltd
Unit 4, 4-6 Tengah Crescent
PO Box 135 Mona Vale NSW 1660
Tel: +61 2 9979 1016
www.touchcloud.com.au

Go Bananas
Aerial Adventure Park

August 2014
PM AAP
002
DA AAP

Appendix E BCA Report – BM+G

BLACKETT MAGUIRE+ GOLDSMITH

28 August 2014

The General Manager
Penrith City Council
PO BOX 60
PENRITH NSW 2751

Attn: The General Manager

Dear Sir/Madam,

REFERENCE: CNR FORRESTER & BORONIA ROAD, NORTH ST MARYS NSW 2760
GO BANANAS AERIAL ROPE ADVENTURE PARK
DEVELOPMENT APPLICATION TO COUNCIL
BUILDING CODE OF AUSTRALIA (BCA) CAPABILITY STATEMENT

Blackett Maguire + Goldsmith Pty Ltd have been commissioned to carry out an assessment of the proposed development against the requirements of the National Construction Code Series (Volume 1) - Building Code of Australia (BCA) 2014.

It is understood that the proposed development will be subject to a Development Consent application and this BCA Capability Statement will form part of the submission to Penrith City Council for their consideration as part of the DA determination.

The following BM+G Team Members have contributed to this assessment:

+ Steven Rodriguez (Senior Building Consultant/A1 Accredited Certifier)
+ Brian Maguire (Director/PCA/A1 Accredited Certifier)

Our assessment of the concept design documentation was based on the following:

+ National Construction Code Series (Volume 1) Building Code of Australia 2014 (BCA)
+ Guide to the Building Code of Australia 2014 (BCA Guide)
+ Access to Premises – Buildings Standards 2010 (Access Code)
+ Environmental Planning and Assessment Act 1979 (EP&A)
+ Environmental Planning and Assessment Regulation 2000 (EP&AR).
+ Aerial Adventure Rope Park Pre DA Brief prepared by Touch Cloud Global Pty Ltd dated April 2014
+ Correspondence issued by Touch Cloud regarding compliance queries dated 27 August 2014.
+ Architectural plans prepared by Curtin Bathgate Architects numbered DA-101(A) & DA-102(A) dated 27 August 2014.

STATEMENT OBJECTIVES:

The objectives of this statement are to:

+ Confirm that the referenced documentation has been reviewed by an appropriately qualified Building Surveyor and Accredited Certifier.
+ Undertake an assessment of the proposed architectural design documentation against the Performance Requirements of National Construction Code Series 2014 (Volume 1) Building Code of Australia (BCA).

Address: Suite 2.01, 22-36 Mountain St Ultimo NSW 2007
Postal: PO Box 167 Broadway NSW 2007
ABN: 18 408 985 851
Contact: Ph: 02 9211 7777 Fax: 02 9211 7774 Email: admin@bmplusg.com.au

- Accompany the submission of the DA to Penrith City Council to enable the Consent Authority to be satisfied that the building design is capable of complying with the BCA and that subsequent compliance with the fire & life safety, accessibility, health & amenity and energy efficiency requirements of the BCA will not give rise to further design changes to the building which may necessitate the submission of any unforseen applications under Section 96 of the Environmental Planning and Assessment Act, 1979.
- Identify any BCA compliance issues that require resolution at the Construction Certificate stage.
- Enable the certifying authority to satisfy its statutory obligations under Clause 143(1) (3) & Clause 145 of the Environmental Planning and Assessment Regulation, 2000.
- Enable the certifying authority to satisfy its statutory obligations under Clause 17 & 18 of the Building Professionals Regulation 2007.
- This Capability Statement is not intended to identify all issues of compliance or non-compliance with the BCA with such other issues to be appropriately addressed prior to issue of the Construction Certificate.

Building Description:

The proposal development involves the extension of the Go Bananas premises entailing the following works:

- Demolition of the external shade sails and fencing structures situated at the rear of Go Bananas main hall areas (North Side).
- Construction of a new external timber deck structure to the rear of the Go Bananas main hall areas (North Side).
- Erection of an aerial rope adventure park structure (North & East Sides).
- Construction of a new external standalone amenities kiosk (North Side).
- Enclosure of the existing entry lobby and extension of the existing awning entry structure to Go Bananas (West Side).
- New external fencing, landscaping, pathways & ancillary works (North & East Sides).

Building Code of Australia 2014 Compliance:

The proposed building will be subject to compliance with the relevant requirements of the BCA as in force at the time the application for the Construction Certificate is made. In this regard it is assumed that the Construction Certificate application will be made prior to the 1st May 2015, as such BCA 2014 Version applies to the subject development.

Arising from our preliminary assessment of the proposed development against the Deemed-to-Satisfy provisions and Performance Requirements of National Construction Code Series – Volume 1 – Building code of Australia 2014, the following key compliance matters are noted.

The principal building characteristics as defined by the BCA are as follows:

BCA Classification:	Class 10b Aerial Structure, Deck and Awning Class 9b (Ancillary Assembly Out-Building & New Entry)
Rise in Storeys:	Two*
Storeys Contained:	Two
Type of Construction:	Type B Construction*
Effective Height:	Less than 12m
Fire Compartment Size:	Complies with C2.2 Limitations (as applicable to Type B)
Climate Zone:	Energy Efficiency Zone 6

**Note: The existing Go Bananas component forms part of the St Marys Rugby Leagues Club premise. The existing premise has a rise in storeys of 2 and has fire compartments with floor areas not exceeding 5,000msq and as such is of Type B Construction.*

The detailed BCA desktop assessment was carried out against the provisions of the BCA. It is noted that the proposed development must comply with the relevant requirements and this can be achieved by complying with the following:

a) Complying with the Deemed-to-satisfy (DTS) Provisions; or

b) Formulating an Alternative Solution which –

   i) Complies with the performance requirements; or

   ii) Is shown to be at least equivalent to the DTS provisions; or

c) A combination of the above.

In accordance with the above, BM+G can verify that the proposed building design will entail a combination of compliance with the DTS provisions and Performance Requirements of the BCA, by the development and justification of Performance Based Alternative Solutions.

The following matters will be addressed accordingly with the Construction Certificate submission:

+ Structural adequacy of the existing building is capable of accommodating the new works. Structural performance of the new structures and building elements will comply with BCA Part B and all relevant Australian Standards.

+ Termite mitigation measures associated with the external timber deck structure will comply with BCA and AS3600.1.

+ Bushfire consultant will provide certification to confirm compliance with AS3959-2009.

+ Fire resistance performance of building elements will be addressed to comply with BCA Part C and AS1530 (as applicable).

+ Egress from the existing building has been assessed and is not affected. Details of break out gates in the perimeter fence will be noted on the CC drawings to ensure compliance with BCA Part D1 accordingly.

+ The spiral stairs and elevated viewing platforms will strictly comply with the DTS provisions of the BCA (going and risers, gaps in risers and balustrades, handrails and balustrade design, widths and heights along paths of travel and slip resistance classifications).

+ The elevated stairs and raised platforms and decks associated with the Aerial Rope Structure will comply with the BCA (to a certain degree), such as going and riser dimensions and heights of barriers. *Note: Management In Use Plans & Procedures will be developed prior to occupation and use to address occupant safety whilst utilising the Aerial Rope Structure.*

+ Accessibility compliance will be assessed to ensure all new works comply with BCA Part D3 and AS1428.1-2009 accordingly. *Note: Performance Based Alternative Solutions will be prepared to address departures associated with the spiral stairs, viewing platforms and access throughout the Aerial Rope Adventure Park.*

+ An accessibility consultant will review the 'effected part' provisions associated with the Access to Buildings Premises Standard 2010 and provide upgrade advice where necessary.

+ Base building fire services will be extended throughout the enclosed areas such as the new entrance lobby & Amenities kiosk to ensure compliance with BCA Part E.

+ Lighting and Ventilation provisions will be installed to the enclosed areas such as the new entrance lobby & Amenities kiosk to ensure compliance with BCA Part F.

+ Energy efficiency provisions will be considered within the enclosed areas such as the new entrance lobby & Amenities kiosk to ensure compliance with BCA Part J.

CLAUSE 94/143 OF THE ENVIRONMENTAL PLANNING & ASSESSMENT REGULATION 2000

Pursuant to Clause 94 of the Environmental Planning and Assessment Regulation 2000, a building or development which involves the rebuilding, alteration, enlargement or extension (amongst other criteria) must not be carried out unless the Consent Authority (Council) is satisfied that the measures contained within a building are;

i) adequate to protect persons using the building and facilitate their egress from the building in the event of a fire and

ii) ii) adequate to restrict the spread of fire between buildings.

In this regard it is noted that the existing building has been subject to a Fire & Life Safety Upgrade imposed by Council under their DA Consent No.DA06/1840, dated 18 July 2007 which included major upgrade works to the existing premises. Additionally we note that the Go Bananas component was constructed and approved in 2009/2010 which complies with the DTS provisions of the BCA at the time; and which are relatively similar to those stipulated under BCA 2014 when considering fire and life safety.

Given the above and the fact that the works are relatively minor in nature it is suggested that no further consideration for upgrade pursuant to the provisions of Clause 94 are required.

In addition to the fire protection requirements identified above, the provisions of Clause 143 of the EP&A Reg.2000 require the PCA at the Construction Certificate assessment stage to consider and be satisfied that the structural capacity of the building and that its new use will be acceptable. This will also be justified by the submission of appropriate certification furnished by the Structural Engineer with the Construction Certificate application stage.

PROPOSED ESSENTIAL FIRE & OTHER SAFETY MEASURES:

Based on the information provided to date, the following fire safety measures are required to be incorporated / extended into the new design to satisfy the requirements of the BCA.

Statutory Fire Safety Measure	Design/Installation Standard	Existing Measure	Proposed Measure
Automatic Fail Safe Devices	BCA Clause D2.21	✓	
Automatic Fire Detection & Alarm System	BCA Spec. E2.2a & AS 1670.1 - 2004	✓	✓
Emergency Lighting	BCA Clause E4.4 & AS 2293.1 - 2005	✓	✓
Exit Signs	BCA Clauses E4.5, E4.6 & E4.8 and AS 2293.1 - 2005	✓	✓
Fire Blankets	AS 3504 - 1995 & AS 2444 – 2001	✓	
Fire Dampers	BCA Clause C3.15, AS 1668.1 - 1998 & AS 1682.1 & 2 - 1990	✓	
Fire Doors	BCA Clause C2.12, C2.13, C3.5, C3.6 & C3.7, and AS 1905.1 – 2005; & Fire Safety Engineering Report No.2407600-RPT01-4 prepared by Exova Warringtonfire Aus Pty Ltd, dated 6 October 2010; & Fire Safety Engineering Report No.29087700-RPT01 - 2 prepared by Exova Warringtonfire Aus Pty Ltd, dated 23 May 2014	✓	
Fire Hose Reels	BCA Clause E1.4 & AS 2441 – 2005	✓	
Fire Hydrant Systems	Clause E1.3 & AS 2419.1 - 2005	✓	
Fire Shutters / Curtains	AS1905.2; & Fire Safety Engineering Report No.29087700-RPT01 - 2 prepared by Exova Warringtonfire Aus Pty Ltd, dated 23 May 2014	✓	

Statutory Fire Safety Measure	Design/Installation Standard	Existing Measure	Proposed Measure
Fire Seals	BCA Clause C3.15, AS 1530.4 & AS4072.1 - 2005	✓	
Fire Walls	BCA C2.7; & Fire Safety Engineering Report No.29087700-RPT01 – 2 prepared by Exova Warringtonfire Aus Pty Ltd, dated 23 May 2014	✓	
Mechanical Air Handling Systems (Auto Shutdown of A/C Units)	BCA Clause E2.2, AS/NZS 1668.1 – 1998 & AS 1668.2 – 1991	✓	✓
Paths of Travel	EP & A Regulation Clause 186; & Fire Safety Engineering Report No.2407600-RPT01-5 prepared by Exova Warringtonfire Aus Pty Ltd, dated 6 October 2010	✓	✓
Portable Fire Extinguishers	BCA Clause E1.6 & AS 2444 – 2001	✓	✓
Sliding Fire Doors	BCA Clause C3.6 & AS 1905.1 – 2005	✓	
Smoke Hazard Management Systems (smoke spill fans Auditorium)	1668.2	✓	
EWIS – and Sound Systems and Intercom Systems for Emergency Purposes	AS 2220; and BCA Clause E4.9 & AS 1670.4 – 2004 & AS 4428.4 – 2004	✓	✓
Wall wetting Drenchers	BCA C3.2; & Fire Safety Engineering Report No.29087700-RPT01 – 2 prepared by Exova Warringtonfire Aus Pty Ltd, dated 23 May 2014	✓	
Warning & Operational signs	Section 183 of the EP & A Regulations 2000, AS 1905.1 - 2005, BCA Clause C3.6, E3.3 & H101.8	✓	
Fire Safety Engineering Report No.2407600-RPT01-4 prepared by Exova Warringtonfire Aus Pty Ltd, dated 6 October 2010. Including Alternative Solutions for; ▪ Extended distances between alternative exits, ▪ Directional swing of horizontal exit doors, ▪ Excessive fire compartment sizes.	BCA Performance Requirements CP1, CP2, DP2 & DP4	✓	
Fire Safety Engineering Report No.29087700-RPT01 - 2 prepared by Exova Warringtonfire Aus Pty Ltd, dated 23 May 2014. Including Alternative Solutions for; ▪ Rationalisation on the method of fire separation between fire compartments.	BCA Performance Requirements CP1 & CP2	✓	

CONCLUSION:

This report contains an assessment of the referenced architectural documentation for the proposed Aerial Rope Adventure Park against the Deemed-to-Satisfy provisions & Performance Requirements of the National Construction Code Series (Volume 1) Building Code of Australia 2014.

In view of the above assessment we can confirm that subject to the above measures being appropriately considered, that compliance with the Deemed to Satisfy Provisions and Performance Requirements of the BCA are readily achievable.

We trust that the above submission is of assistance to Council and we are confident that any design modifications required to the building in order to satisfy the fire and life safety, accessibility requirements, health & amenity requirements and the energy efficiency provisions of the BCA will not necessitate the need for further submission for a further application under Section 96 of the Environmental Planning & Assessment Act 1979.

Kind Regards,

Steven Rodriguez
Building Regulations Consultant/A1 Accredited Certifier
Blackett Maguire + Goldsmith Pty Ltd

Appendix F Overland Flow and Drainage System Impact Report – TTW

Taylor Thomson Whitting (NSW) Pty Ltd Consulting Engineers ACN 113 578 377
48 Chandos Street St Leonards NSW 2065 PO Box 738 Crows Nest NSW 1585
T 61 2 9439 7288 F 61 2 9439 3146 ttwsyd@ttw.com.au www.ttw.com.au

26 August 2014 141238

RE: St Mary's Rugby Leagues Club, Go Bananas Aerial Adventure Park – Overland Flow and Drainage System Impact Report

Taylor Thomson Whitting was engaged by Pricewaterhouse Coopers who is acting as the Project Manager on this project. This report is to provide overland flowpath analysis for the proposed Go Bananas Aerial Adventure Park (AAP) works within the St Marys Leagues Club premises. Refer Figure 1.0 for site plan.

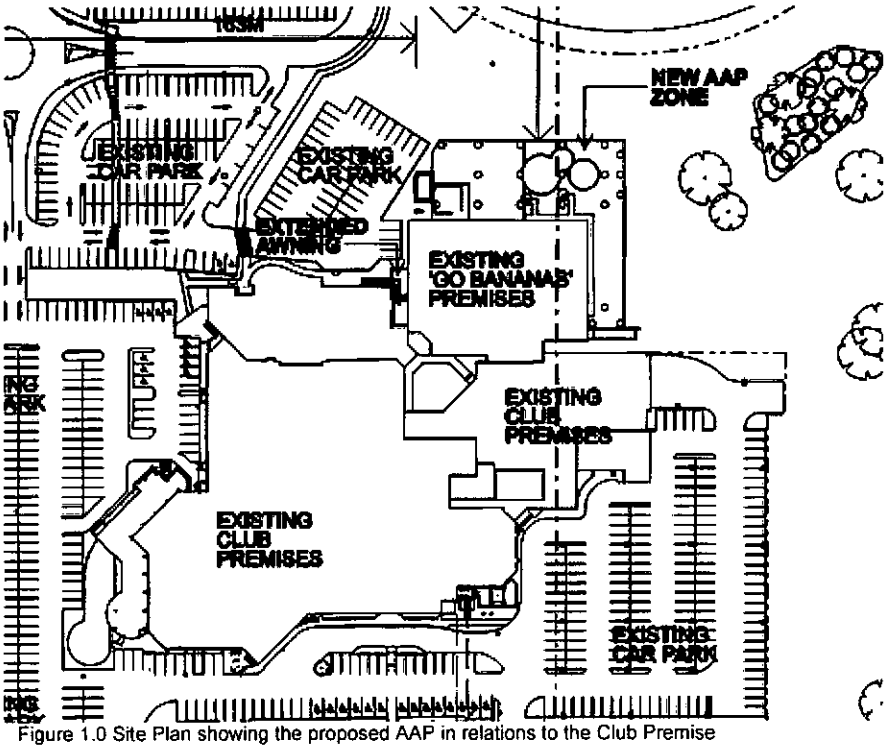


Figure 1.0 Site Plan showing the proposed AAP in relations to the Club Premise

The main objective of this report is to provide overland flowpath analysis in response to Penrith City Council's pre-DA comments received by the club which is shown in figure 2.0 below.

ENGINEERING

- Separate discussions with Council's Engineers is occurring to consider and resolve identified drainage and overland flow requirements as a result of a separate Development Application on the site. The modeling undertaken as part of this separate application will be required to consider the proposed works (Aerial Adventure Park). Alternatively any application pursued for the Aerial Adventure Park will need to address impacts on the sites overland flow and drainage system.

Figure 2.0: Pre-DA Council advice

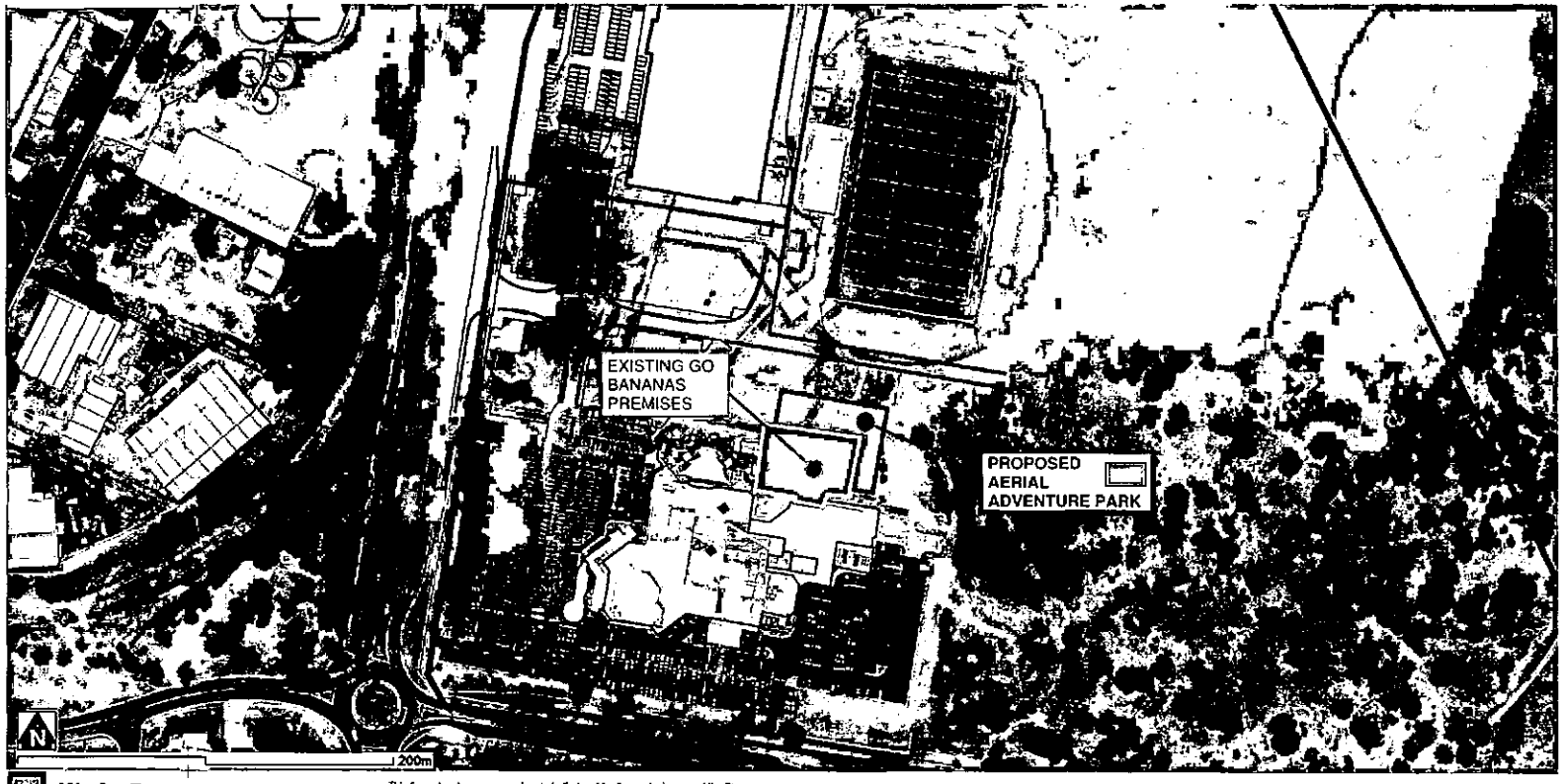
TaylorThomsonWhitting

Structural
Civil
Traffic
Facade
Engineers

ROPES CREEK AND SOUTHERN CATCHMENT FLOODING(MAINSTREAM)

Figure 3.0a below shows Worley Parson's Ropes Creek's Flood Extent Scenario during the 100-year average recurrence interval (ARI) storm event.

Our desktop analysis shows the proposed AAP site is outside the 100-year ARI flood extent and any changes to the existing levels will not have any impact on the Ropes Creek flood regime.



WorleyParsons
resources & energy

This figure has been prepared on behalf of and for the exclusive use of the St Marys Leagues Club, and is subject to and issued in accordance with the agreement between the St Marys Leagues Club and WorleyParsons. WorleyParsons accepts no liability or responsibility whatsoever for it in respect of any use of or reliance upon this figure by an third party.

