



Monte **Scientia** Project

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TRANSPORT AND ACCESSIBILITY REPORT

Monte Sant Angelo Mercy College
Sports and Science Building

Reference: 19.455r02v05
Date: April 2020

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CONTENTS

1. Introduction	1
1.1 SEARs Requirements	1
1.2 Report Structure	3
2. Location and Site	4
3. Existing Traffic Conditions	8
3.1 Road Network	8
3.2 Existing Traffic Volumes Adjacent to Site	10
3.3 Existing On-street / Off-street Parking	14
3.4 Public Transport	16
4. Existing Management Measures	20
4.1 Existing Pedestrian Management	20
4.2 Existing School Travel Characteristics	21
4.3 Key Intersections	27
5. Description of Proposed Development	31
6. Parking Requirements	32
6.1 School Population Overview	32
6.2 School Car Parking Overview	32
6.3 Car Parking Requirements	32
6.4 Accessible Parking	33
6.5 Servicing Arrangements	33
6.6 Bicycle Parking	33
6.7 Emergency Vehicle Access	34
7. Traffic and Transport Impacts	35
7.1 Modelled Scenario	35
7.2 Peak Period Intersection Performance	35
7.3 Public Transport Impacts	39
7.4 Pedestrian and Bicycle Impacts	39
8. Access and Internal Design Aspects	40
8.1 Site Vehicular Access	40
8.2 Internal Design	40
8.3 Summary	41
9. Conclusions	42



Appendices

Appendix A: Photographic Record

Appendix B: Reduced Plans

Appendix C: SIDRA Outputs

Appendix D: Swept Path Analysis



1. INTRODUCTION

1.1 SEARs Requirements

TRAFFIX has been commissioned by Monte Sant Angelo Mercy College (the **Applicant**) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (**SEARs**), and in support of the SSD-10393 for the development of a new Sports and Science Building at Monte Sant Angelo Mercy College, North Sydney (**Monte Campus**).

Specifically, this report addresses the following SEARs:

SEARs	Report Reference
7. Transport and Accessibility Include a transport and accessibility impact assessment, which details, but not limited to the following:	
accurate details of the current daily and peak hour vehicle, existing and future public transport networks and pedestrian and cycle movement provided on the road network located adjacent to the proposed development	Sections 3.2 and 3.4
details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips	Section 4.2
the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand of the proposed development	Sections 7.3 and 7.4
measures to integrate the development with the existing/future public transport network: the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for, and details of, upgrades or road improvement works, if required (Traffic modelling is to be undertaken using SIDRA network modelling for current and future years)	Sections 7.2.1 and 7.3
the identification of infrastructure required to ameliorate any impacts on traffic efficiency and road safety impacts associated with the proposed development, including details on improvements required to affected intersections, additional school bus routes along bus capable roads (i.e. minimum 3.5 m wide travel lanes), additional bus stops or bus bays	Section 7.2.1
details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan) and the	Refer to separate Green Travel Plan prepared by TRAFFIX (Ref: 19.455r03v02; dated: 10 March 2020).



SEARs	Report Reference
provision of facilities to increase the non-car mode share for travel to and from the site	
the proposed walking and cycling access arrangements and connections to public transport services	Section 4.1
the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones	Section 3.3
proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance proposed number of on-site car parking spaces for teaching staff and visitors and corresponding compliance with existing parking codes and justification for the level of car parking provided on-site	Section 6
an assessment of the cumulative on-street parking impacts of cars and bus pick-up/drop-off, staff parking and any other parking demands associated with the development	Section 6
an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures and personal safety in line with CPTED	Refer to CPTED assessment within the Environmental Impact Assessment Report
emergency vehicle access, service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times)	Section 6
- the preparation of a preliminary Construction Traffic and Pedestrian Management Plan to demonstrate the proposed management of the impact in relation to construction traffic addressing the following: - assessment of cumulative impacts associated with other construction activities (if any) - an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity - details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process - details of anticipated peak hour and daily construction vehicle movements to and from the site - details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle - details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle - safety and diversion measures to limit time delay and detour distances should the development require closure of the facility.	Refer to CTMP prepared by Cornerstone.



1.2 Report Structure

The report is structured as follows:

- ▶ Section 2: Describes the site and its location
- ▶ Section 3: Documents existing traffic conditions
- ▶ Section 4: Describes the existing college travel characteristics
- ▶ Section 5: Describes the proposed development
- ▶ Section 6: Assesses the parking requirements
- ▶ Section 7: Assesses traffic impacts
- ▶ Section 8: Discusses access and internal design aspects
- ▶ Section 9: Presents the overall study conclusions



2. LOCATION AND SITE

The Monte campus is approximately 2.52 hectares and comprises 18 allotments, which are described in **Table 1** below and shown in **Figure 1**. It is noted that the new Sports and Science Building and the proposed works are located on Lots 3, 4 and 5 in DP 262534 (the **Site**) (refer to **Figure 2**). A location plan is also provided in **Figure 3**. In addition, reference should also be made to the Photographic Record provided in **Appendix A**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

Table 1: Monte Campus Allotments

Address	Legal Description
128 Miller Street:	Lot 8 in DP 262534
	Lots 1, 2, 3, 4, 5, 6 and 7 in DP 262534
	Lot 4 in DP 5030
	Lot 1 in DP 780403
5 McLaren Street	Lot 1 in DP 104072
9 McLaren Street	Lo1 A in DP339358
1 McLaren Street	Lot 11 in DP 5030
21-23 McLaren Street	Lot 10 in DP 5030
27 and 27A McLaren Street*	Lots 7 and 8 in DP 5030
29 McLaren Street*	Lot 6 in DP 5030
31 McLaren Street	Lot 5 in DP 5030



Figure 1: Monte Sant Angelo Mercy College Landholdings



Figure 2: The Site: Location of Proposed Sports and Science Building

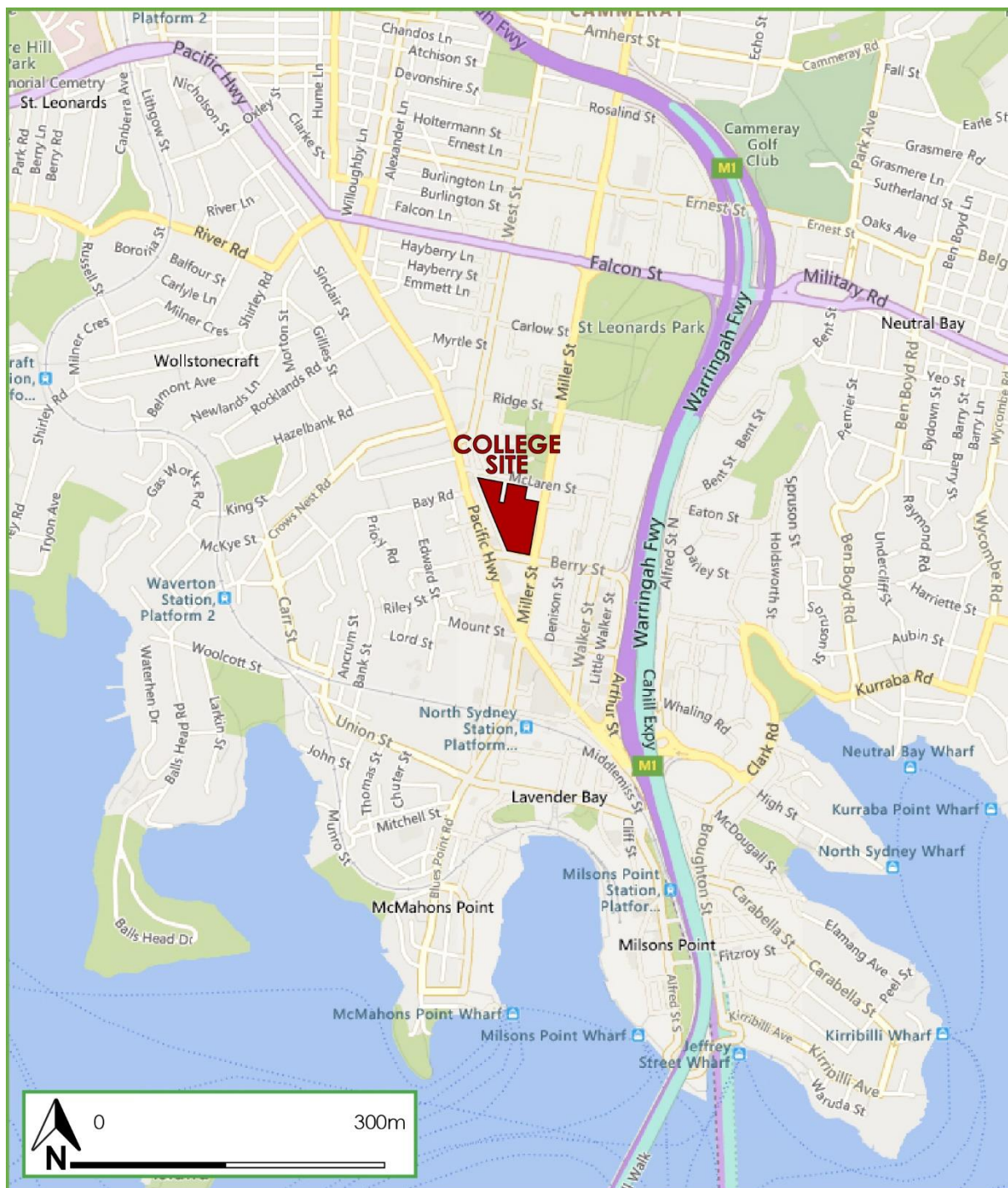


Figure 3: Location Plan



3. EXISTING TRAFFIC CONDITIONS

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 4** with the following roads of particular interest:

- ▶ **Pacific Highway:** is an RMS State Road (MR 10) that generally runs in a north south direction between the Queensland border in the north and the Warringah Freeway in the south. In the vicinity of the site, The Pacific Highway provides a divided carriageway, three (3) lanes of traffic in each direction and accommodates a speed zoning of 60km/h. A T3 transit lane operates in the left northbound lane from 3:00pm to 7:00pm Monday to Friday restricting it to vehicles with three (3) or more people. Time restricted parallel parking is only provided in the left lanes between Berry Street and Miller Street.
- ▶ **Berry Street:** forms part of the RMS State Road (MR 10) and runs in an east west direction between Arthur Street in the east and Edward Street in the west (State road between Arthur Street and Pacific Highway). Berry Street generally provides three (3) lanes of traffic in an eastbound direction only and accommodates a speed zoning of 40km/h. Time restricted parallel parking is provided along both kerbsides.
- ▶ **Miller Street:** is an RMS State Road (SR 2111) that generally runs in a north south direction between Strathallen Avenue in the north and Lavender Street in the south (SR 2111 between Falcon Street and Pacific Highway). Miller Street provides two lanes of traffic in each direction and accommodates a speed zoning of 40km/h in the vicinity of the site. Time restricted parking is generally provided along both kerbsides.
- ▶ **McLaren Street:** a local road that runs in an east west direction between Walker Street in the east and Pacific Highway in the west. McLaren street provides a single lane of traffic in each direction and accommodates a speed zoning of 40km/h. Time restricted parallel parking is generally provided along both kerbsides.
- ▶ **Angelo Street:** is a local road that runs in a north south direction between McLaren Street in the north and Berry Street in the south. Angelo Street provides a single lane of traffic in a southbound direction only and



accommodates a speed zoning of 40km/h. Time restricted parallel parking is generally along the eastern kerbside whereas the western kerbside only provides a loading zone near Berry Street.

As can be seen from the figure below, the site is conveniently located with respect to the collector and arterial road systems serving the region.