PREDICTED FLOOD LEVELS AT THE PEAK OF THE 100 YEAR RECURRENCE FLOOD FOR EXISTING CONDITIONS [ROPES CREEK FLOODING SCENARIO]

Figure 3.0a: Ropes Creek 100-Yr ARI Flooding Extent

Figure 3.0B below shows Worley Parson's "Local Catchment" Flood Extent Scenario during the 100-year average recurrence interval (ARI) storm event. The "Local Catchment" refers to the upstream catchment to the south of the club where overland flow traverses the south-western premises of the club.

Our desktop analysis shows the proposed AAP site is outside the 100-year ARI flood extent and any changes to the existing levels will not have any impact on the "Local Catchment" flood regime.

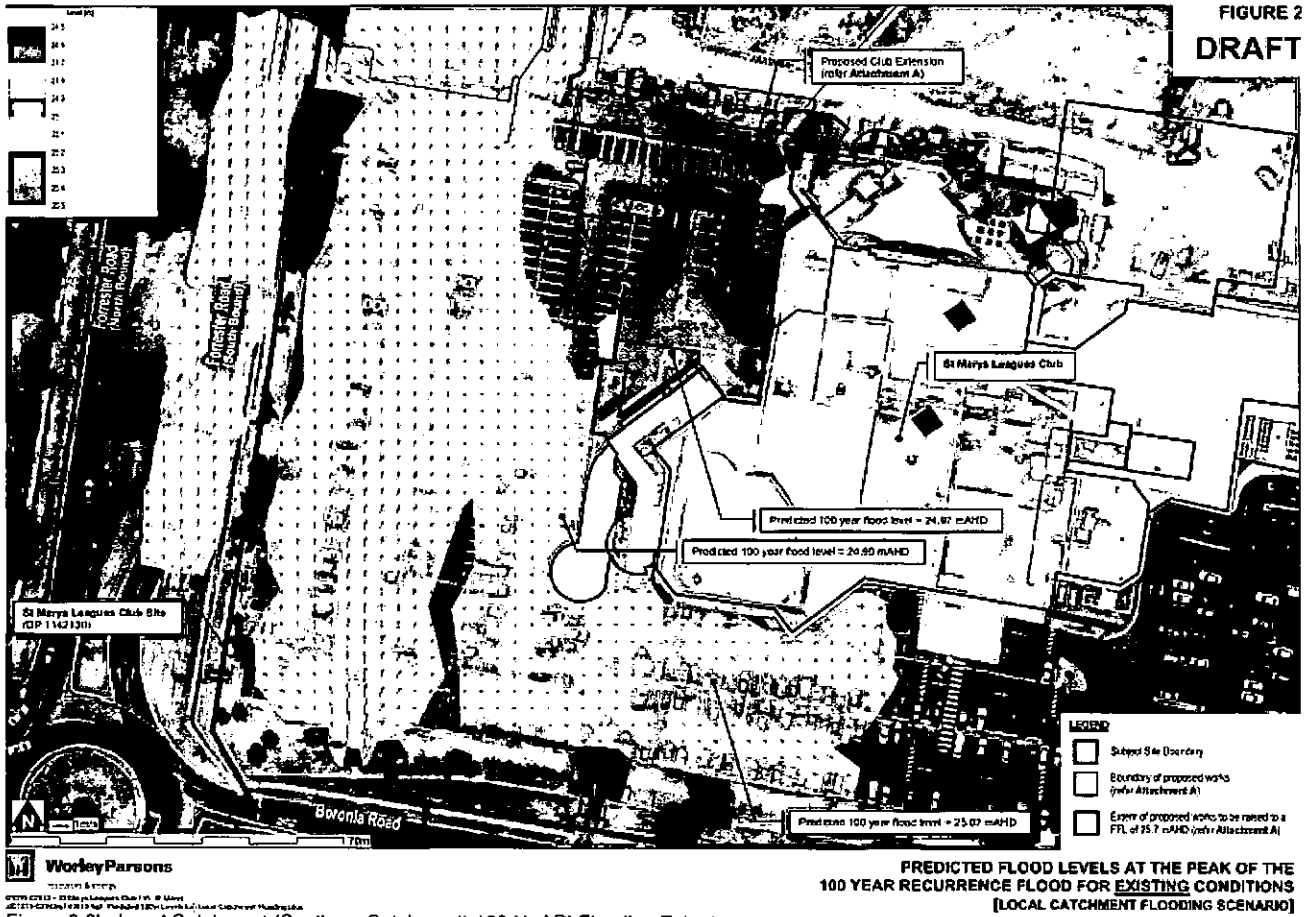


Figure 3.0b: Local Catchment (Southern Catchment) 100-Yr ARI Flooding Extent

OSD and SITES OVERLAND FLOWPATH REGIME

The current site generally falls in north to north-easterly direction towards the existing football ground. The existing site is currently fully pervious. The proposed development will increase the impervious area. However, the proposed site is part of the catchment that falls towards the dam located to the north of the club. Based on the previous developments within the club, we understand that Penrith City Council does not require on-site detention (OSD) for catchments draining to the dam.

The proposed AAP works will eventually tie-in to future carpark expansion works immediately to the north and east of the proposed site. The carpark expansion is subject to separate development application (DA) associated with the Club's proposed Motel and Fitness Centre to the East as shown in Figure 4. (For Clarity refer to **Appendix A**).

TTW's analysis of the PPA's proposed finished surface levels indicate a seamless connection with the future carpark levels in terms of overland flowpath.

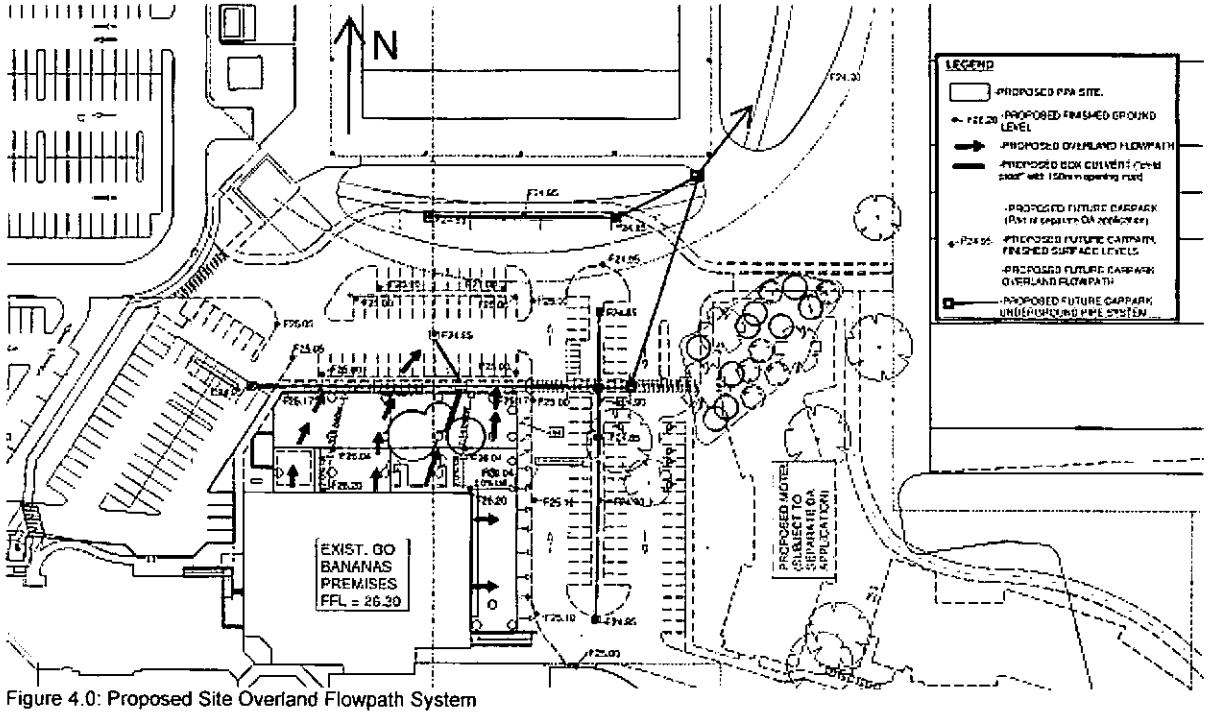
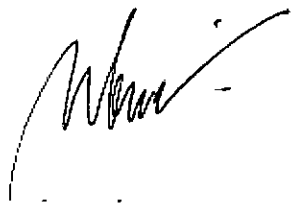


Figure 4.0: Proposed Site Overland Flowpath System

We recommend that:

- the development to generally adopt proposed finish ground levels shown in Figure 4 to ensure the site's overland flowpath seamlessly tie-in with the rest of the site's existing and future overland flowpath system.
- the existing site's underground stormwater pipe system within the PPA site be adjusted during detailed design stage where it's necessary to avoid physical conflict with proposed structures such as footings and to suit the new finished levels shown in figure 4.0..

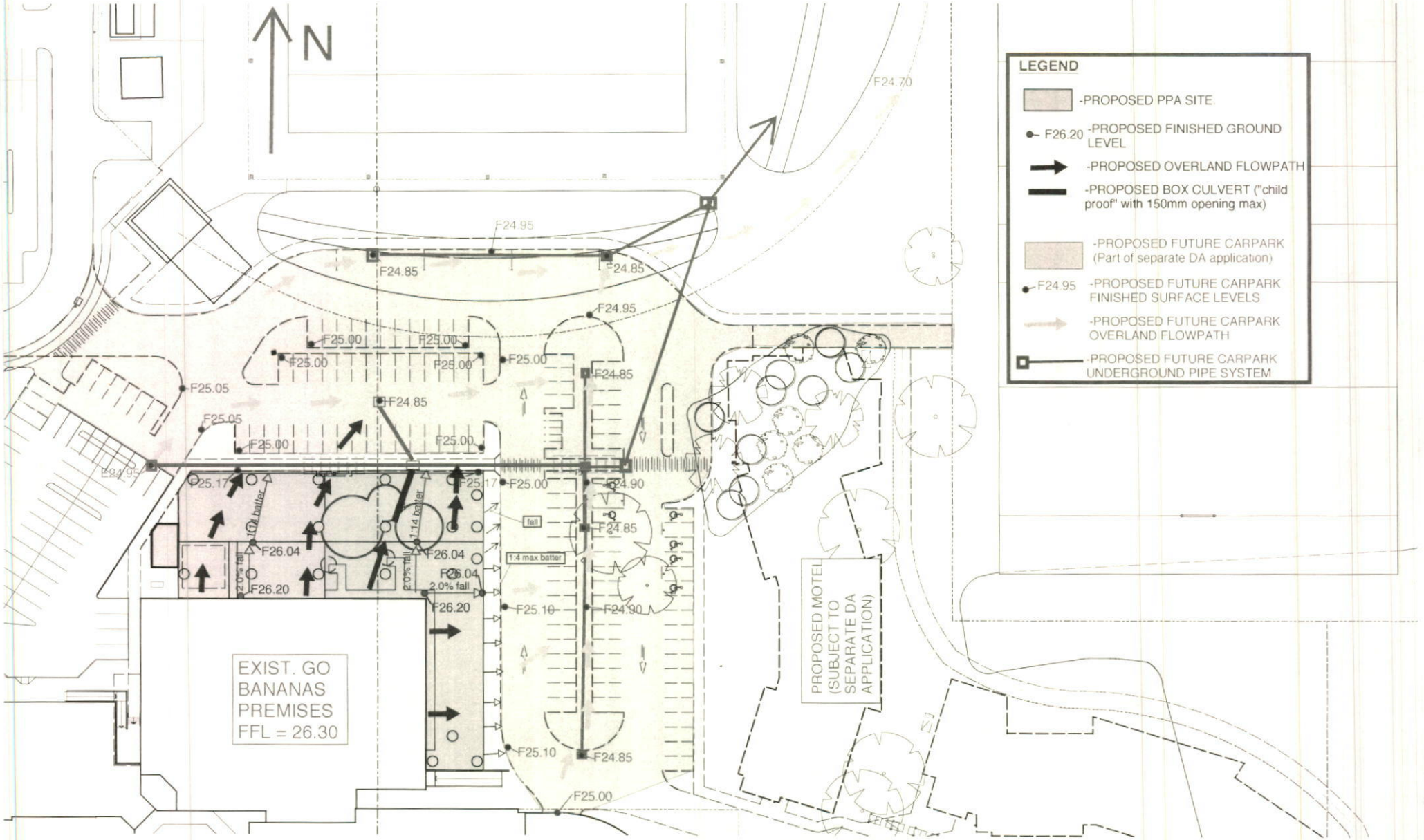
Yours faithfully,
TAYLOR THOMSON WHITTING
(NSW) PTY LTD



Nem Biason Jr
Associate

P:\2014\1412\141238\Reports\TTW\140826_Stormwater Statement_GO Bananas.doc

APPENDIX A



Appendix G Structural Design – Partridge

PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT

4th July 2014

Vertical Innovations International Pty Ltd
PO Box 135
Mona Vale, NSW 2103
AUSTRALIA

Attention: Mr Kent Marchant/Mr Matt Scott

STATEMENT OF STRUCTURAL DESIGN INTENT & FEASIBILITY

Project:	SkyMate II Ropes Course and Zip Line
Site Address:	St Marys Leagues Club, St Marys NSW 2760

1.0 INTRODUCTION

Partridge Event Pty Limited (PE) confirm that we have been appointed as structural engineers for the proposed project **'SkyMate II'** Ropes Course and Zip Line' (Refer to attached Vertical Innovations drawings, Appendix A) to be located at St Marys Leagues Club, St Marys NSW, with responsibility for structural design certification of the installation and its support.

As part of the Development Application (DA) submission, we provide the following structural feasibility statement for the proposed installation.

We advise that we have carried out a preliminary structural design assessment of the superstructure and footings for the proposed 'SkyMate II', and based on the results of this assessment **we are satisfied that the project is structurally feasible.**

2.0 ASSESSMENT OF STRUCTURE OF SCULPTURE

The structure is a ropes course over 3 levels approximately 21 m high and plan dimensions of 50 m x 19 m, with a 30 m long zip line. The rope course is accessed by a staircase between walkways and ground at each of the 3 levels. The structure is supported on four central columns and two edge columns that all sit on ground. These columns also suspend six exterior columns. The structure is restrained by the walkways, a grid of beams above the third level and a series of interconnecting stainless steel cables with a minimum capacity in the order of 10 tonne SWL. There is a 'pod' platform around the columns at each level which creates rope access. Concrete blocks are located at the base of the main columns and around the exterior of the structure to provide ballast. In our experience working with similar structures, the diameter of the main columns would most likely be in the order of 250-300 mm and the diameter of the hanging columns would likely be in the order of 150-200 mm.

Level 5, 1 Chandos Street, St Leonards NSW 2065 Australia
t 612 9460 9000 f 612 9460 9090 e partridge@partridge.com.au
www.partridge.com.au
Partridge Structural Pty Ltd – 73 002 451 925
Partridge Event Pty Ltd – 50 139 601 433
Partridge Remedial Pty Ltd – 89 145 990 521

PE has carried out a preliminary structural analysis of the structure in accordance with Australian Standards and we confirm that the steel structure and restraint cables are adequate to support all loads required by the Building Code of Australia and Australian Standards including the wind loading for the site assessed from AS/NZS 1170.2 'Wind Actions'. We confirm the following design principles and framing:

The lateral stability of the structure is achieved using knee braces between the main columns and platform beams and bracing cables to ballast blocks and piers. Additional bracing cables have been suggested by PE and are indicated in Appendix B.

Walkways: Main beams supporting the walkway platforms are designed as truss beams for structural efficiency and aesthetics.

Live Loading:

- 3 kPa on platforms + 500kg on every pod. This allows for a total of 100 persons active on the structure plus an additional 150 people spread across the access walkway platforms.
- 50-60kg equipment loading applied at rope crossings

Wind loading and wind management policy:

- Current ultimate wind load based on terrain category 2.5- adjacent to open areas within a suburban setting; a 20YR design life (wind speed = 41 m/s).
- Initial design is based on a serviceability wind speed of 20 m/s (37 knots = 72km/h). This is the wind load at which all people must be evacuated and activity items on the platforms must be removed. This will be included in a wind management plan for the use of the structure.

Cable Loads:

- Occur simultaneously on all levels
- Tension forces in impact cables are based on full scale test loading by Vertical Innovations.

Footings:

We have reviewed the preliminary geotechnical information prepared by Brink & Associates for the site and carried out a preliminary structural assessment of a footing system suitable to support the structure. The footings will be a mix of high level 'ballast' footings (in the form of concrete seats) which anchor the main cables and bear on natural alluvial soil (below existing fill) close to the surface (from BH1 & 2 the natural ground is approximately 1.2 m below current ground level) and concrete pier foundations under the main columns founded in stiff sandy clay. We have based our footing assessment on a minimum allowable soil bearing capacity of 100 kPa in the natural alluvial soil and 300kPa (with 30 kPa shaft adhesion) in natural clays.

The exposed concrete in the ballast seats will have a suitable architectural finish to AS3610 to provide a good level of aesthetic finish.

Materials
The superstructure will be fabricated from materials with a good serviceable life suitable for the location. Materials include galvanised structural steel, grade 316L stainless steel cables and durable deck materials for all walkways. The materials should perform satisfactorily under a normal maintenance regime.

The hold down bolts attaching the base of the structure to the concrete footing will be heavy duty galvanised steel.

Documentation:
Drawings: 01 to 04, prepared by Vertical Innovations. Appendix A
Structural Analysis and Structural Sketches: prepared by Partridge Event Pty Ltd. Appendix B
Geotechnical Report-extract prepared by Brink & Associates, prepared for St Marys Leagues Club, dated 22nd October 2007. Appendix C

4.0 CONCLUSION

PE are satisfied that the proposed structural framing for the **'SkyMate II'** Ropes Course and Zip Line' will meet the requirements of the BCA and Australian Standards if the structure is fabricated and installed as described above and documented on the attached preliminary sketch drawings.

Prior to fabrication PE will carry out final detailed structural design and documentation and after installation provide a 'Structural Design and Installation' certificate.

Signed,

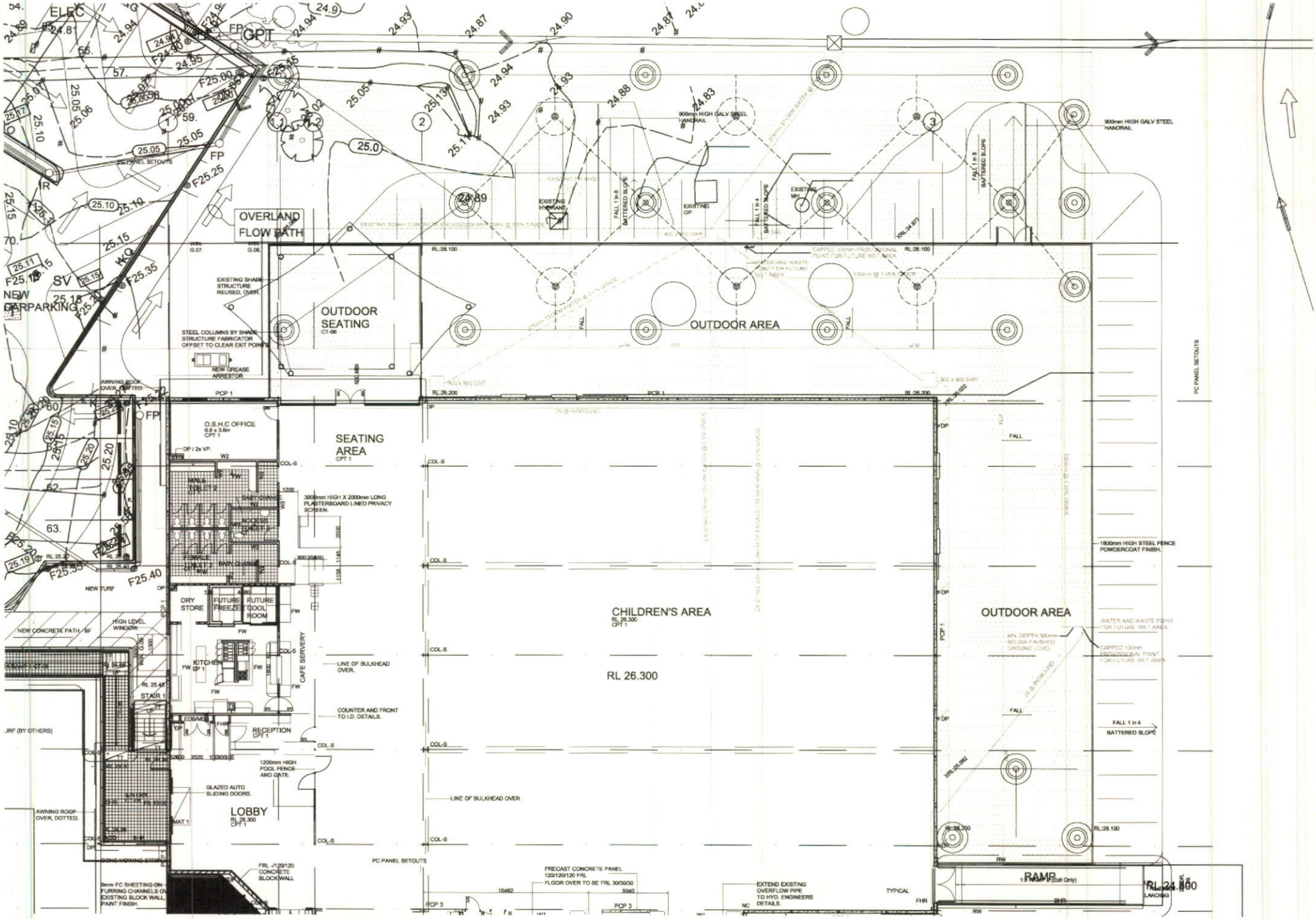
Eamonn Madden
BE MSc(Struct) MIEAust CPEng
NPER(Structural)
Director