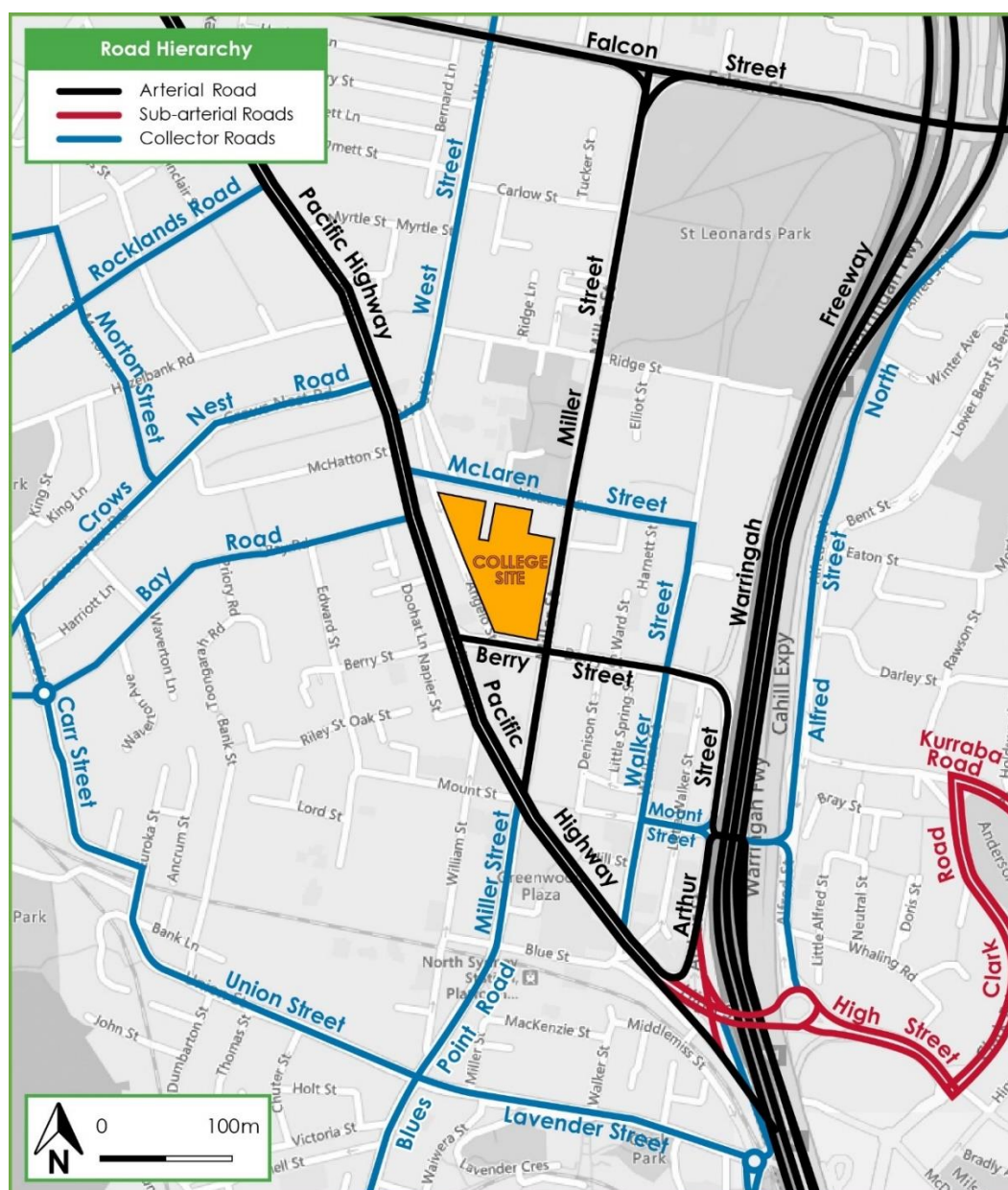


Figure 4: Road Hierarchy



3.2 Existing Traffic Volumes Adjacent to Site

3.2.1 Daily Traffic Volumes

Peak hour traffic volumes are considered approximately 10% of the daily traffic volumes. Thus, Miller Street currently accommodates the following daily traffic volume between McLaren Street and Berry Street:

- ▶ 10,610 vehicles per day.

It is highly relevant to note, that daily traffic volumes are not a relevant consideration for the assessment of the traffic network, which is based on intersection performance during peak (hourly) periods.

3.2.2 Peak Hour Traffic Volumes

Miller Street currently accommodates the following traffic volumes between McLaren Street and Berry Street:

- ▶ 1,061 vehicles in the AM peak hour period; and
- ▶ 809 vehicles in the PM peak hour period.

3.2.3 Pedestrian and Cyclist Volumes

The intersection of Miller Street and Berry Street accommodates the following pedestrian volumes during the AM and PM peak periods, which are shown graphically in **Figures 5 and 6**:

- ▶ 2,733 pedestrians in the AM peak hour period; and
- ▶ 2,482 pedestrians in the PM peak hour period.

The intersection of Miller Street and McLaren Street accommodates the following pedestrian volumes during the AM and PM peak periods which are shown graphically in **Figures 7 and 8**:

- ▶ 1,212 pedestrians in the AM peak hour period; and
- ▶ 920 pedestrians in the PM peak hour period.



Miller Street currently accommodates the following cyclist volumes between McLaren Street and Berry Street during the AM and PM peak periods:

- ▶ 72 cyclists in the AM peak hour period; and
- ▶ 255 cyclists in the PM peak hour period.