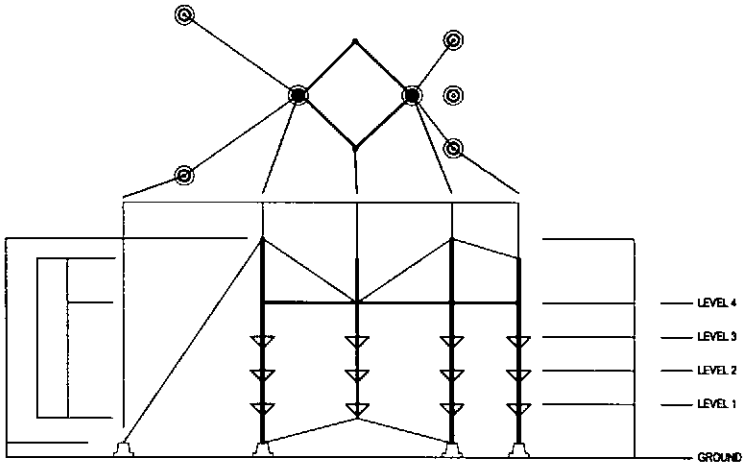
For and on behalf of:
Partridge Event Pty Ltd

PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT

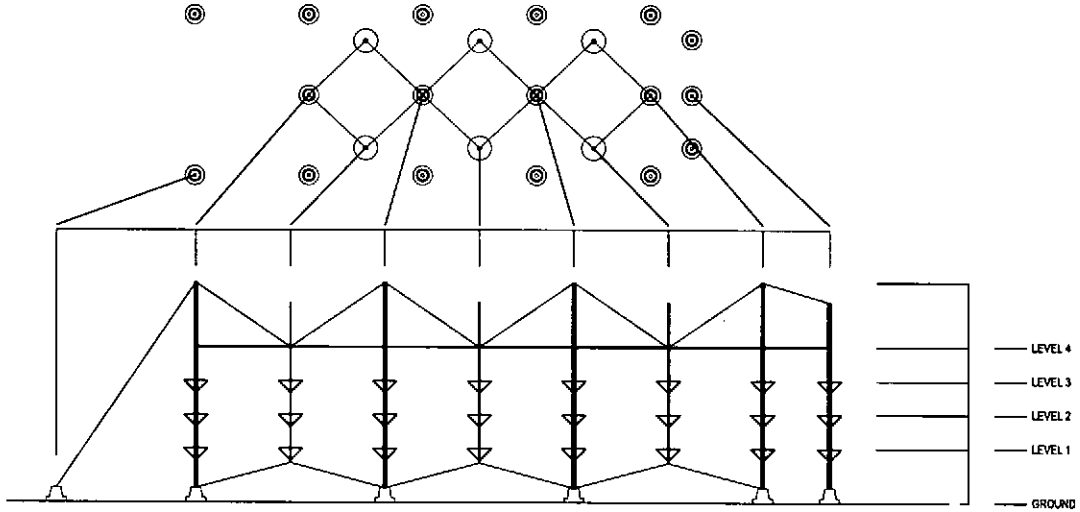
APPENDIX A
SkyMate Drawings

Level 5, 1 Chandos Street, St Leonards NSW 2065 Australia
t 612 9460 9000 f 612 9460 9090 e partridge@partridge.com.au
www.partridge.com.au
Partridge Structural Pty Ltd – 73 002 451 925
Partridge Event Pty Ltd – 50 139 601 433
Partridge Remedial Pty Ltd – 89 145 990 521

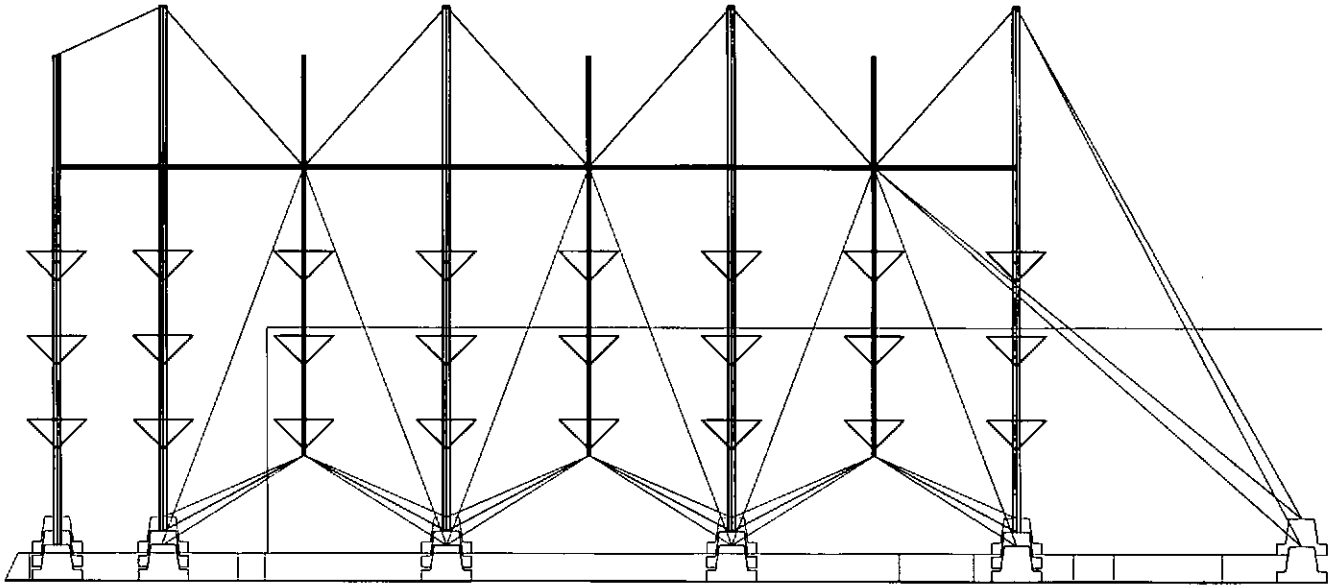




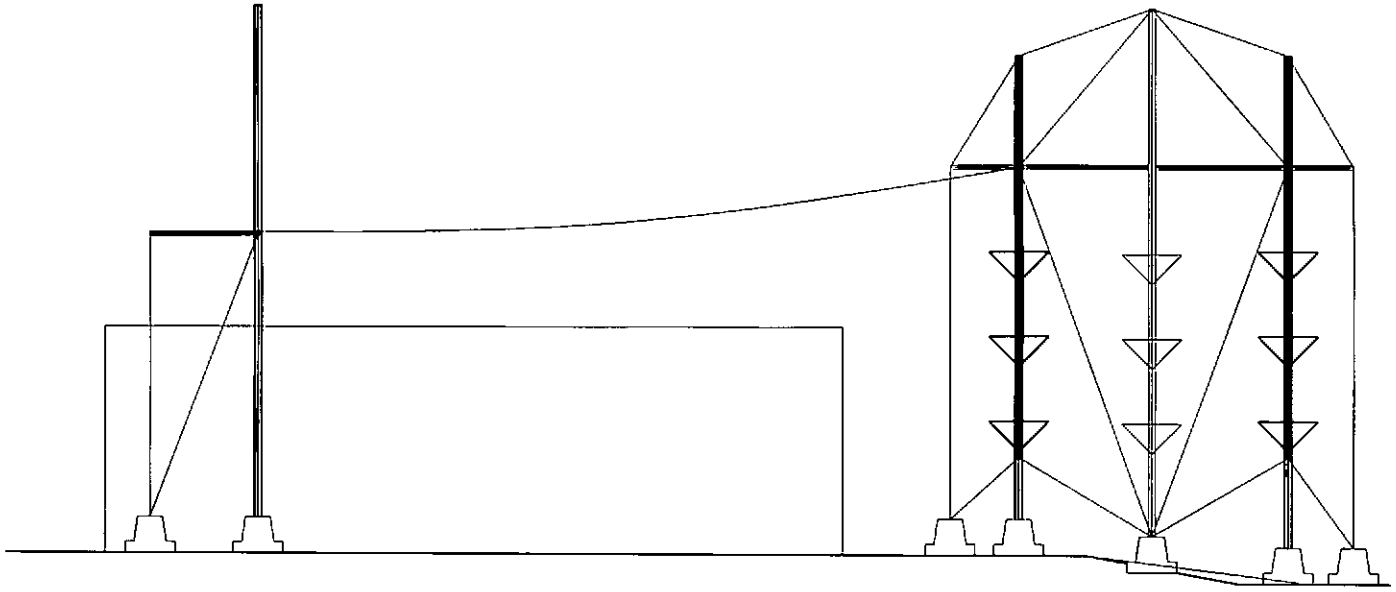
TYPICAL SECTIONAL ELEVATION
(EXPANDED VIEW)
SCALE 1:500



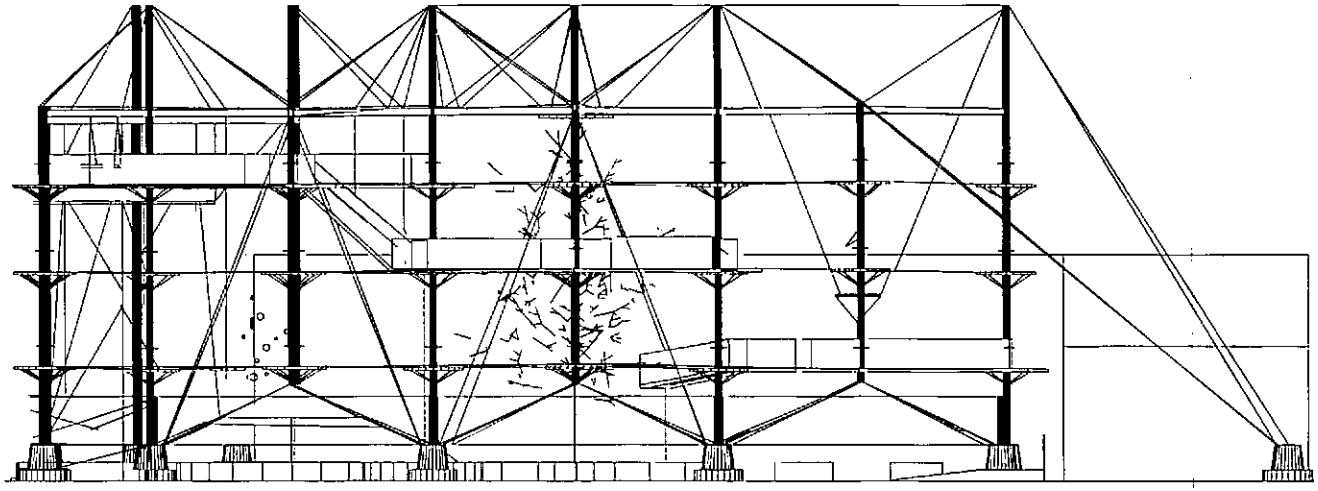
FULL SECTIONAL ELEVATION
(EXPANDED VIEW)
SCALE 1:500



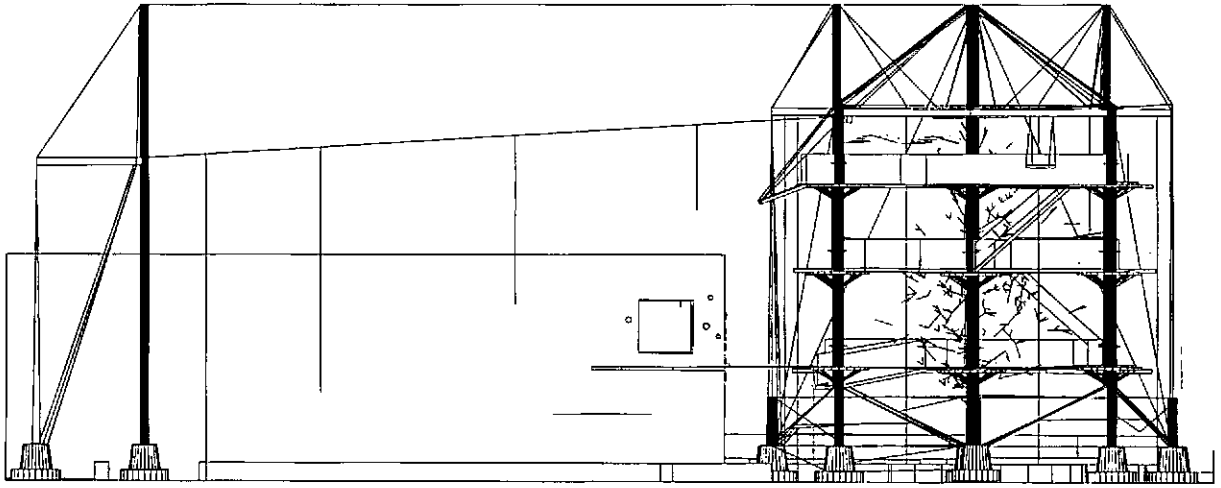
NORTHERN ELEVATION
SCALE 1:200



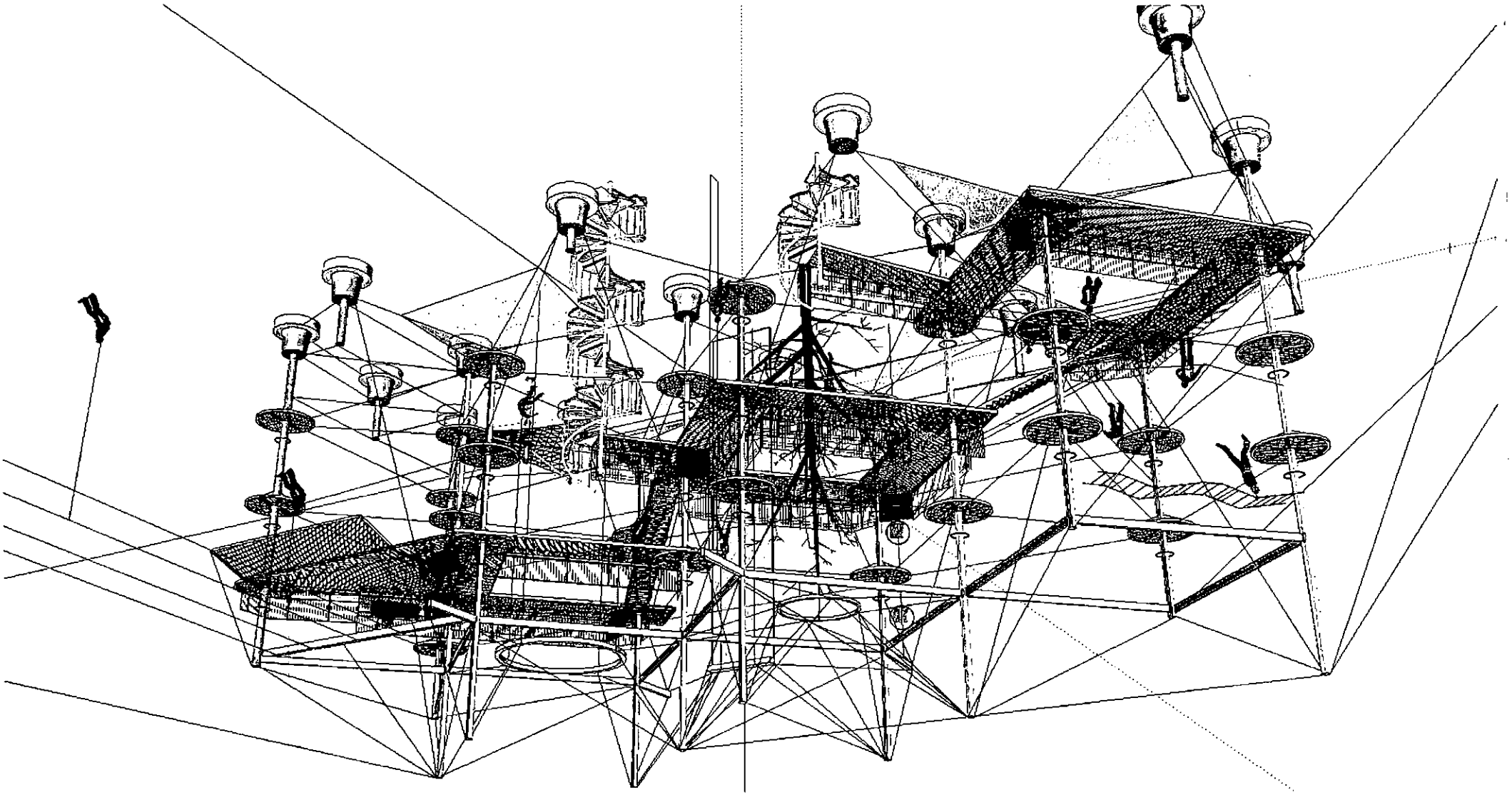
EASTERN ELEVATION
SCALE 1:200



NORTHERN ELEVATION FROM 3D MODEL
SCALE 1:200

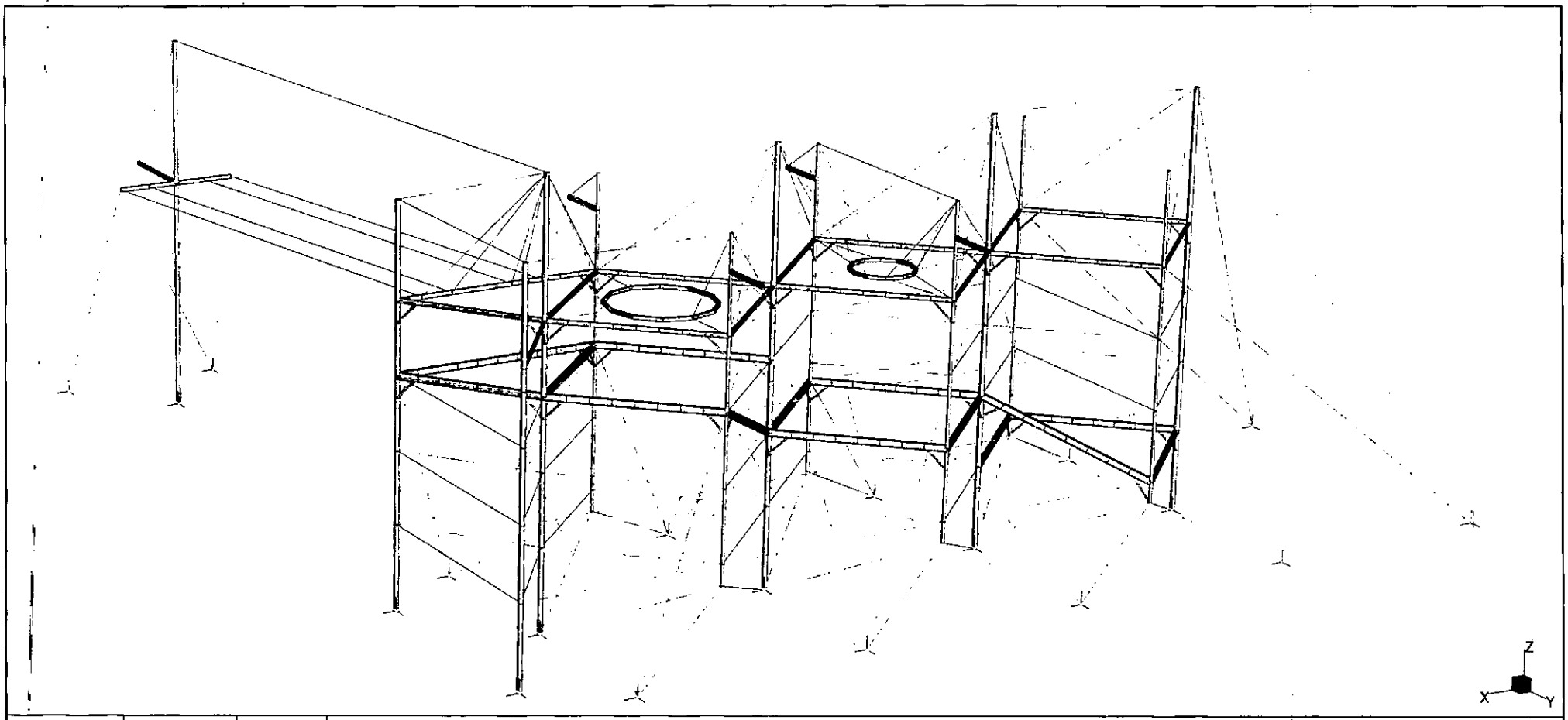


EASTERN ELEVATION FROM 3D MODEL
SCALE 1:200



APPENDIX B
PRELIMINARY STRUCTURAL DRAWINGS + SKETCHES

PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT

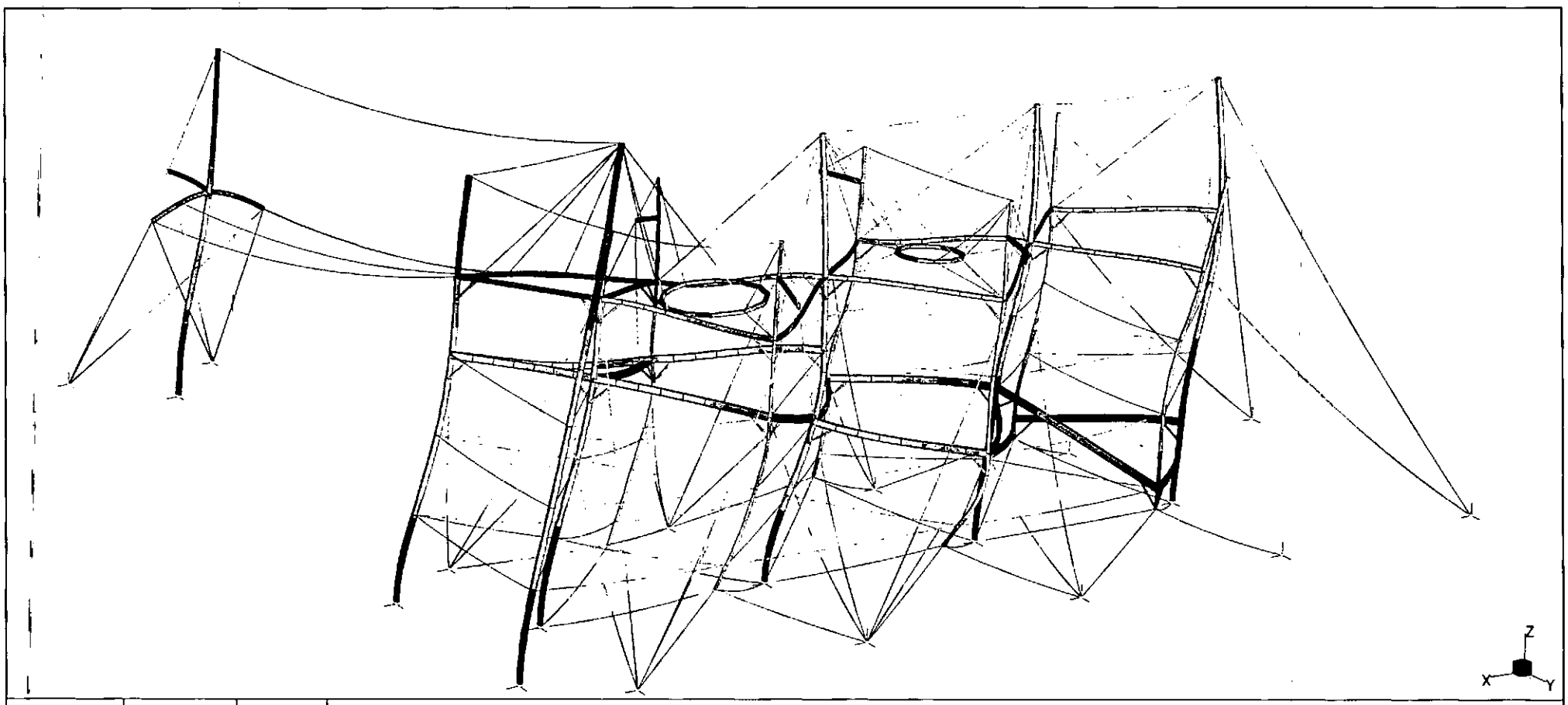


348 Nodes 568 Beams 0 Plates 0 Bricks 0 Links 0 Paths	0 Vertices 0 Edges 0 Loops 0 Faces 0 Surfaces	View RX: -74.0 RY: 1.8 RZ: -147.2	1: G 1: Freedom Case 1