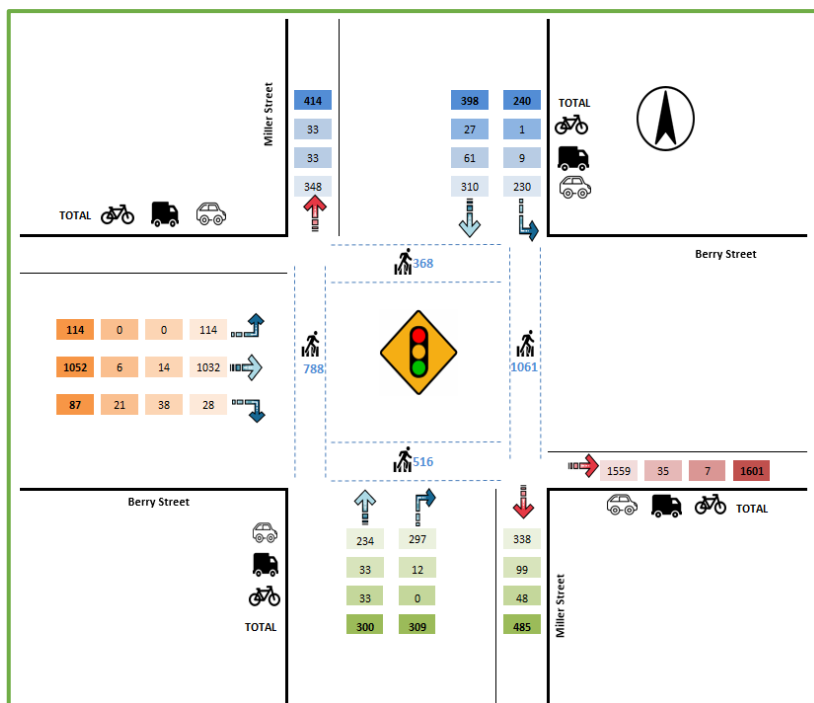


Figure 5: Miller St and Berry St – AM Peak Period Traffic Volumes

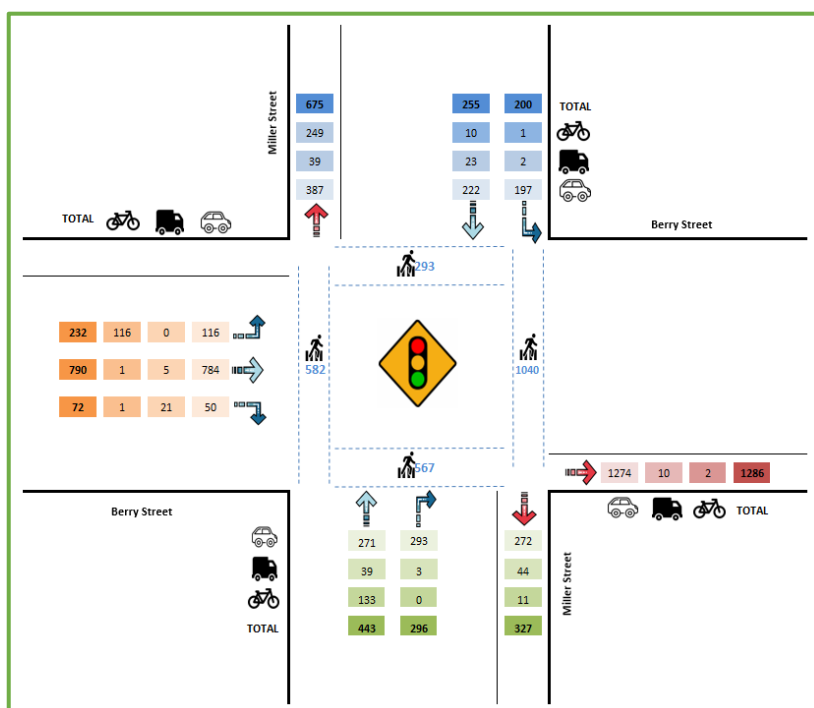


Figure 6: Miller St and Berry St – PM Peak Period Traffic Volumes

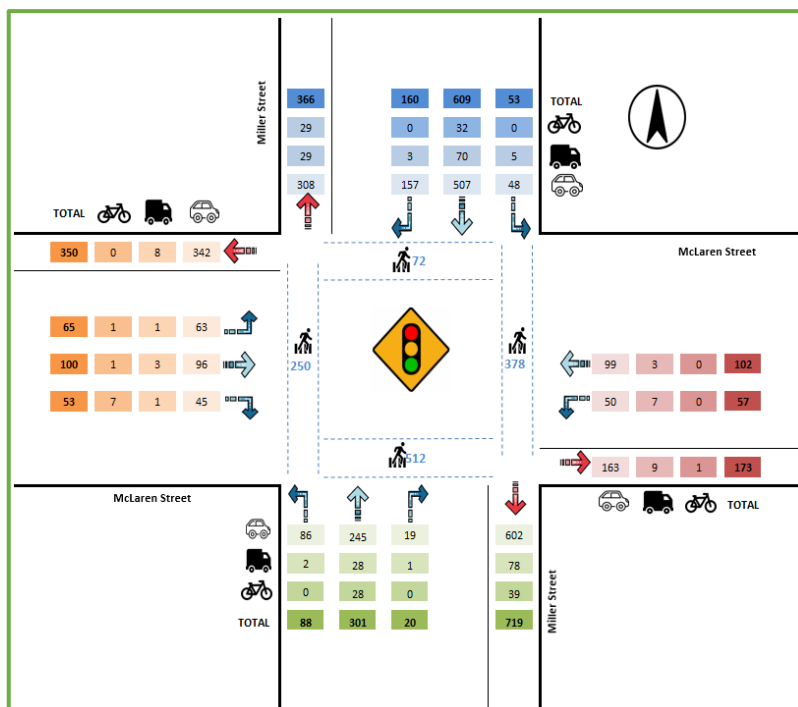


Figure 7: Miller St and McLaren St – AM Peak Period Traffic Volumes

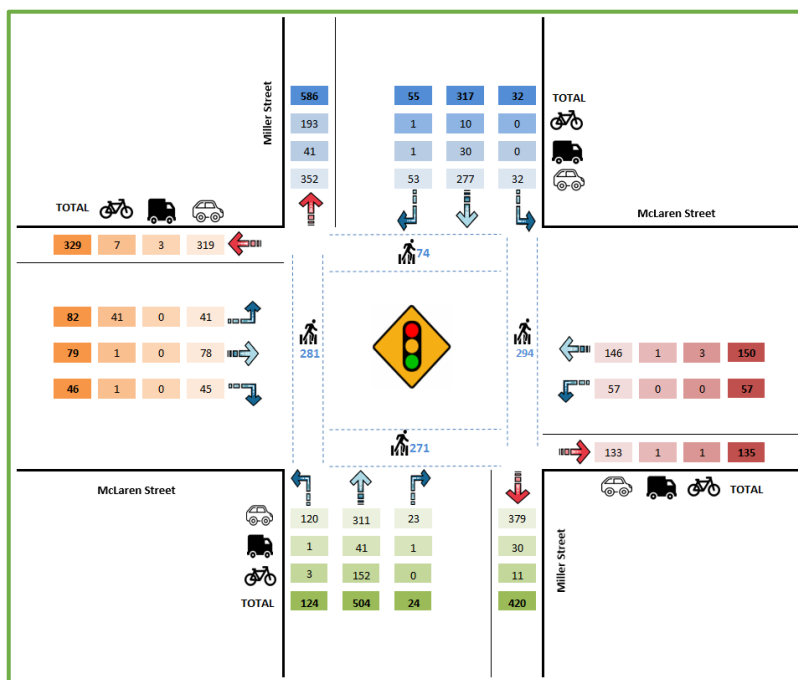


Figure 8: Miller St and McLaren St – PM Peak Period Traffic Volumes



3.3 Existing On-street / Off-street Parking

The existing on-street parking restrictions surrounding the site are shown in **Figure 9** below.