Entire Structure

Strand7 R2.4.6 [Licenced to:Partridge Partners]
Model file: C:\Users\robbie.vanleeuwen\Desktop\Skymate Mark 2\SkyMate Mark II.st7
4 July 2014 4:01 pm

PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT



348 Nodes	0 Vertices	View	4: W-x
568 Beams	0 Edges	RX: -74.0	Freedom Case 1
0 Plates	0 Loops	RY: 1.8	Scale: 10.0 %
0 Bricks	0 Faces	RZ: -147.2	
0 Links	0 Surfaces		
0 Paths			

Indicative Sway

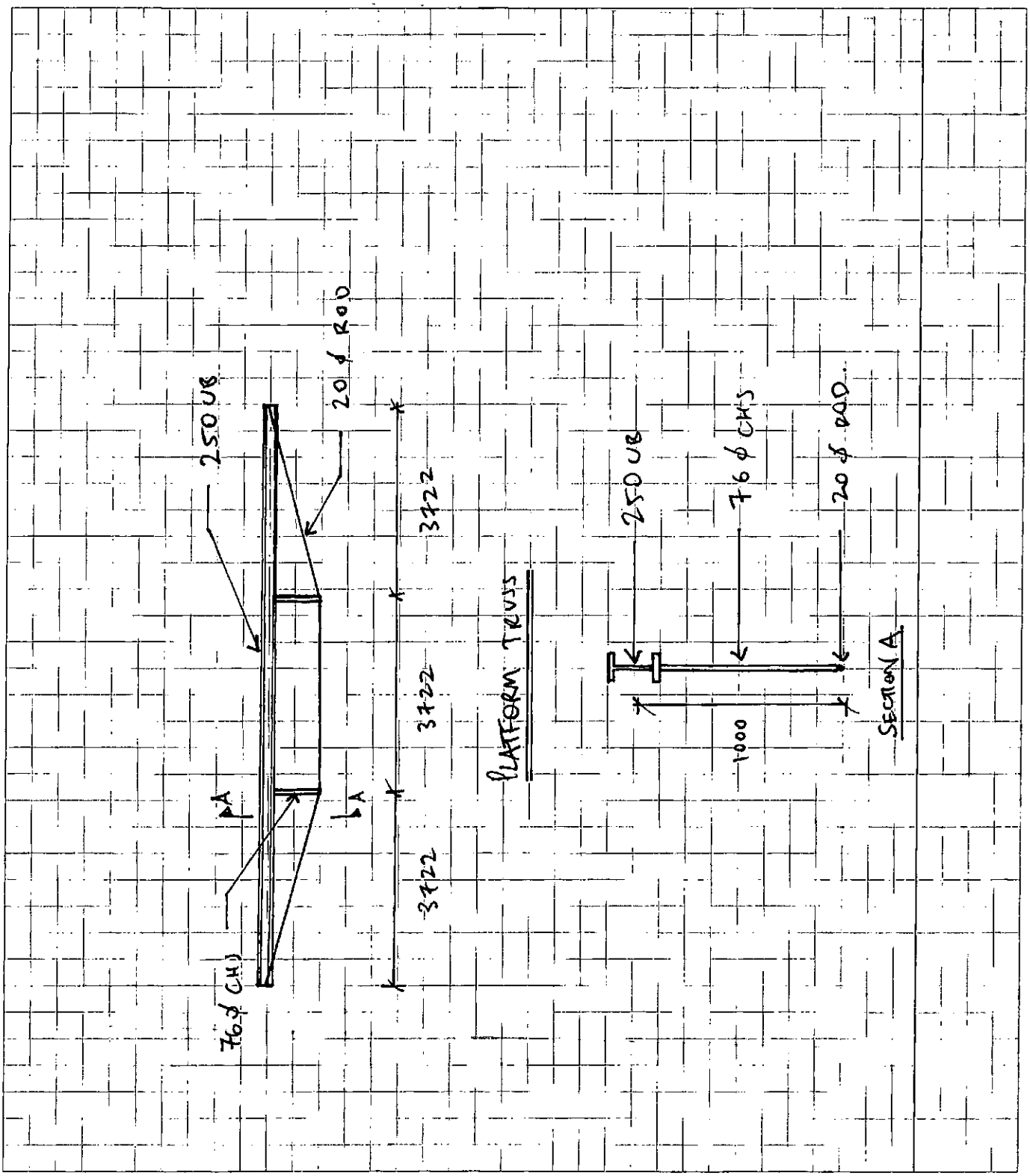
Strand7 R2.4.6 [Licenced to:Partridge Partners]
Model file: C:\Users\robbie.vanleeuwen\Desktop\Skymate Mark 2\SkyMate Mark II.st7
Result file: C:\Users\robbie.vanleeuwen\Desktop\Skymate Mark 2\SkyMate Mark II.NLA
4 July 2014 4:03 pm

Project SKYMATE

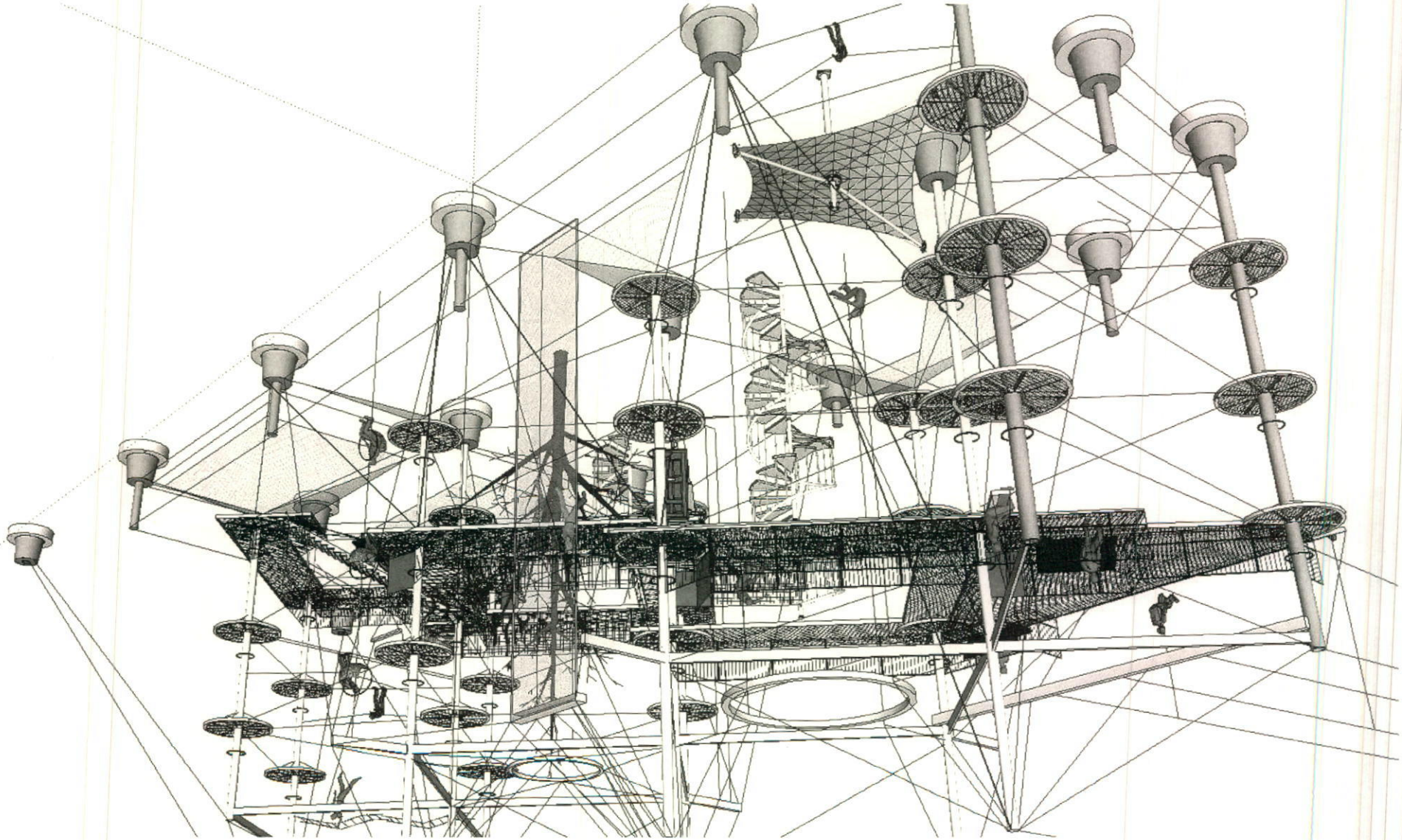
Job No. 20136202 Date 04/02/2014 Page 1/2

Subject TRUSS DETAILS

PARTRIDGE
STRUCTURAL | REMEDIAL | EVENT



t 612 9460 9000 f 612 9460 9090 e partridge@partridge.com.au
www.partridge.com.au



APPENDIX C
EXTRACT FROM GEOTECHNICAL REPORT

BRINK & ASSOCIATES A.B.N. 75 050 212 710
Part of the Aargus Group of Companies
Geotechnical, Geological, Hydrogeological, Environmental Services

Central Coast: 1/13 Clare Mace Crescent Tumbi Umbi P (02) 4389 2300 F (02) 4389 1600 PO Box 40 Ourimbah NSW 2258
Sydney: 5/12 Tarlington Place Smithfield P (02) 9609 3800 F (02) 9604 6427 PO Box 6871 Wetherill Park NSW 2164

PAYNTER DIXON CONSTRUCTIONS PTY LTD
PROPOSED STAGE 1 WORKS
ST MARYS LEAGUES CLUB
CORNER OF BORONIA ROAD & FORRESTER ROAD
NORTH ST MARYS

GEOTECHNICAL INVESTIGATION REPORT

Report No: S07075-A AB:AB
Date: 22nd October 2007
Client: Paynter Dixon Constructions Pty Ltd
320 Liverpool Road
ASHFIELD NSW 2131

BRINK & ASSOCIATES A.B.N. 75 050 212 710
Part of the Aargus Group of Companies
Geotechnical, Geological, Hydrogeological, Environmental Services

Central Coast: 1/13 Clare Mace Crescent Tumbi Umbi P (02) 4389 2300 F (02) 4389 1600 PO Box 40 Ourimbah NSW 2258
Sydney: 5/12 Tarlington Place Smithfield P (02) 9609 3800 F (02) 9604 6427 PO Box 6871 Wetherill Park NSW 2164

S07075-A

22nd October 2007

Paynter Dixon Constructions Pty Ltd
320 Liverpool Road
ASHFILD, NSW, 2131

ATTENTION: Mr. Geoff Bentley.

Dear Sir,

RE: Proposed Stage 1 Works, St Marys Leagues Club, Corner of Boronia Road and Forresters Road, North St Marys

As requested, Brink & Associates' Geotechnical Engineers visited the property known as St Marys Leagues Club in North St Marys on Thursday 2nd August, Friday 17th August and Friday 19th October 2007 in order to undertake a Geotechnical Investigation. The purpose of the investigation was to assess the site's surface and subsurface conditions in order to provide recommendations from a geotechnical viewpoint for the design and construction of the proposed additions and alterations to the existing building and car park. The results of the investigation are detailed below.

1.0 PROPOSED DEVELOPMENT

With reference to the issued site plan, sections and elevations prepared by Curtin Bathgate & Somers Pty Ltd, referenced Project No. SML1/17 5928 Drawing Numbers DA01 to DA-04 and dated June 2006, Brink & Associates understand that the proposed development is to comprise a single storey extension to the eastern side of the existing leagues club containing a new restaurant, lounge, crèche, kids interactive area and store room. Furthermore, the proposed development will include provisions for new car parking facilities in this area.

2.0 LOCATION

The subject property is located in the northern part of North St Marys. More specifically, it is located on the north-eastern corner of the intersection between

Boronia Roads and Forresters Road and approximately 300m north-east of Chifley College.

3.0 FIELDWORK

Fieldwork for the Geotechnical Investigation comprised the following:

- A detailed walk-over inspection of the property, in particular the site.
- Drilling of four (4) boreholes using a truck-mounted drill rig within the proposed development footprint. These boreholes were drilled to V-bit refusal, continued using a TC-bit and terminated on shale bedrock at depths of between about 7.0m (BH4) and 10.1m (BH3) below existing ground surface levels.
- Standard Penetrometer Tests (SPT) or Dynamic Cone Penetrometer Tests (DCP) during borehole excavations to determine the strength of the subsurface soils.
- Drilling of two (2) boreholes using a truck-mounted drill rig within the proposed car park footprint to depths of between about 1.4m (BH5) and 1.6m (BH6) below existing ground surface levels. Two (2) disturbed bulk samples were collected from these boreholes for submission to our NATA accredited laboratory in order to determine a representative CBR value of the soil to assist in the pavement design.

4.0 TOPOGRAPHY

The subject property is located amid generally flat terrain. However, the land north of the site begins to slope up towards the north-east at a grade of about 2°.

5.0 SITE DESCRIPTION

The site is rectangular in shape, measuring approximately 80m wide and 120m deep. It covers an area of approximately 9600m2 and is generally flat although the site of the proposed carpark is slightly undulating. Site features include:

- The existing St Marys Leagues Club building located centrally within the property.
- A paved carpark for approximately 50 vehicles to the south of the site.
- A paved access road with concrete kerbing leading to the loading zone at the eastern end of the club.

6.0 REGIONAL GEOLOGY

Reference to the Penrith 1:100,000 Geological Series Sheet 9030 (Edition 1) 1991, indicates the site to be underlain by fine alluvial sand, silt and clay overlying Bringelly Shale (Rwb) of the Wianamatta Group. This formation primarily consists of near-horizontal interbedded Shale, carbonaceous Claystone, Claystone, Laminite, fine grained lithic Sandstone and rare coal and tuff, which forms intermediate to highly reactive Clay, Silty Clay and Clayey Silt soils upon weathering.

7.0 SUBSURFACE CONDITIONS

The results of the borehole excavations and site walk-over confirm the site to be underlain by the expected subsurface conditions overlain by some topsoil / fill. Details of the subsurface conditions encountered during drilling are summarised as follows:

TOPSOIL/FILL:	Silty GRAVEL, Gravelly Silty CLAY, Clayey SAND, SAND, low plasticity clay, fine to medium grained sand, brown, grey, with traces of roots and root fibres, with traces of brick and tile fragments, to depths of between about 0.5m (BH3) to 1.3m (BH1), overlying.
ALLUVIUM:	CLAY / Silty CLAY, medium plasticity, orange/brown, pale grey/yellow, to depths of between about 3.1m (BH2) to 5.4m (BH1), overlying, RESIDUAL: CLAY / Silty CLAY, medium plasticity, pale grey with orange/yellow mottling, grey/orange/brown, to depths of between about 4.9m (BH4) to 6.2m (BH1).
BEDROCK:	SHALE, low to medium strength, extremely weathered, grey/brown, grey.

Boreholes were terminated on shale bedrock at depths of between about 7.0m (BH4) and 10.1m (BH3) below existing ground surface levels. SPT and DCP testing indicated the alluvial material to be firm to very stiff and residual clays to be stiff to hard. The shale bedrock was extremely weathered, of very low strength and interbedded with clay seams. As the depth of the shale bedrock increased, the clay seams were not apparent and the strength increased.

V-bit refusal was encountered at depths indicated in Table 1.

Table 1: V-Bit Refusal Depths

Refusal	Depth (m) Below Existing Ground Surface Levels			
	BH1	BH2	BH3	BH4
V-Bit	7.4	7.2	6.3	4.9

Groundwater was encountered in BH3 at a depth of 2.6m. Seepage was encountered within BH1 at a depth of 1.1m-1.3m and within BH5 at a depth of 1.5m. Groundwater was not encountered in the other boreholes.

8.0 LABORATORY TESTING

Two representative soil samples were submitted for laboratory testing to determine the four day soaked California Bearing Ratio (CBR) value of the proposed pavement sub-grade. The laboratory test results are attached and are summarised in Table 2 below.

Table 2: Laboratory Test Results

Borehole	Depth (m)	CBR (%) @	
		2.5mm*	5.0mm*
BH5	0.8 – 1.2	9.0	9.0
BH6	0.4 – 1.0	4.0	3.5

*Penetration

9.0 GEOTECHNICAL COMMENTS AND RECOMMENDATIONS

9.1 General

The encountered subsurface soils were found to consist of topsoil/fill overlying firm to very stiff alluvium over stiff to hard residual sandy clay. The shale bedrock is located at depths of between about 7.0m (BH4) and 10.1m (BH3) below existing ground surface levels. Groundwater was encountered in BH3 at a depth of 2.6m. Ground water seepage was encountered within BH1 at a depth of between 1.1m and 1.3m and within BH5 at a depth of 1.5m.

9.2 Footings

Based on the investigation results, we consider that both shallow and deep footings are suitable for the proposed development. However, all footings must be founded below any uncontrolled fill or deleterious materials. Footings for the proposed development should be constructed in accordance with good engineering principles and the following recommendations:

- Shallow footings (such as strip) and deep footings may be founded on the alluvial clay and designed for an allowable bearing pressure of 100kPa (see Table 3 below).
- Deep footings (such as pier footings) may be founded on the residual clay and designed for an allowable bearing pressure of 200kPa (see Table 3 below).
- Deep footings (such as pier footings) founding in very low to low strength shale bedrock may be designed for an allowable end bearing pressure of 400kPa (see Table 3 below).
- Deep footings founding in low strength shale bedrock (at depths deeper than V-bit refusal) may be designed for an allowable end bearing pressure of 500kPa and an allowable shaft adhesion of 50kPa (see Table 3 below).
- Bored pier excavations below the level of the groundwater will require the use of either casing or grout injection.
- All footings should be taken to the same bearing materials. Alternatively, design of the structure should incorporate articulation to minimise the effects of differential settlements.
- All footing excavations should be free of loose debris and wet soil prior to concrete placement.
- The geotechnical consultant should inspect footing excavations at the time of excavation, to ensure that all foundation loadings are taken to suitable bearing materials.

Table 3 provides indicative allowable bearing pressures and adhesion at respective foundation depths.

- All rigid concrete pavements must be shouldered.
- Alternatively to removing all fill materials the use of a suitable geotextile ,embedded in a minimum of 300mm of gravel, may be used beneath all sub-base materials to provide the necessary flexible support to the pavement loading on the poorly compacted fill. Materials and construction techniques are to comply with product manufacturers specifications.

10.0 LIMITATIONS

Assessment of the sub-surface profile at the site and the recommendations presented in this report are based on information from four boreholes, drilled at locations considered representative across the site. Based on the results of the investigation and subsurface variability, there is a possibility that actual geotechnical conditions across the site could differ from the inferred geotechnical model (on which our recommendations are based) presented in this report.

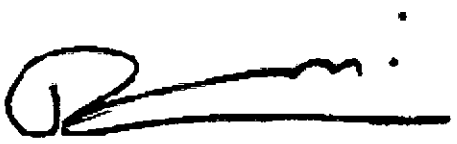
The report contains geotechnical parameters to be used as input for the structural design of footings and car park pavements. On-going geotechnical input is required to ensure recommendations provided in this report are followed and that actual ground conditions reflect those indicated in this report.

Please do not hesitate to contact the undersigned if you require any further information.

For and on behalf of
Brink & Associates

Anthony Bennett
Geotechnical Technician

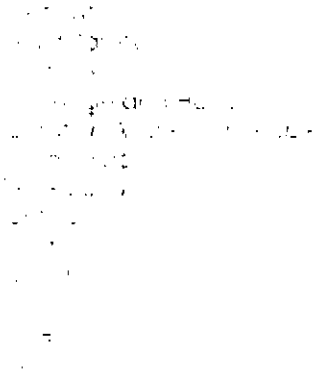
Reviewed by



Ralph Erni B.Sc. Eng. (Civil) MIEAust CPEng NPER3
National Engineering Manager

Appendix H Plan of Management – Touch Cloud

Plan of Management



Safety at height

Like with all public space at height, all work at height and all commercial recreation at height there are specific and regulated standards and protocols designed to maximise the health and safety of the public, employees and patrons.

The SkyMate structure and operation has been designed to comply with the following

- Building Code of Australia
- ASTM International F2959-12 Standard Practice for Special Requirements for Aerial Adventure Courses
- AS 3533.1-1997 Amusement rides and devices - Design and construction
- AS 3533.2-1997 Amusement rides and devices - Operation and maintenance
- Work Health and Safety (WHS) Act & Regulations
- Amusement Devices Code of Practice – *Draft*, Work Safe Australia 2012

The structural engineering has been assessed by Partridge Partners Pty Ltd one of Australia's premier and most experienced

engineering firms. The design and items of SkyMate will be registered with WorkCover as an Amusement Device Plant. The Directors of

TCg have successfully
registered Aerial Rope Park designs and items with regulators in South Australia, Tasmania and Singapore.