3.3.1 Off-Street Parking

The school currently provides 63 off-street parking spaces, including a single emergency vehicle space and two (2) accessible parking spaces under the existing tennis courts, which are set to be demolished under the proposed development. The parking spaces are available for staff use only and on-site observations by TRAFFIX on 30 September 2019 revealed that the current parking arrangements operated satisfactorily. Numerous unmarked parking spaces are available throughout the remainder of the site; however, these spaces will not be impacted by the proposal.

3.3.2 On-Street Parking

Local roads surrounding the school provide a number of on-street parking options for staff, parents and students. Kerbside parking restrictions include all-day parking, timed no parking, timed bus zones and no stopping. Restricted on-street parking is available near the school at the following locations:

- ▶ Miller Street
- ▶ Berry Street;
- ▶ McLaren Street; and
- ▶ Angelo Street.

The following pick up and drop off parking restrictions are available adjacent the school:

- ▶ McLaren Street: Approximately 12m (2 cars) of 'No Parking 8:00am – 9:30am, and from 2:30pm-4:00pm School Days'.

Remaining sections of kerbside parking adjacent the school comprise no stopping restrictions, bus zones and loading zones.



Figure 9: On-street parking restrictions



3.4 Public Transport

3.4.1 Public Bus Services

The existing public transport network operating in the locality is shown in **Figure 10**. Standard transport planning guidelines state that a development is advantageously located to benefit bus services if it is within 400 metres walking distance of a bus stop. It is evident that the site benefits from excellent bus services with numerous bus stops located within 400 metres of the site. The bus routes servicing the area are shown in **Table 2**.



Table 2: Bus Routes

Route Number	Route Name	Route Number	Route Name
151	Mona Vale to City QVB	252	Gladesville to City King Street Wharf
168	North Balgowlah to Milsons Point	254	Riverview to McMahon's Point
173	Narrabeena to Milsons Point	260	Terrey Hills to North Sydney
188	Mona Vale to City Wynyard	261	Lane Cove to City King St Wharf
200	Bondi Junction to Chatswood	286	Denistone East to Milsons Point
202	Northbridge to City Bridge St	287	Ryde to Milsons Point
203	Castlecrag to North Sydney	290	Epping to City Erskine St
207	East Lindfield to City Bridge St	291	Epping to McMahon's Point
208	East Lindfield to City Bridge St	343	Kingsford to Chatswood
209	East Lindfield to Milsons Point	612X	Castle Hill to Milsons Point
227	Mosman Junction to Milsons Point	622	Dural to Milsons Point
228	Clifton Gardens to Milsons Point	E50	Manly to Milsons Point
229	Beauty Point to Milsons Point	E54	Mona Vale to Milsons Point
230	Mosman Wharf to Milsons Point	M20	Botany to Gore Hill
245	Balmoral to City Wynyard	N90	Hornsby to City Town Hall-
246	Balmoral Heights to City Wynyard	N91	Bondi Junction to Macquarie Park
247	Taronga Zoo to City Wynyard	-	-



3.4.2 Rail Services

In addition to these services, North Sydney Railway Station is located approximately 550 metres south of the site. This station provides services on the T1 – North Shore and Western Line and the T9 Northern Line providing connections to the Sydney CBD, St Leonards, Chatswood and the wider Sydney Trains and Metro networks.

3.4.3 Future Metro Services

In addition to North Sydney Railway Station, the Victoria Cross Metro Station is currently under construction and will be located approximately 150 metres south of the site. The new Metro Station will provide direct connections to Macquarie Park, Epping, Castle Hill and Sydney CBD once it is operational in 2024.