A comprehensive dynamic and documented Risk Management Strategy (RMS) born from, and maintained by, continuous in-depth site specific Risk Assessments will dictate site operations. Key aspects captured in the RMS are

- Crew Training and Assessing procedures that are competency based
- Inspections and maintenance procedures
- Identification of and response to hazards (incl. imported)
- Emergency Response procedures (incl. non-responding patron and electrical storms)
- Capture of and response to Incidents and Accidents
- Maintenance of conformity to Regulatory requirements and industry expectations
- Patrons or staff suspected to be under the influence of alcohol or drugs
- Mechanisms for Continuous Improvement

Of note, is that a state-of-the-art Active Continuous Belay system will be employed to ensure patrons are always secured to a 'standard conforming' fall prevention and/or arrest assembly. The system uses two 'communicating' lanyards, ensuring that a lanyard can only be removed from an approved anchor structure if the other lanyard is secured to an approved anchor or belay line i.e. **at all times a patron is protected from falls from height**.

Reserved provision within the perimeter fencing will be made to enable rapid emergency vehicle access and egress. Local Emergency Services will be consulted regarding the site's documented emergency response procedure and the nature of possible incidents.

Safety for children

A perimeter fence that conforms to the pool standards will help prevent young children accessing the surrounding roads. Off-road pedestrian routes will facilitate low risk access to the single park entry/exit point. Marked pedestrian crossings and traffic calming devices will be installed to provide low risk road crossings. No direct access will be facilitated from the site to Military Road. Bus bays will be provided on the one-way access road.

The deliberate open plan nature of the site will help facilitate efficient child supervision. The management will expect children less than 14yrs to be under the care and supervision of someone over 18yrs old.

A purpose built Children's Ropes Course will cater for children 8yrs and younger. It will incorporate a Passive Continuous Belay system that will be continuous in nature and, unlike an active version, will not require direct manipulation by the child to achieve inter- crossing transfers.

The installed fence, wind breaks, shade structures and existing on-site trees will provide opportunities for shelter in adverse conditions.

As per the Children's Protection Act 1993 (Section 8B) staff having regular contact with children will be required to submit evidence of police clearance before they commence employment.

Patronage, fluctuations, capacity and hours of operation

The Park will provide meaningful offerings to all - regardless of age, ability or income. A Childs Course will challenge those 3yrs to 8yrs old. The viewing decks of SkyMate and the wide variety of 'crossings' will provide an opportunity for four generations to share the SkyMate adventure. Adaptive equipment and systems will permit users with disabilities (incl. those who use electric wheelchairs) to go beyond imagined limits and reach new heights of experience and experience 'ownership'.

The majority of patrons are expected to pre-book via various on-line services, however, the park will, in circumstances where Crew/ Patron ratio capacity has not been achieved, happily and efficiently accommodate walk-in customers.

The facility is expected to operate between 9:00 am and 8:00 pm in the summer months, and 10:00 am and 6:00 pm in the winter

months. The facility will cater for a turnover of 30 people every 30 minutes, with the duration of each visit being (approximately) 2.5

hours on average.
On this basis, this would result in a peak attendance of 150 people at the aerial adventure park at any one time, particularly during the summer season.

Use of the park is expected to fluctuate during the week, with school and corporate groups anticipated during the week. School groups would generally access the site via chartered bus. Higher numbers of patrons are expected on Saturday and Sunday afternoons. Following is the anticipated proportional patronage over a typical week during the summer season.

Monday – Thursday evening
30% Friday evening 60%
Saturday afternoon 100%
Sunday afternoon 80%

Access for People with Disabilities

All park service offerings are accessible to People with Disabilities (PWD). The following strategies have been employed in the overall design to maximise the accessibility of the park.

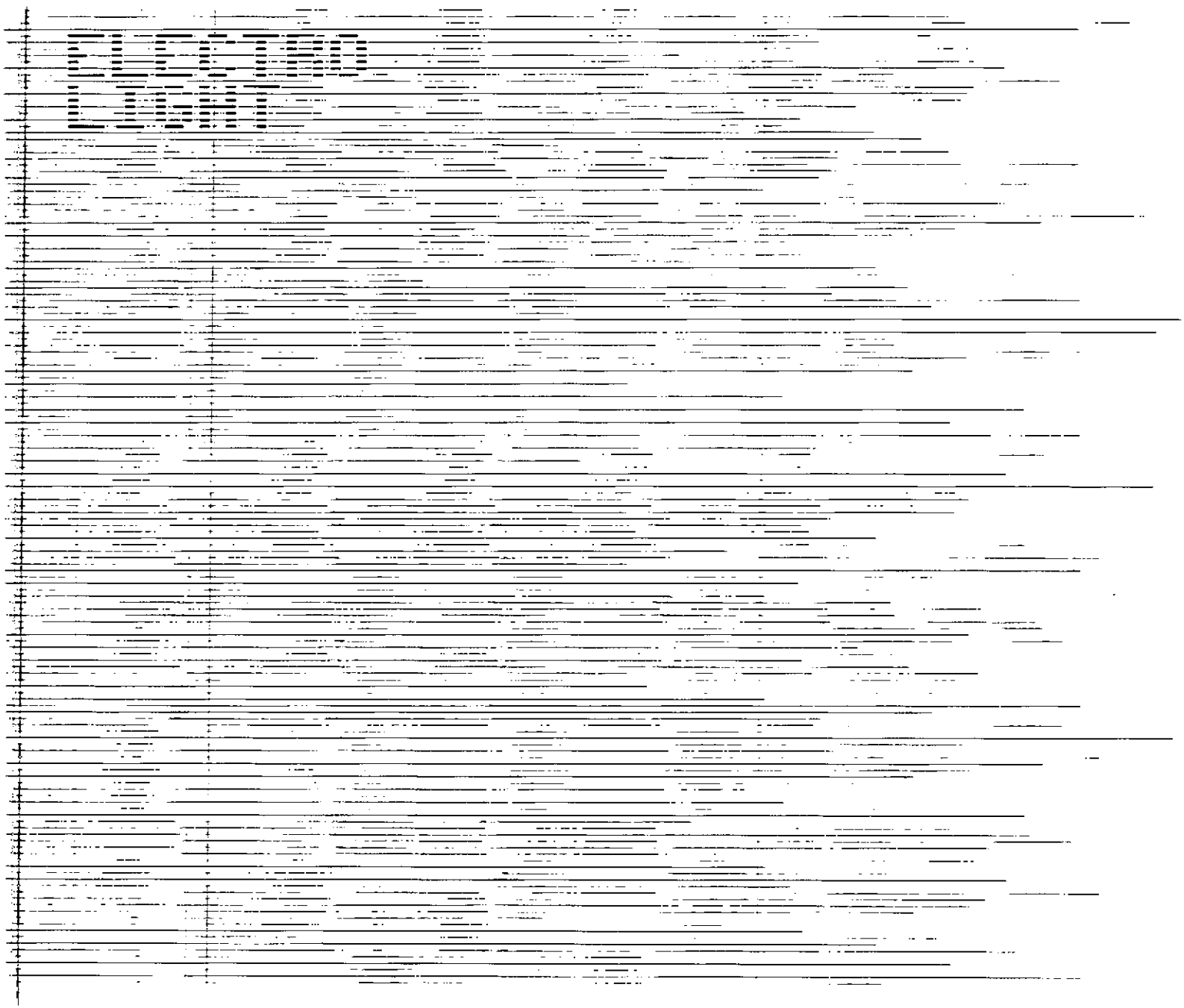
- Reserved Accessible parking
- Reserved Accessible minibus parking
- 1:14 gradient ramps to access and egress the Operation Complex and associated single level decking
- Accessible closet type toilet and shower
- 850mm wide doorways
- Low set Booking Kiosk, Reception desk and Café order/payment point
- Inclusive seating arrangements to accommodate wheelchair users and/or prams
- Low set lockers
- High contrast surface level changes
- Tactile cues for surface level changes
- Wide hardened paths
- Off road pedestrian access to Park entry point
- At-site public bus stop
- Accessible shade structures
- Accessible curbs points
- Provision of specialised adaptive equipment (incl. PPE) and rigging systems that permit (upon booking) access to height and ability appropriate challenges
- Reserved staging areas for briefings and height access

Security

The following provisions will be made to maximise the security of the site. The Park will

- have a perimeter fence of pool standards with locked gates
- have signage indicating unauthorised access is prohibited
- have warning signs at the base of the stairs and each pole highlighting the danger of unauthorised climbing
- enjoy high visibility from passing traffic and neighbouring accommodation
- include out-of-hours ambient lighting
- be included/captured in the League Club's routine out-of-hours security surveillance mechanism
- have movement sensor flood lighting
- contract a security company to provide means of detection and response to building and/or SkyMate intrusion
- mechanisms may include 24hr CCTV
- anti-climb measures at the base of SkyMate poles (i.e. a non- negotiable first level platform)
- have an anti-climb locked gate at the base of the SkyMate stairs
- use an end-of-day lockdown procedure checklist

Appendix I Lighting Design and Compliance Statement– Electrolight



GO BANANAS AERIAL ADVENTURE PARK

DA REPORT

27 JULY 2014

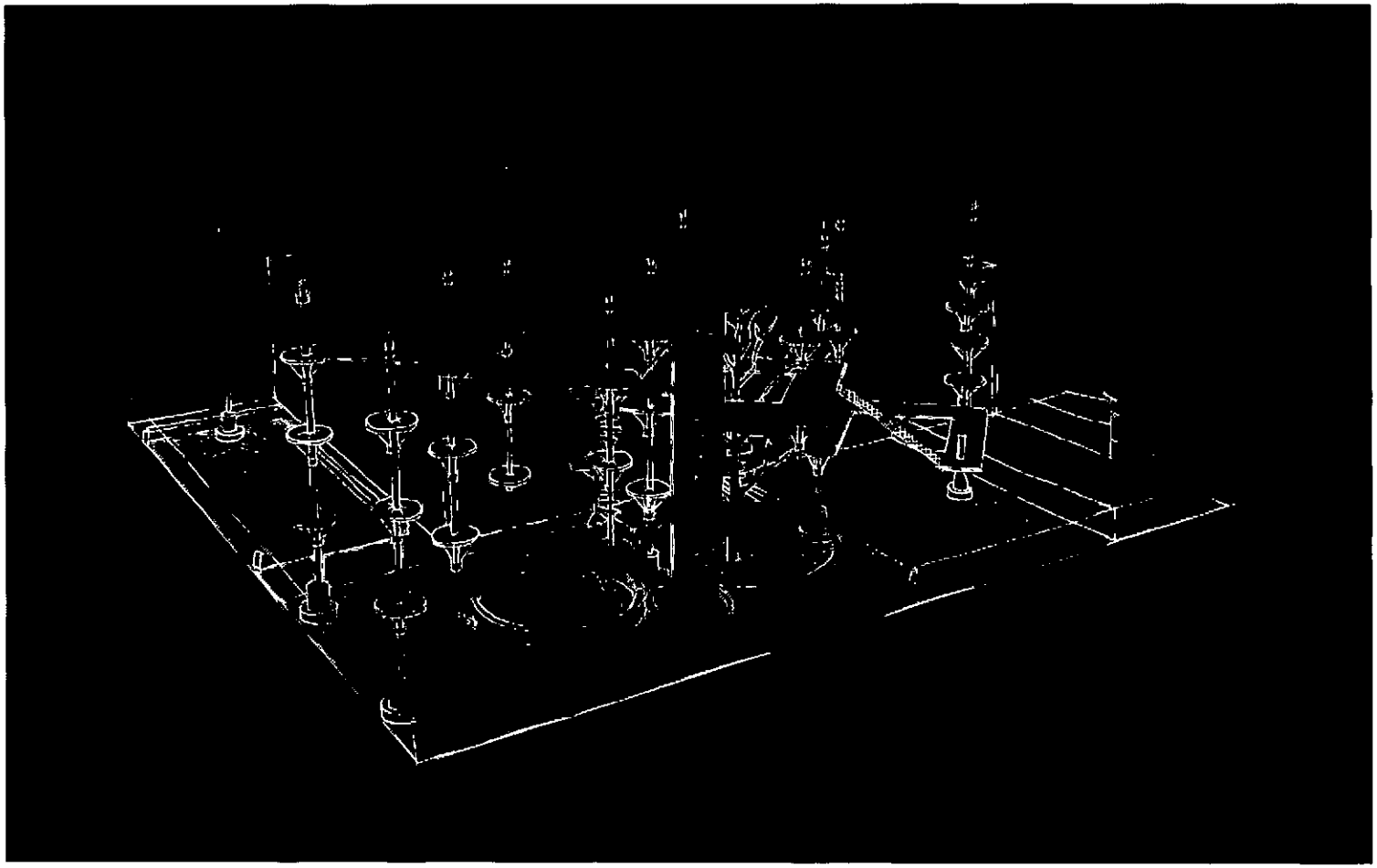
Electrolight
info@electrolight.com.au
www.electrolight.com.au

Suite 3.00, 35-39 Liverpool St
Sydney NSW 2000
T +61 2 9267 4777

SITE LOCATION

Lighting for the Go Bananas Aerial Adventure Park looks to provide a unique and memorable experience for visitors keen to challenge themselves during the darker hours.

Electrolight have been appointed to provide a specialist lighting design for the public areas and the park structures. Our aim is to create a result which enhances the visitor experience, but at the same time surpass the requirements of relevant Australian Standards for safety (AS1158.3) and Light Pollution (AS4282).

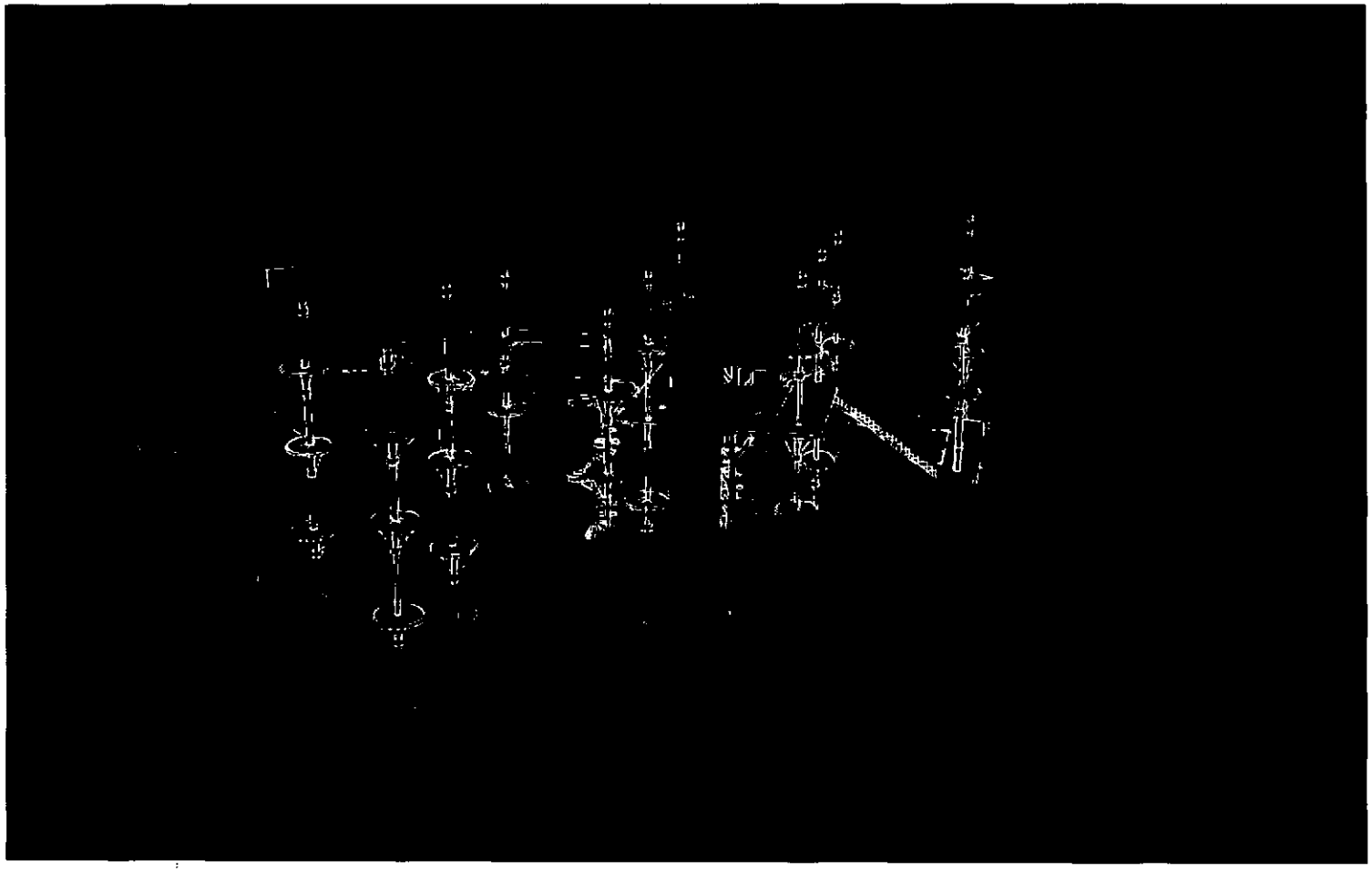


LAYER 1 - GROUND LIGHTING

The Base Layer of illumination looks to provide a backdrop of luminance for orientation when on the ground and in the air. When at ground level, illumination of the ground plane allows for safe movement around the site. A hierarchy of light levels has been established to make clear the routes of travel on main paths and feature destinations, as well as the Children's Course.

When above the ground, the luminance of the ground plane and adjacent building provides a lit canvas for the cables and aerial structures to form a silhouetting effect for the users. This negates the need to floodlight the site in order to capture the cables.

Illumination of the ground elements and vertical walls will be via a combination of low-glare luminaires. White LED sources and accurate distribution through reflector / lensing technologies allow light to fall onto surfaces with limited light spill and glare.



LAYER 2- ELEVATED PLATFORMS AND LANDING PADS

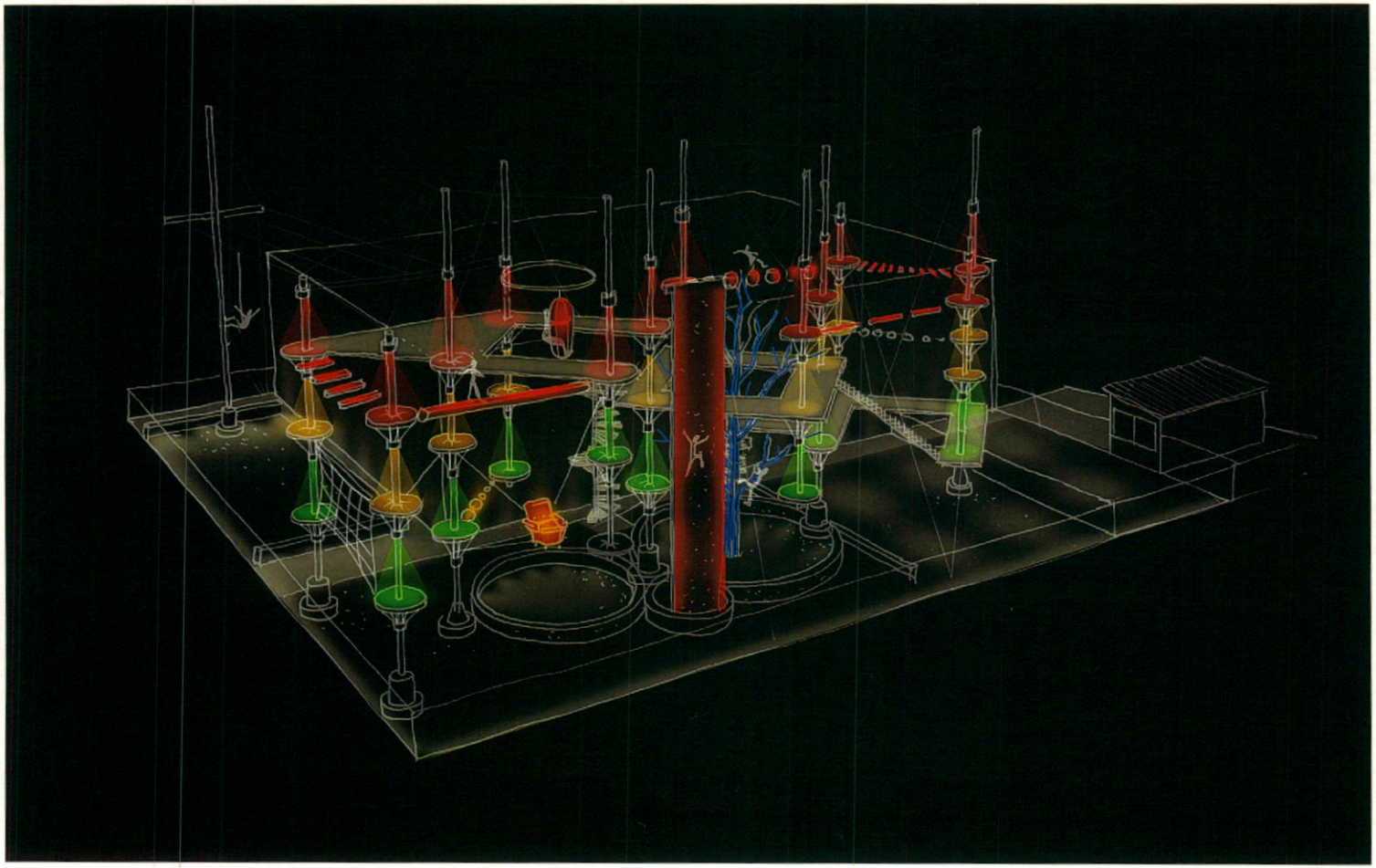
Once off the ground, the aerial layer (2) aims to provide localised illumination of the Public Access Platforms, Stairs and Landing Pads. Luminaires are planned to be integrated within the aerial structure to keep the illumination focused on these key elements.

The Landing Pads are seen as primary destinations and form part of the customer experience of achieving each goal. As each experience (or task) is related to a level of difficulty, these Landing Pads can take on a variety of forms at night through the use of coloured light. Visual cues to the level of difficulty, or a suggested path through the course will be created through the medium of light and colour.

ELECTRO LIGHT

LAYER 3- FEATURE ELEMENTS

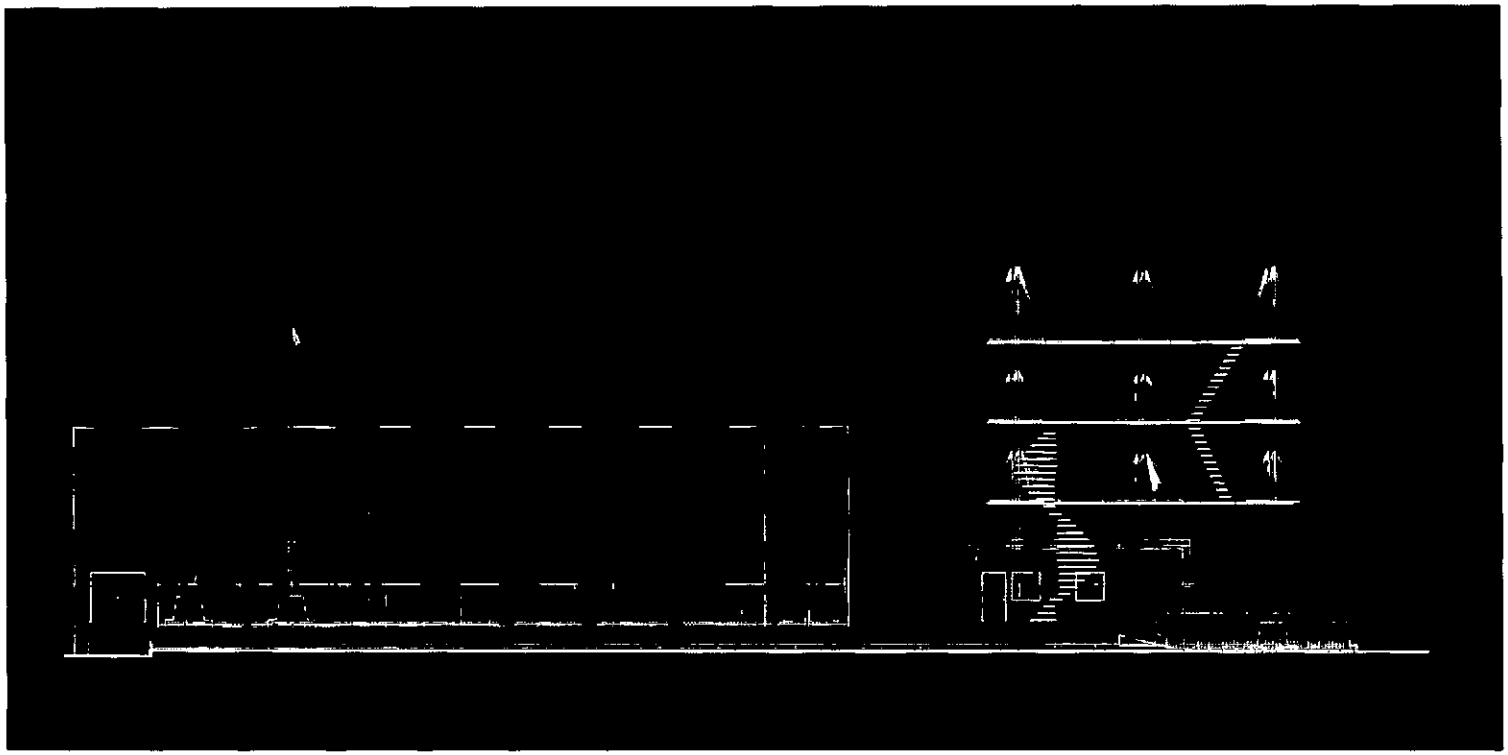
The final lay (3) represents individual task elements, challenges which are accentuated with light to give them additional emphasis to the visitors. Again, through the use of light and colour, these elements are allowed to be brought into focus with carefully placed illumination. The colours would be adjustable to allow changes in the experience, or to bring particular attention to items of interest.



COMBINED PERSPECTIVE

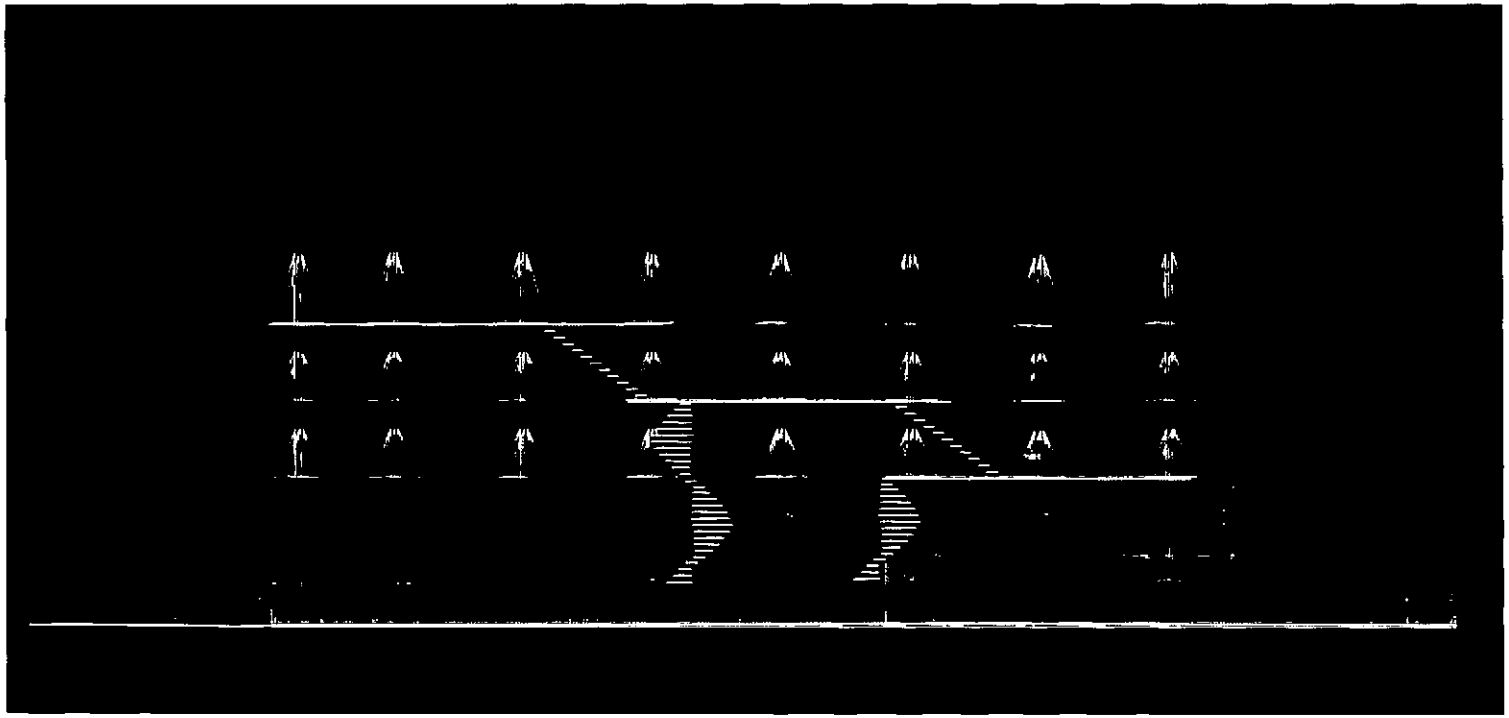
These three layers brought together form an obvious hierarchy of depth, form, excitement and skill. The ability to alter the scheme from day-to-day, or for specialised events, elevates the user experience beyond what is possible during the day.

ELECTRO LIGHT



EAST ELEVATION

At night, the use of controlled light sources is elemental in providing that magical experience. Limiting the ability to view the sources works with the users visual acuity, allowing easy recognition of the objects which are essential for both safety and confidence.



NORTH ELEVATION

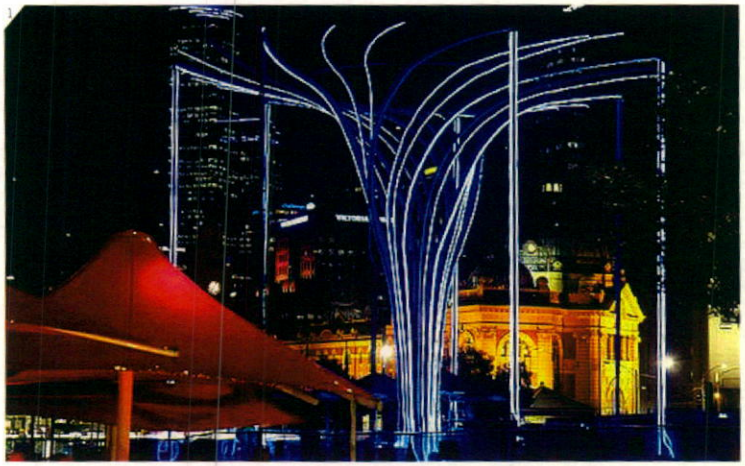
Limiting light spill and glare ensures that the installation is efficient, effective and low-impact for the surrounding environment.

N°1-2 Inspiration Image

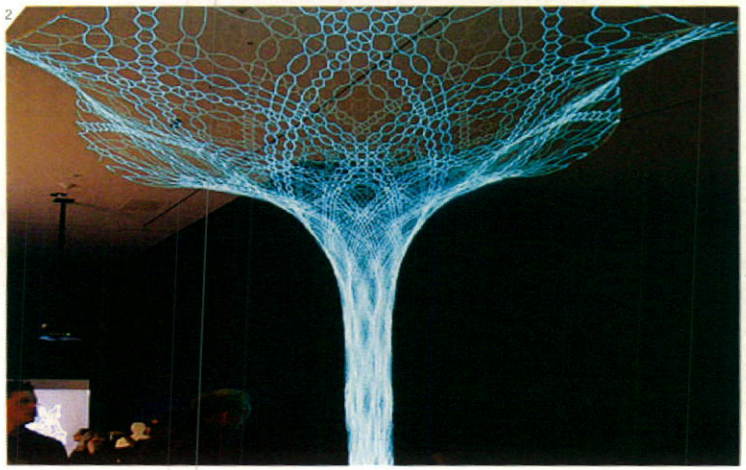
N°3 Avatar Tree Location

ELECTRO LIGHT

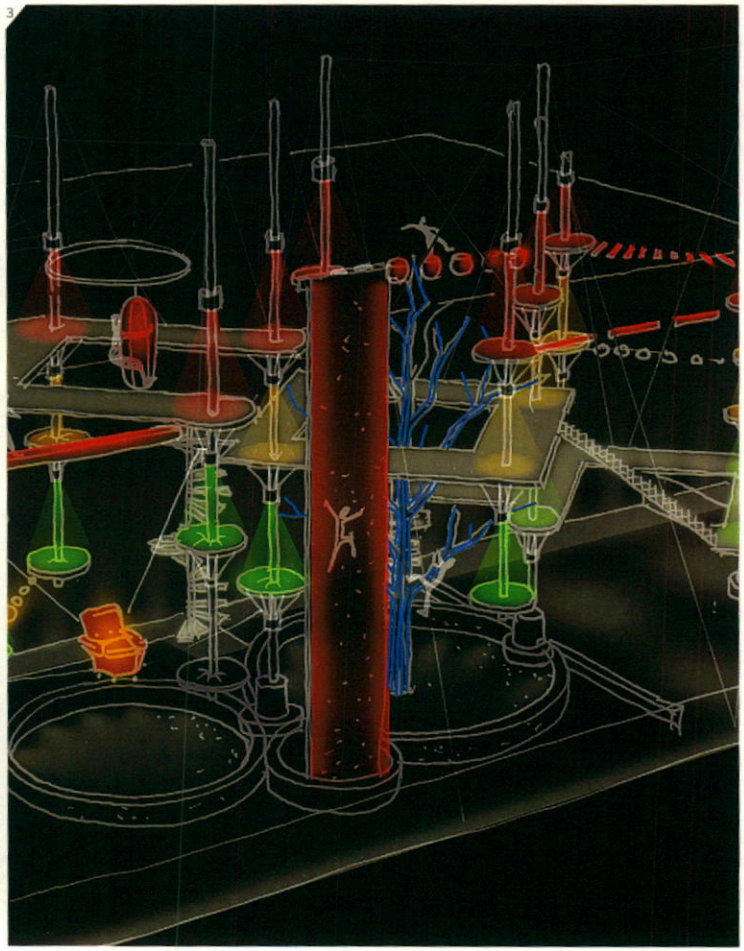
1



2



3



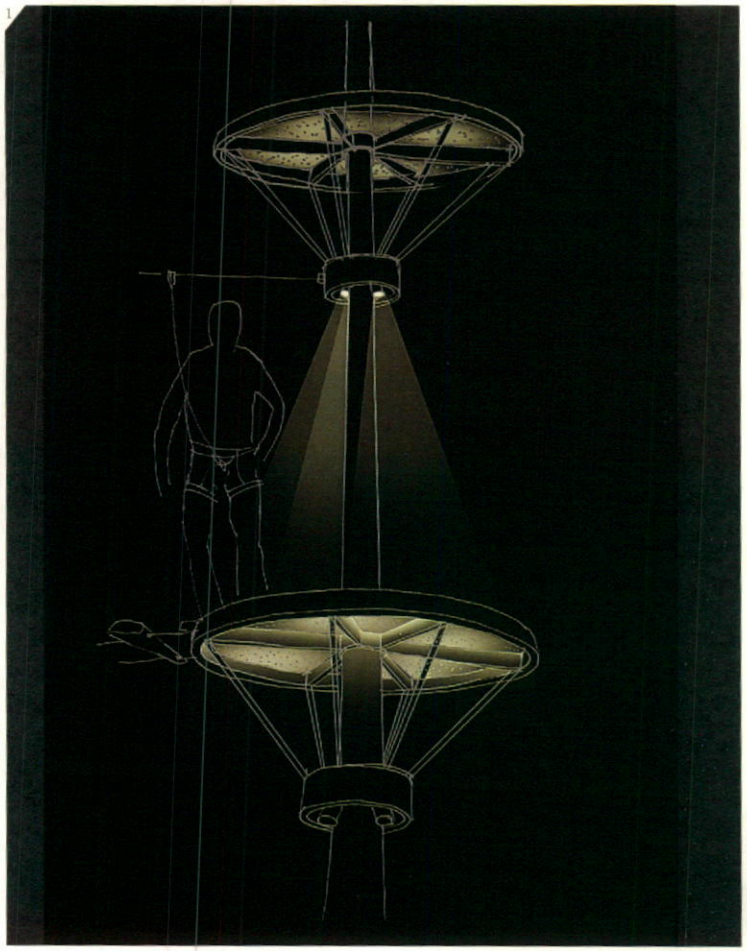
AVATAR TREE

The "Avatar Tree" is seen as the central focus, a challenge which can be transformed at night into a unique and memorable experience. Through the use of integrated lighting, the tree is transformed, tempting visitors to scale it's limbs.

N°1 Pot Deck Detail
N°2-5 Luminaires

ELECTRO LIGHT

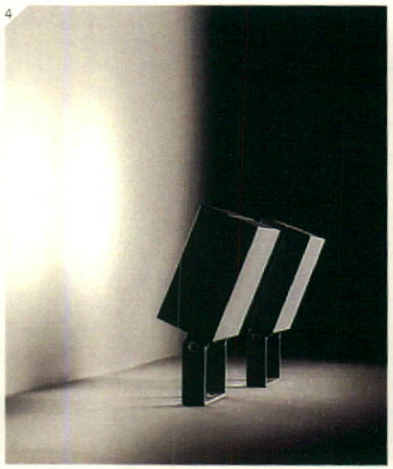
1



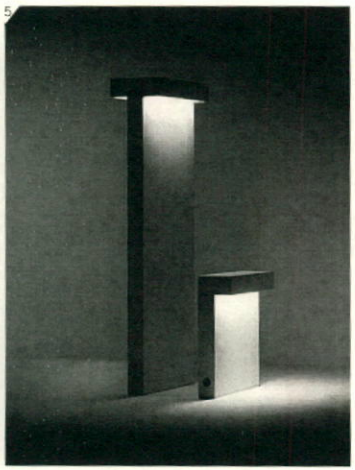
2

3

4



5



INSTALLATION AND LUMINAIRE SELECTION

High-quality LED sources, utilising controlled lensing and glare shields have been selected to ensure a purposeful and deliberate application of light. Thoughtful concealment of both luminaires and cable reticulation keeps the focus on the experience of the the challenge. The lighting design aims to limit any direct beam of light beyond the park boundary.

Appendix J Penrith Development Control Plan 2010 Compliance Table – Urbis –

Penrith DCP Compliance Assessment

PROVISION	REQUIREMENT	PROPOSAL	COMPLIES/COMMENTS
C1 Site Planning and Design Principles			
1.1.2 Key areas with scenic and landscape value	▪ *New proposals on land identified on the Penrith LEP 2010 Scenic and Landscape Values Map are to submit a visual impact assessment with their development application.*	The proposed works are outside lands identified as having scenic and landscape values. The facility is highly transparent and thus has a low visual impact; a photomontage has been prepared to demonstrate this.	A photomontage has been prepared to assist in visual impact assessment.
1.2.2 Built Form – Energy efficiency	▪ *The selection criteria for construction materials, including internal fit-out work, should include detailed documentation of their energy efficiency properties*	The ropes park will be constructed from the energy efficient and sustainable materials provided in the set of architectural plans.	YES
1.2.3 Build Form – Height, bulk and scale	▪ *An application must demonstrate how all proposed buildings are consistent with height, bulk and scale of adjacent buildings and minimise the impact on the area's landscape* ▪ *Building locations, height and setbacks should seek to minimise any additional overshadowing of adjacent buildings and/or public spaces*	No height control is assigned to the site under the LEP. The photomontage provides demonstrates the proposal has minimal impact on surrounding areas and the landscape. The ropes park will not cause overshadowing of adjacent buildings or public spaces.	YES
1.2.4 Responding to the site's topography	▪ *Applicants must demonstrate how the development responds to the natural topography and landform of the site based on analysis drawings.*	The proposed location is an existing hard surface.	YES

PROVISION	REQUIREMENT	PROPOSAL	COMPLIES/COMMENTS
1.2.5 Safety and Security	▪ *Effective access control can be achieved by:* - *Providing clear entry points* - *Ensuring there are appropriate security measures in place for the range of land uses within a development*	The proposal incorporates the necessary security measures to achieve access control for the facility.	YES
1.2.6 Maximising Access and Adaptability	▪ *Principles of universal design include:* - *Equitable use for people with diverse abilities* - *Flexibility in use for a range of preferences and abilities*	The ropes park is designed to accommodate people with disabilities.	YES
1.3 Fencing	▪ *The location and design of fences including the materials used to construct fencing, should:* - *Be sympathetic to natural setting* - *Maximise surveillance* - *Be located wholly on the property* - *Be structurally adequate*	The proposed fence meets pool standards with locking gates, is located wholly on the property and will be structurally adequate.	YES
C2 vegetation Management			
2.1 Preservation of trees and vegetation	▪ *In accordance with Clause 5.9 of Penrith LEP 2010, a person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation which is prescribed by this Plan without development consent.*	The proposal does not involve the removal of any trees.	YES
	▪ *An application is required to address the effect of the*	The proposed works are located on an existing hard	YES

PROVISION	REQUIREMENT	PROPOSAL	COMPLIES/COMMENTS
	proposed development on existing vegetation, the landscape character and the scenic quality of the locality.	paved area.	
C3 Water Management			
3.3 Water Courses Wetlands and Riparian Corridors	▪ *If any activities/land uses are proposed near a watercourse, the Water Management Act 2000 may apply and you may be required to seek a Controlled Activity Approval from the NSW Department of Environment, Climate Change and Water.*	The proposed works will be setback further from the riparian corridor than the existing building line. No impact on the watercourse is expected.	YES
C5 Waste Management			
5.1 Waste management plans	▪ *Proposals involving demolition and/or construction are to include a waste management plan.*	Waste management plans have been included in this application.	YES
5.2.5 management of waste facilities	▪ *Administrative arrangements for ongoing waste management must be provided, including signs.*	Go Bananas will continue to provide administrative arrangements for waste management.	YES
C6 Landscape Design			
6.1 Development Process	▪ *Development that falls into Category 1 will generally not be required to submit landscaping information; however, landscaping of such development should be designed in accordance with the landscape requirements of this section.*	The proposal is classified as category 1.	YES
	▪ *All landscape works are to include provision for adequate drainage including collection or dispersal of stormwater runoff, prevention of ponding of water on pavements or discharge of*	An increase in area of pervious surfaces is proposed with the introduction of grass to an existing hard paved area.	YES

PROVISION	REQUIREMENT	PROPOSAL	COMPLIES/COMMENTS
	runoff onto adjoining properties or public areas.		
C10 Transport, Access and Parking			
	▪ *Any Traffic Report or Traffic Impact Statement is required to address the following issues:* *i) The objectives of this Chapter relating to transport and land use;* *ii) The objectives of this Chapter relating to traffic management and safety;* *iii) The objectives and controls of this Chapter relating to traffic generating developments; and* *iv) The issues set out in App*	A traffic and parking assessment has been submitted with this proposal.	YES
	▪ *Each development should demonstrate how it will:* *i) Provide safe entry and exit for vehicles and pedestrians which reflect the proposed land use, and the operating speed and character of the road;* *ii) Minimise the potential for vehicular/pedestrian conflicts, providing protection for pedestrians where necessary;*	The existing entry and exit points will be maintained. Existing pedestrian access ways will be maintained.	YES
10.5 Parking access and driveways	▪ *In accordance with RTA guidelines or if there are no parking guidelines provided for a specific use, then a site specific car parking analysis will be required. This may require the applicant to submit a car parking report from an appropriately qualified traffic consultant.*	Refer to Traffic and Parking assessment submitted with this application.	YES

PROVISION	REQUIREMENT	PROPOSAL	COMPLIES/COMMENTS
10.5.2 Road access	▪ *The road access to the site should provide for safe entry to and exit from the site. All vehicles must enter/exit the site in a forward direction. (This does not apply to single dwellings).*	The existing entry and exit points will be maintained.	YES
C12 Noise and Vibration			
12.6 Open air entertainment	▪ *Outdoor sporting activities are to operate between the hours of:* *i) Monday to Friday – 7.00am to 6.00pm; and* *ii) Weekends and Public Holidays – 8.00am to 6.00pm.* ▪ *Outdoor sporting activities are permitted provided the LAeq noise level, measured over a representative period, does not exceed the background LA90 sound level by more than 10 dBA when measured in the vicinity of the external structure of any residential premises.*	In summer months, the facility is proposed to operate until 8pm. Summer opening hours and winter opening and closing hours are compliant. Due to the minimal impact of the proposed in terms of acoustic privacy the extended hours to 8pm in summer will not impact the amenity of surrounding residences. These details are provided in the Key Operational Considerations document submitted with this application.	NO
	▪ *Council may require a Noise Impact Statement to be submitted, depending on the scale, nature and location of the development to residential areas and other sensitive land uses.*	A noise impact statement has been submitted with this application.	YES

Appendix K Traffic / Parking Study – McLaren traffic Engineering

M^C LAREN TRAFFIC ENGINEERING

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9545 1227
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

6th August 2014
Ref: 2014/192.F01A.CM/pk

Mr Lei Chen
C/o PricewaterhouseCoopers
Darling Park
201 Sussex Street
Sydney NSW 2000
mob: 0404 898 929

Attention: Lei Chen

PARKING IMPACT ASSESSMENT
AERIAL ROPES CENTRE &
ST MARYS RUGBY LEAGUE CLUB, ST MARYS

Dear Lei,

Reference is made to your request (email dated 23rd June 2014) to provide a parking review and advice regarding a proposed Aerial Ropes Centre attached to St Marys Rugby League Club, St Marys. The club is currently has developments applications in the assessment process for 2 motel buildings, a fitness centre and staged expansion of the club.