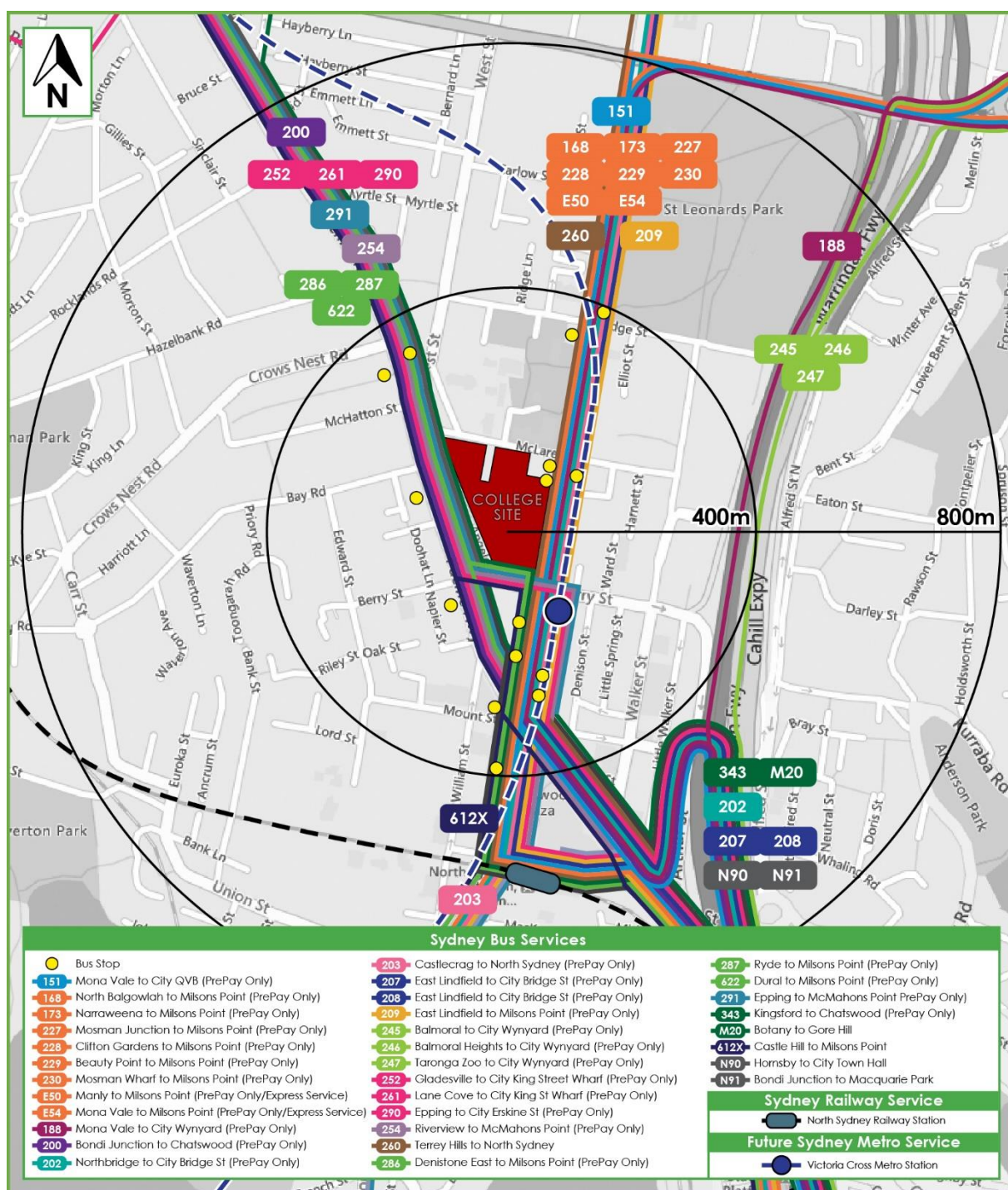


Figure 10: Public Transport



4. EXISTING MANAGEMENT MEASURES

4.1 Existing Pedestrian Management

The school provides six (6) student pedestrian entry/exit points, including the main access on Miller Street, three (3) gates on Angelo Street (near Berry Street) and two (2) gates to McLaren Street, which are shown in **Figure 9**. All students are required to enter and leave the school through these points only. Students will utilise the existing footpaths adjacent the school to travel between the school grounds and the designated pick up and drop off area along McLaren Street and the bus stops on Miller Street. The following pedestrian facilities are also provided in the vicinity of the site to ensure safe pedestrian connections to the wider footpath network:

- ▶ 'Wombat' pedestrian crossing on McLaren Street, between Church Street and Kelrose Lane;
- ▶ Signalised pedestrian crossing at the intersection of Miller Street and McLaren Street; and
- ▶ Signalised pedestrian crossing at the intersection of Miller Street and Berry Street.

These connections between the school and the wider pedestrian/cycling/public transport facilities will not change under the proposed scheme.



4.2 Existing School Travel Characteristics

4.2.1 Context

In order to assess existing travel characteristics of the school development, online travel mode questionnaire surveys were prepared by TRAFFIX and distributed by the school to all staff and students (Year 7 to 12).

The online questionnaire was open for responses for a 10-day period from 9 February 2020 to 19 February 2020. A sample rate of approximately 66% of students and 64% of staff was collected and completed. The survey included a range of questions which were primarily aimed to gain an understanding of average car occupancies and travel modes in the morning and afternoon school peak periods in order to understand the existing development characteristics. The key results of these surveys are discussed in the following sections.

4.2.2 Travel Mode Splits

Table 3 presents the existing staff travel modes, whilst **Table 4** presents the existing student travel modes during the AM and PM school peak periods. Travel mode data will be used in later sections to determine general travel characteristics of the existing educational development.