In regards to parking it is important to consider the future needs of the site and its location within the local precinct. The site aims to provide its parking requirement wholly off-street and hence minimise any impact to local parking environment. The major factors affecting the parking provision are hence the scale and operation of the various land uses on the site. The proposed future scale is understood to be:

- Existing Leagues Club – 11305sqm
- Stage 1 Expansion – 1642sqm
- Stage 2 Expansion – 2025sqm
- Motel – 2 X 80 rooms = 160 rooms
- Fitness Centre – Gymnasium of 5068sqm
- Aerial Ropes Centre – Capacity for 150 people, 1100sqm
- Carparking – 1190 spaces (assuming all DA are approved)

The existing club has been surveyed to accumulate a maximum of 780 off-street car spaces. The DCP parking rate estimates in the order of 2500 car spaces, which is significantly out of proportion. Any future expansion of the club will be expected to operate similarly to the existing, hence it is deemed appropriate to linearly project the current actual parking rate of 1 space per 14.5sqm.

The Motel is considered to have a shared parking component with the club given the reasonable assumption that generally some of the motel users will also attend the club. A dual-use rate at any time of 20% has been applied in calculations to reflect a conservative, though reasonable, operation. Likewise, as suggested by the RMS 'Guide to Traffic Generating Developments', it is reasonable to assume an 85% unit occupancy rate. The combined total is then 100% X 80% X 85% = 68% and this factor has been included in calculations.

The Fitness Centre is considered a gymnasium for parking provision purposes and Penrith City Council DCP does not contain a parking rate for this land use. Considering the site neighbours the LGA of Blacktown City Council, it is considered reasonable to apply their parking rate for the subject site. The parking rate is hence 4 spaces per 100sqm and being within 12% of the RMS recommended rate is considered reasonable.

The Aerial Ropes Centre is considered an entertainment facility under Penrith City Council DCP and is required to provide parking at a rate of 1 space per 3.5 seats. The capacity of the facility is rated as 150 people and it is considered reasonable to vary the requirement to be 1 space per 3.5 guests and 1 per 2 staff.

Parking accumulation varies throughout the week. Experience shows the following comparison to the peak accumulation for the critical Friday PM and Saturday Mid-day periods:

TABLE 1: COMPARATIVE PARKING ACCUMULATION

Land Use	Friday PM (% of Peak)	Saturday Mid-day (% of Peak)
Club	100	45
Motel	100	50
Fitness Centre	50	100
Aerial Ropes Centre	60	100

The resulting PEAK parking requirement per land use is calculated as follows:

Club 14972sqm / 14.5 = **1033 spaces**

Motel (160 units X 68%) + 2 for managers + 3 for up to 18 staff = **114 spaces**

Fitness Centre 5068 * 4 / 100 = **203 spaces**

Aerial Ropes Centre 150 guests / 3.5 + up to 10 staff / 2 = **48 spaces**

Applying the critical parking comparison to the peak accumulation per land use provides the total parking requirement, calculated as follows:

TABLE 2: PROJECTED PARKING REQUIREMENT

Land Use	Friday PM (Car Spaces)	Saturday Mid-day (Car Spaces)
Club	1033	465
Motel	114	57
Fitness Centre	102	203
Aerial Ropes Centre	29	48
TOTAL	**1278**	**773**

The subject development provides 1190 car spaces which therefore represents a shortfall of 88 parking spaces should all developments be approved, constructed and occupied. The staged nature of the site's development allows for the actual operation to be observed and parking rates recalculated after part occupation. With this is mind it is recommended to allow the motel, fitness centre, aerial ropes centre and stage 1 expansion of the club to operate, at which time the development is projected to require only 1138 spaces. Then the actual parking demand can be compared to current projections in case the development with 1190 spaces sufficiently services the site including stage 2 without additional parking being constructed.

Please contact the undersigned should you require further information or assistance.

Yours faithfully
M^{c}LAREN TRAFFIC ENGINEERING

Craig M^{c}Laren
Director
BE Civil. Graduate Diploma (Transport Eng) MAITPM MITE [1985]
RMS Accredited Level 3 Road Safety Auditor
RMS Accredited Traffic Control Planner, Auditor & Certifier (Orange Card)

Appendix L AAP Safety Statement – Touch Cloud

Go Bananas - AAP Safety

Structure

Conformity to

1. Building Code of Australia, where contextually appropriate.
2. ASTM International F2959-12 Standard Practice for Special Requirements for Aerial Adventure Courses.
3. Design parameters as dictated by a Premier Engineering Firm.

PPE

All PPE equipment will meet the performance requirements (as defined by its application) of one or more of the following standard bodies

1. Standards Australia AS
2. Committee of European Normalisation CEN

Present PPE (01/2008)	Standard
Fall Arrest Harness	AS/NZS 1891.1 EN361
Sit Harness	AS/NZS 1891.1 EN813 EN 358 EN 12277A/B
Slings	CE 0639 EN 566
Rigging Plates	CE 0120
Lanyards	AS/NZS 1891.1 EN 354
Tube Nut Connector	CE 0426 EN 362/Q UIAA
Traveller	AS/NZS 1891 & 3533 & DR07324
Carabineer	CE 0120 EN 362
Double Action Snap Hook	CE 0426 K EN 362/B NFPA-P
Auto Descender	CE 0158 EN 341/ EN 1496
Descender	CE 0197 EN 341 class A
Rope	CE 0123 EN 1891 Type A
Ascender	CE 0197 EN 567 NFPA L
Dual Pulley	CE 0123 EN 12278

Operation Procedure

To be derived by reference to the principle of HB 246:2010 Guidelines for managing risk in sport and recreation organizations.

Note: Use of a 'smart' Y lanyard ensures unbroken fall protection during participation at height.

Facility Risk Management

An example of a typical TCg strategy is outlined in Fig.1

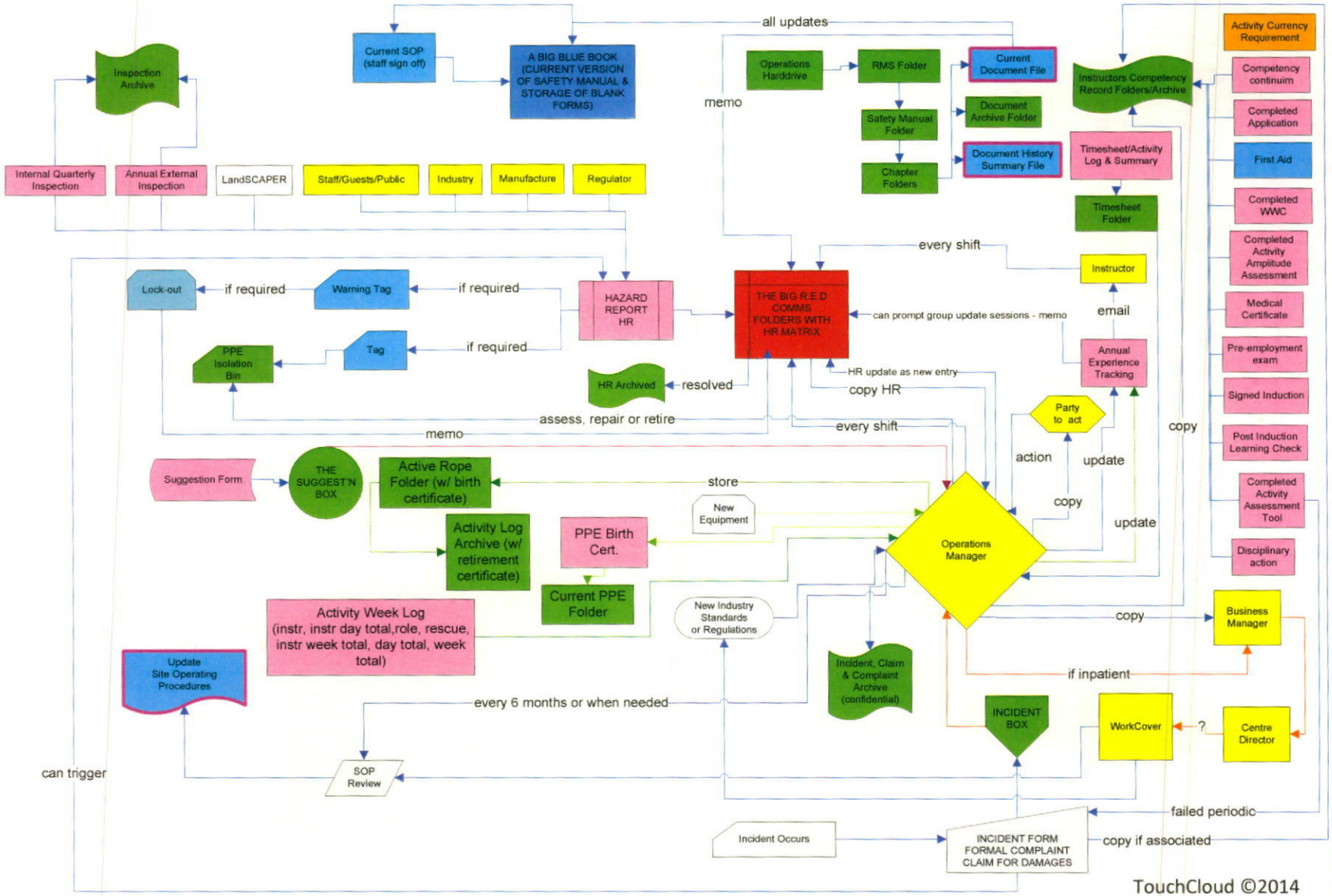


Fig. 1

Appendix M Supporting documents from previous applications

FPA AUSTRALIA
Certified Business
Bushfire Planning & Design

Corporate member of the Fire Protection Association of Australia

Tuesday, 8 July 2014

- ***Purpose;*** *Advice regarding any potential bushfire requirements caused by the proposed new works to be undertaken on the St Mary's Leagues Club facility.*
- ***Address;*** *Forrester Road North St Mary's.*
- ***Lot and DP number;*** *Lot 1, DP 1175275.*
- ***Referenced documents;*** *Plans dated April 2013 revision P3 dated 01/07/2014 by Curtain Bathgate and Somers.*
- ***Proposed works;*** *alterations and additions to the north western facade of the existing building.*

To whom it may concern,

Dear Sir/Madam.

Bushfire Planning Services has been asked by Mr Lei Chen of Price Waterhouse Coopers supply comment regarding the proposed new works to be undertaken on the St Mary's Leagues club facility.

The proposal is for the construction of a new entry area and function centre to the Western, non-hazard side of the existing building.

The mapped bushfire hazard to this proposal is to the east of the proposed new works at a distance of well over 100 m. The vegetation has previously been identified as Woodland on land that is generally flat.

As the proposed new work is greater than 100 m from the identified hazard the deemed to satisfy construction requirements of AS3959 2009 are not considered applicable to this proposal.

Although AS 3959 2009 is not considered appropriate for this building, Planning for Bushfire Protection (PBP) applies to *'all development applications on land that is classified as Bushfire Prone Land (BPL), identified on a councils BPL map'*.

Planning for Bushfire Protection states in relation to 'other classes of buildings';

- ..... *Class 10b buildings in bushfire prone areas should be non-combustible and where an aboveground swimming pool is erected it should not adjoin or be attached directly to a wall of the building of class 1-4*.....

- *"The BCA does not provide for any bushfire specific performance requirements and as such AS 3959 does not apply as a set of "deemed to satisfy" provisions. The general fire safety construction provisions are taken as acceptable solutions, but the aims and objectives of PBP apply in relation to other matters such as access water and services, emergency planning and landscape/vegetation management."*

The following outlines both the aim and objectives of Planning for Bushfire Protection.

The aim of PBP is as follows;

"The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on-site amenity and protection of the environment".

The objectives of Planning for Bushfire Protection are as follows;

- *Afford occupants of any building adequate protection from exposure to a bush fire;*
- *Provide for a defendable space to be located around buildings;*
- *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition*
- *Ensure that safe operational access and egress for emergency service personnel and residents is available*
- *Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ);*
- *Ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).*

The following table outlines the relevant aim and objectives, the method of compliance/non-compliance and opinion of compliance or non-compliance with those aims and objectives;

Aims of Planning for Bushfire Protection	*Opinion*	*Compliant*
The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on-site amenity and protection of the environment".	The development assessment procedure has identified that the subject lot is considered to be bushfire prone land. It is considered that this proposal can comply with the aim of PBP of *minimising* the impacts of a bushfire on the property.	Yes

Afford occupants of any building adequate protection from exposure to a bush fire;	Planning for bushfire protection considers that the standard fire safety construction provisions of the BCA are acceptable.	Yes
Provide for a defendable space to be located around buildings;	It is considered there is adequate defendable space around the development.	Yes
Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition	This proposal has a separation distance greater than 100 m. Direct flame contact is considered highly unlikely to occur from the mapped hazard.	Yes
Ensure that safe operational access and egress for emergency service personnel and residents is available	It is considered that the access and egress for the site is adequate.	Yes
Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ);	Normal property maintenance can provide this.	Yes
Ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).	It is assumed that all utilities are in accordance with the requirements of the Building Code of Australia and appropriate Australian Standards.	Yes

1. Conclusion.

This proposal falls outside the requirements for specific bushfire safety construction standards as outlined in the BCA and requires only the general fire safety provisions of the BCA that are associated with that class of structure.

Planning for Bushfire Protection requires that this proposal complies with the aims and objectives of that document.

It is considered that this proposal does comply with the aims and objectives of Planning for Bushfire Protection.

Bushfires are affected by many external influences such as climactic conditions, vegetation type, moisture content of the fuel, slope of the land and human intervention to name a few and are difficult to predict.

This report does not intend to provide a guarantee that the subject property will survive if a bushfire should impact the surrounding area. The purpose of this report is to show the developments level of

compliance or in some cases non-compliance with the New South Wales legislation regarding building in bushfire prone areas.

Where non-compliance is found measures will be suggested that should make the building less susceptible to the various attack mechanisms of a bushfire and comply with the performance requirements of the Building Code of Australia.

The opinions expressed in this report are based on the writers experience and interpretation of the relevant guidelines and standards. Notwithstanding the above, these guidelines and standards are open to interpretation. All care has been taken to ensure that the opinions expressed in this report are consistent with past successful outcomes.

Some of the information used in the compilation of this assessment has been provided by the proponent or the proponent's representatives. While we believe this information to be true and have accepted the information in good faith this company or its representatives will not accept any responsibility if the provided information is determined to be incorrect.

If any further clarification is required for this report please do not hesitate to contact me using the details above.

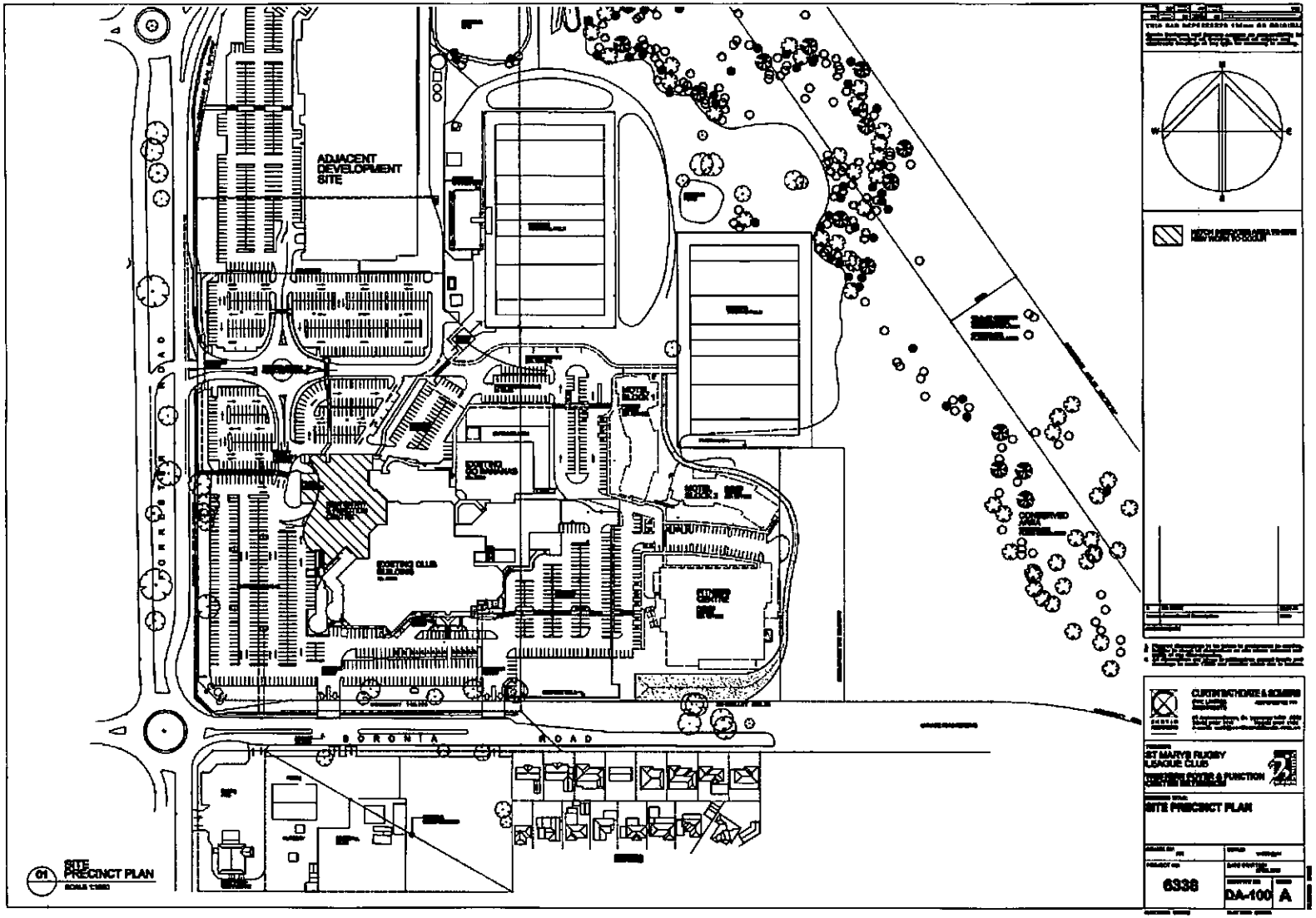
Should any further clarification be necessary please do not hesitate to contact me.

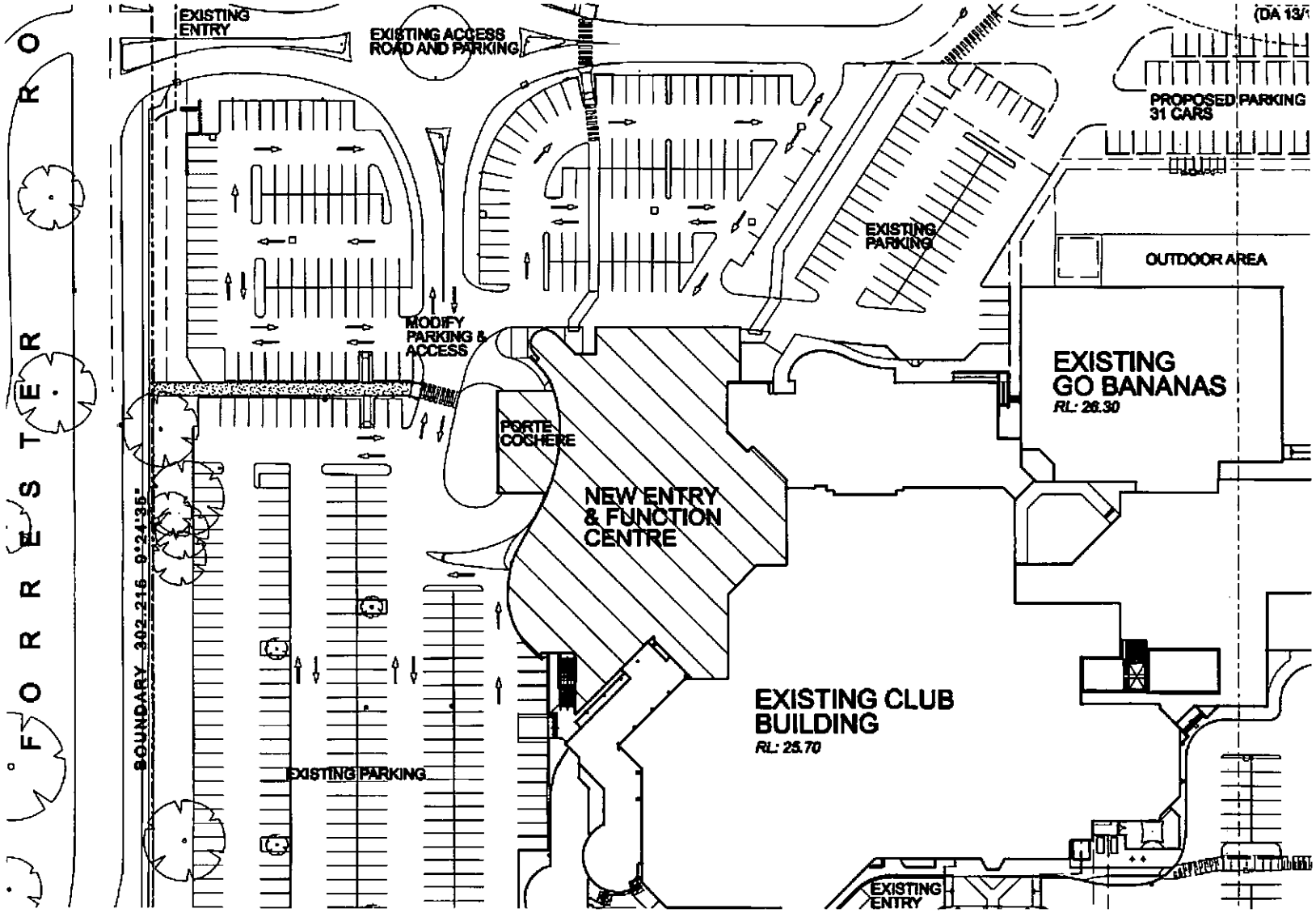
Yours Sincerely

Matthew Willis

Grad Dip Planning for Bushfire Prone Areas ***(FPAA BPAD A BPD-PA 09337)***

Bushfire Planning Services Pty Limited.





WorleyParsons
resources & energy

Infrastructure and Environment
141 Walker Street
North Sydney NSW 2060 Australia
Telephone: +61 2 8923 6866
Facsimile: +61 2 8923 6877
worleyparsons.com
WorleyParsons Services Pty Ltd
ABN 61 001 279 812

Ref: 301015-02943 – St Marys Leagues Club FIA
File: lr301015-02943rg140618-Proposed SMLC Extension FIA.doc

St Marys Leagues Club Pty Ltd
c/- PWC Australia
Darling Park Tower 2
201 Sussex Street
SYDNEY NSW 2000

23rd July 2014

Attention: Mr Lei Chen

Dear Lei,

PROPOSED EXTENSION TO THE ST MARYS LEAGUES CLUB
FLOOD IMPACT ASSESSMENT

I refer to your request for WorleyParsons to complete a Flood Impact Assessment (*FIA*) for a proposed extension to the St Marys Leagues Club (*SMLC*) located at St Marys North. Based on your e-mails and the design drawings included as **Attachment A**, we understand that the proposed extension is to adjoin the north-west corner of the existing SMLC building. As shown in **Attachment A**, the extension is to include a new entry driveway and entrance to the club, a lobby, function rooms and gaming areas.

As part of previous flood investigations completed by WorleyParsons for the Leagues Club and the Masters Home Improvement Centre Development (*both located to the north west of the extension*) the extent of the site on which the extension is proposed was identified as being flood prone during a local catchment 100 year recurrence flood; i.e., flooding originating from rainfall across the local catchment south of the SMLC site. Although the SMLC site is also inundated during a 100 year recurrence Ropes Creek flood, the extent of inundation does not encroach within the extent of proposed works.

In recognition of the susceptibility for flooding the Leagues Club engaged WorleyParsons to assess the proposed works with relation to the development controls outlined in the '*Penrith City Council: Development Control Plan*' (*2010*). These controls are summarised below:

- Flood levels are not increased by more than 0.1 metres by the proposed filling;
- Downstream velocities are not increased by more than 10% by the proposed filling;
- Proposed filling does not redistribute flows by more than 15%;
- The potential for cumulative effects of possible filling proposals in that area is minimal;
- There are alternative opportunities for flood storage;
- The development potential of surrounding properties is not adversely affected by the filling proposal;
- The flood liability of buildings on surrounding properties is not increased;
- No local drainage flow/runoff problems are created by the filling; and
- The filling does not occur within the drip line of existing trees.

The following letter serves as the flood impact assessment for the proposed extension to the St Marys Leagues Club.

1. BACKGROUND

WorleyParsons recently completed flood impact assessments for two development proposals located to the north west of the proposed club extension (*refer* **Figure 1**). Both development proposals were located within the greater Leagues Club site.

The following flood impact assessment reports were prepared for the two development proposals:

- Hydrox Nominees Pty Ltd, '*Proposed Home Improvement Centre Development at St Marys – Flood Impact Assessment*', 24th November 2011 by WorleyParsons; and
- St Marys Leagues Club Pty Ltd, '*St Marys Leagues Club Proposed Car Park Extension – Flood Impact Assessment*', 21st September 2012 by WorleyParsons.

As part of these previous investigations detailed flood modelling was undertaken to assess flood conditions under existing and post-development conditions for both a 100 year recurrence Ropes Creek flooding scenario and a 100 year recurrence local catchment flooding scenario. Out of the two flood scenarios the local catchment flood was found to result in worst case flooding in the vicinity of the proposed works and was therefore adopted for the assessment of localised impacts and for the setting of minimum floor level requirements for buildings and car park areas.

Both development proposals have since been accepted by Penrith Council and have been constructed and are currently in operation.

2. ASSESSMENT OF FLOODING IN THE VICINITY OF THE PROPOSED WORKS

The flood modelling completed as part of investigations for the development proposals located to the north of the site was adopted for the assessment of existing flood conditions in the vicinity of the proposed works.

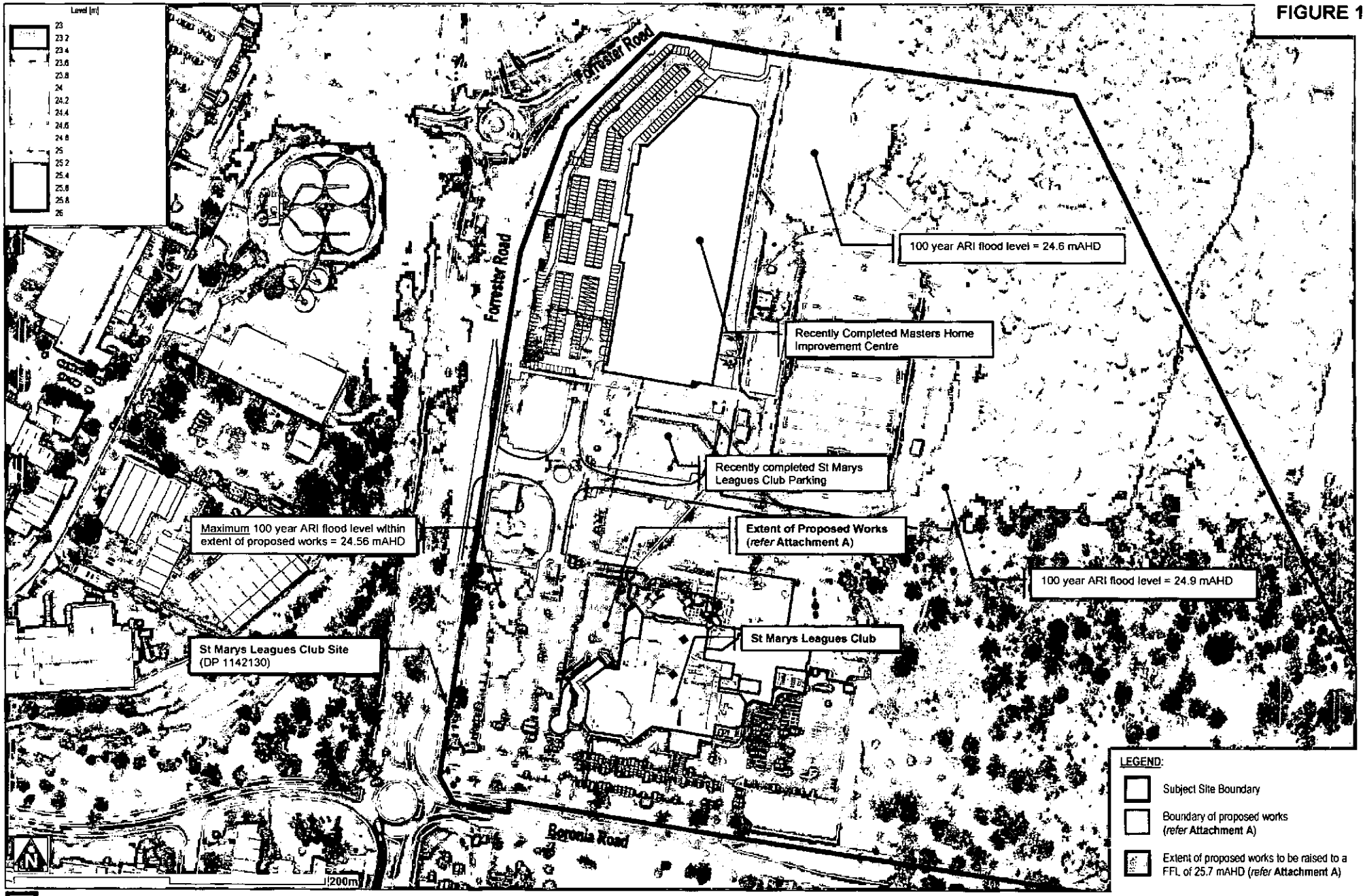
Peak flood levels and flood extents are shown in **Figure 1** for the 100 year recurrence Ropes Creek flooding scenario. As shown, the 100 year recurrence Ropes Creek flood is not predicted to inundate those parts of the site on which development is proposed. Notwithstanding, a peak flood level of 24.56 mAHD is predicted to occur to the east of the proposed works within the Leagues Club parking lot (*refer* **Figure 1**).

Peak flood levels and flood extents for the local catchment flooding scenario are shown in **Figure 2** in the vicinity of the proposed works. As shown, the 100 year recurrence local catchment flood is predicted to inundate parts of the site on which development is proposed with a peak flood level of 24.97 mAHD predicted across this area.

Depth and velocity mapping was also prepared for the 100 year recurrence local catchment flood and is shown in **Figure 3**. As shown, a maximum depth of 0.22 metres and a maximum velocity of 0.15 m/sec are predicted in the vicinity of the proposed extension. Depths and velocities are, however, typically much less, rarely exceeding 0.1 metres and 0.05 m/sec across the extent of the proposed works.

Based on the discussion above and mapping presented within **Figure 1**, **Figure 2** and **Figure 3**, it is evident that the local catchment flooding scenario would generate worst-case flood conditions in the vicinity of the proposed works.

FIGURE 1



WorleyParsons
resources & energy

301015-02943 – St Marys Leagues Club FIA, St Marys
fg301015-02943rg140813-fig1_Predicted 100yr Levels Ex (Ropes Ck Flooding).doc

PREDICTED FLOOD LEVELS AT THE PEAK OF THE 100 YEAR RECURRENCE FLOOD FOR EXISTING CONDITIONS [ROPES CREEK FLOODING SCENARIO]

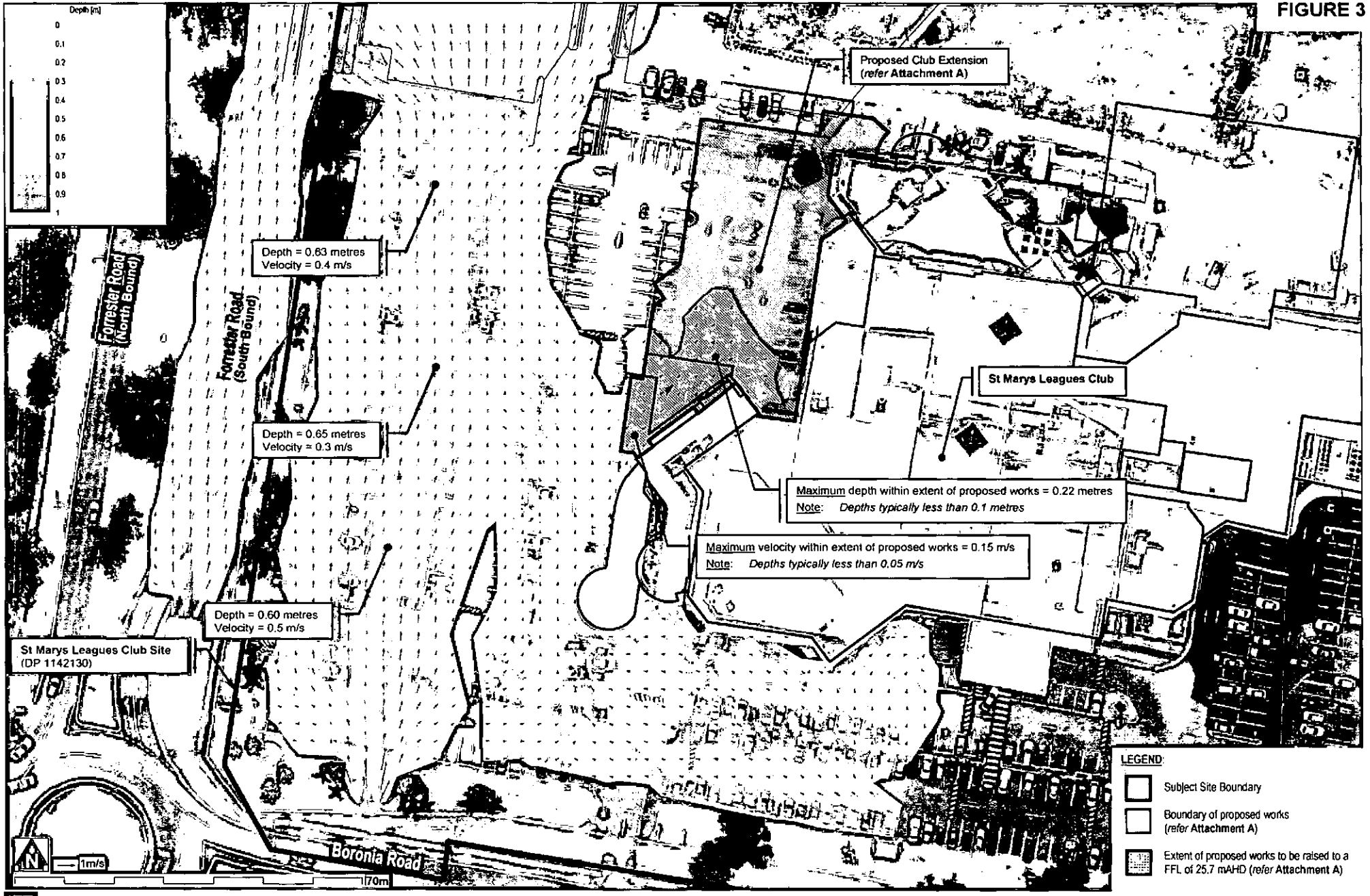
FIGURE 2

WorleyParsons
resources & energy

301015-02943 – St Marys Leagues Club FIA St Marys
fg301015-02943rg140613-fg2_Predicted 100yr Levels Ex (Local Catchment Flooding).doc

PREDICTED FLOOD LEVELS AT THE PEAK OF THE 100 YEAR RECURRENCE FLOOD FOR EXISTING CONDITIONS [LOCAL CATCHMENT FLOODING SCENARIO]

FIGURE 3



WorleyParsons
resources & energy

301015-02943 – St Marys Leagues Club FIA, St Marys
fg301015-02943rg140513-fg3_Predicted 100yr Depths Ex [Local Catchment Flooding].doc

PREDICTED DEPTHS & VELOCITIES AT THE PEAK OF THE 100 YEAR RECURRENCE FLOOD FOR EXISTING CONDITIONS [LOCAL CATCHMENT FLOODING SCENARIO]

3. PENRITH CITY COUNCIL DEVELOPMENT CONTROL PLAN (*DCP*)

Development within the Penrith City Council (*PCC*) LGA is controlled by the '*Penrith City Council: Development Control Plan 2010*'. This policy outlines a set of guidelines that future developments must satisfy in order to receive development consent from PCC. Of these guidelines, specific requirements are given to developments, both residential and commercial, that are proposed on flood liable lands. These specific guidelines are outlined in *Section 3.5 'Flood Liable Lands'* in the PCC DCP (*2010*).

The development proposed by the St Marys Leagues Club is on land liable to flooding from local catchment flooding and to a lesser extent Ropes Creek flooding. Accordingly, in order to satisfy Council's DCP the Leagues Club must demonstrate that the proposed development meets the requirements of the DCP.

The following section of the report outlines each of the DCP requirements applicable to the proposed development and includes commentary on whether the proposed development complies.

3.1 Assessment of DCP Requirements Relative to the Proposal

i) '*The development will not increase the flood hazard or risk to other properties*' (*DCP Page 28, 2010*)

As shown in **Figure 2**, the proposed works will only have the potential to remove a minor portion of flood storage at the peak of the local catchment 100 year recurrence flood. In that regard, it is WorleyParsons professional opinion and judgement that removal of this minor storage will not manifest as any increase in flood hazard within or outside of the Leagues Club site. This is supported by the depth mapping shown in **Figure 3**, in which depths within the storage area are shown to be shallow and no deeper than 0.22 metres.

Accordingly, removal of the minor area of flood storage will have no impact on flood hazards within or outside of the site.

ii) '*Floor levels shall be at least 0.5 metres above the 1:100 ARI flood or the buildings shall be flood-proofed to at least 0.5 metres above the 1:100 ARI flood*' (*DCP Page 29, 2010*)

It is understood that the proposed club extension is to be constructed with a minimum Finished Floor Level (FFL) of 25.7 mAHD. This level is understood to be in line with the existing FFL for the remainder of the Leagues Club ground floor.

Based on analysis of **Figure 1** and **Figure 2**, it is predicted that a peak flood level of 24.56 mAHD and 24.99 mAHD is predicted in the vicinity of the works for the Ropes Creek and local catchment flood scenarios, respectively. Accordingly, the peak level that will govern the minimum FFL is 24.99 mAHD.

Based on the proposed FFL of 25.7 mAHD it is therefore clear that the proposed extension will have a freeboard of approximately 0.7 metres above the maximum flood level. This is greater than the 0.5 metres required by the DCP (*2010*) and is therefore in compliance.

iii) '*Flood levels are not increased by more than 0.1 metre by the proposed filling*' (*DCP Page 32, 2010*)

As discussed above, the proposed development will only have the potential to remove a minor area of flood storage with maximum depths of 0.22 metres (*refer* **Figure 3**). The minor volume of flood flow stored within this area and its location offline from the primary overland flow paths

means the proposed development will not result in any measurable increases in peak flood levels within or outside of the Leagues Club site.

iv) '*Downstream velocities are not increased by more than 10% by the proposed filling*' (*DCP Page 32, 2010*)

The proposed works will only have the potential to remove a minor flood storage area that is located offline from the primary overland flow paths (*refer* **Figure 3**). Accordingly, removal of this storage would not have the potential to cause any measurable increase in downstream peak flow velocities.

v) '*Proposed filling does not redistribute flows by more than 15%* (*DCP Page 32, 2010*)

It is WorleyParsons professional opinion that the removal of the minor area of flood storage will not have the potential to cause any significant redistribution of flows.

vi) '*The potential for cumulative effects of possible filling proposals in that area is minimal*' (*DCP Page 32, 2010*)

As shown in **Figure 1**, the proposed club extension is situated towards the centre of the Leagues Club site and is surrounded by an existing parking lot to the west and south, the stadium to the north-west and the newly developed parking lot extension and the newly developed Masters Home Improvement Centre to the north.

In order for any future development to have a cumulative impact on local catchment flooding it follows that the development must be proposed either upstream or to the west of the site within the flood extent of the 100 year local catchment flood (*refer* **Figure 2**). Recognising that the land to the south of Boronia Road is already developed as a residential precinct and the land to the west is an existing sealed parking lot it follows that there is little to no potential for future development of any significant scale to occur across these areas. In that regard, it follows that the potential for cumulative impacts to occur is effectively negligible.

vii) '*There are alternative opportunities for flood storage* ' (*DCP Page 32, 2010*)

As shown in **Figure 3**, the flood storage area that is to be removed is very minor with a maximum ponding depth of 0.22 metres and typical depths that are less than 0.1 metres. The loss of this minor area of flood storage is considered to have no significant impact on localised flood conditions and as such no alternative flood storage is considered necessary and is not proposed.

viii) '*The development potential of surrounding properties is not adversely affected by the filling proposal*' (*DCP Page 32, 2010*)

As discussed above, the proposed extension to the Leagues Club is not predicted to cause any significant impacts on peak flood levels and/or peak flow velocities during the Ropes Creek and local catchment flooding scenarios. The proposed development will therefore have no adverse impact on surrounding properties and their potential for future development.

ix) '*The flood liability of buildings on surrounding properties is not increased*' (*DCP Page 32, 2010*)

The proposed extension to the Leagues Club is not predicted to cause any significant impacts on peak flood levels and/or peak flow velocities during the Ropes Creek and local catchment flooding scenarios. Accordingly, the flood liability of buildings on surrounding properties will not be increased.

4. CONCLUSIONS

The above report shows that the proposed extension to the St Marys Leagues Club is in compliance with the '*Penrith City Council: Development Control Plan 2010*' with relation to flooding. In that regard, the works are proposed to be constructed with sufficient freeboard above the peak 100 year recurrence flood and will not have the potential to cause any adverse impacts on adjacent properties.

I trust that the above information is suitable in addressing the flood related requirements of Penrith City Council's Development Control Plan. Please feel free to contact Warick Honour or myself should you require clarification of any item.

Yours faithfully
WorleyParsons

Roy Golaszewski
Project Engineer
WorleyParsons

Reviewed by

Warick Honour
Senior Engineer
WorleyParsons

WorleyParsons

resources & energy

ATTACHMENT A

-

DESIGN DRAWINGS

Sydney
Tower 2, Level 23, Darling Park
201 Sussex Street Sydney, NSW 2000
t +02 8233 9900
f +02 8233 9966

Brisbane
Level 7, 123 Albert Street
Brisbane, QLD 4000
t +07 3007 3800
f +07 3007 3811

Melbourne
Level 12, 120 Collins Street
Melbourne, VIC 3000
t +03 8663 4888
f +03 8663 4999

Perth
Level 1, 55 St Georges Terrace
Perth, WA 6000
t +08 9346 0500
f +08 9221 1779

Australia • Asia • Middle East
w urbis.com.au e info@urbis.com.au