Table 3: Staff Travel Modes – AM and PM School Peak Periods

Travel Modes	AM Peak	PM Peak
By Car (as driver)	67.0%	67.0%
By Car (as passenger – dropped off/picked up)	2.8%	0.9%
By Car (as passenger – carpool with other staff who park at/near school)	0.9%	0.9%
Public Transport - Bus	6.4%	6.4%
Public Transport - Train	16.5%	18.4%
Cycle	0.0%	0.0%
Walk	6.4%	6.4%

Based on the above survey results; approximately 67% of staff utilise private vehicles to travel to/from the school with the remaining staff utilising other modes of transport (including public transport and walking).



Table 4: Student Travel Modes (Year 7 to12) – AM and PM School Peak Periods

Travel Modes	AM Peak	PM Peak
By Car (as a passenger – dropped off by parent/guardian)	20.1%	5.0%
By Car (as driver)	0.0%	0.0%
By Car (as passenger – carpool with another student driving)	0.1%	0.0%
School Bus	0.0%	0.0%
Public Transport - Bus	65.6%	77.7%
Public Transport - Train	12.5%	15.3%
Cycle	0.0%	0.0%
Walk	1.7%	1.6%
Extra-Curricular Activities On-Site	N/A	0.4%

Table 4 demonstrates that 20.1% of students in Years 7-12 are dropped off in the mornings and 5.0% picked up in the afternoons. Students showed an uptake in public transport of 78.1% in the mornings and 93.0% in the afternoons.

4.2.3 Staff Travel

The results of the travel questionnaires completed by the staff at the Monte Campus are outlined in the tables below. **Tables 5 to 9** present the surveyed travel mode shares, arrival and departure times of the existing staff and parking locations.

Table 5: Staff Travel Modes to Monte Campus

Travel Modes	Number of Staff (Average)	Proportion (AM Peak)
By Car (as driver)	115	67.0%
By Car (as passenger – dropped off/picked up)	5	2.8%
By Car (as passenger – carpool with other staff who park at/near school)	2	0.9%
Public Transport - Bus	11	6.4%
Public Transport - Other	28	16.5%
Cycle	0	0.0%
Walk	11	6.4%



Table 6: Staff Travel Modes from Monte Campus

Travel Modes	Number of Staff (Average)	Proportion (PM Peak)
By Car (as driver)	115	67.0%
By Car (as passenger – dropped off/picked up)	2	0.9%
By Car (as passenger – carpool with other staff who park at/near school)	2	0.9%
Public Transport - Bus	11	6.4%
Public Transport - Other	31	18.4%
Cycle	0	0.0%
Walk	11	6.4%

Table 7: Parking Location of Staff at Monte Campus

Parking Location	Proportion
School Carpark accessed via Miller Street	87.7%*
School Carpark accessed via McLaren Street	1.4%
School Carpark accessed via Angelo Street near Berry Street	9.6%
Miller Street	0.0%
McLaren Street	0.0%
Berry Street	0.0%
Angelo Street	0.0%
Church Street	0.0%
Other	1.4%

* Includes multiple responses from part time staff who work different days of the week.

Table 8: Arrival Time of Staff at Monte Campus

Arrival Time	Number of Staff (Average)	Proportion
Prior to 7:00am	17	10.1%
7:00am – 7:29am	61	35.8%
7:30am – 7:59am	71	41.3%
8:00am – 8:29am	14	8.3%
After 8:30am	8	4.6%
Other	17	10.1%



Table 9: Departure Time of Staff at Monte Campus

Departure Time	Number of Staff (Average)	Proportion
Prior to 3:25pm	6	3.7%
3:25pm – 3:59pm	39	22.9%
4:00pm – 4:59pm	71	41.3%
5:00pm – 5:59pm	42	24.8%
6:00pm – 7:00pm	8	4.6%
After 7:00pm	2	0.9%
Other	3	1.8%

The key findings from the staff travel mode surveys are summarised below:

- ▶ 67% of staff drive a car in the AM and PM periods.
- ▶ An average of 24% of staff utilise public transport to and from the school.
- ▶ 6.4% of staff walk to and from the school.
- ▶ Up to 98.7% of staff park on the school property, whilst no staff park on the surrounding streets.
- ▶ For the purpose of reviewing trip arrival patterns, 77.1% of staff arrived at the school between the hours of 7:00am and 8:00am and 41.3% of staff leave the school between the hours of 4:00pm and 5:00pm.

4.2.4 Students

The result of the travel questionnaires completed by a sample of students at Monte Campus are outlined in the tables below. **Table 10** to **15** present the surveyed travel mode shares, arrival and departure times of the existing students.



Table 10: Year 7 to 12 Travel Modes to Monte Campus

Travel Modes	Number of Students (Average)	Proportion (AM Peak)
By Car (as a passenger – dropped by parent/guardian)	236	20.1%
By Car (Student driving and parking at/near school)	0	0.0%
By Car (as passenger – carpool with another student driving)	2	0.1%
Public Transport - Bus	770	65.6%
Public Transport - Train	147	12.5%
Cycle	0	0.0%
Walk	20	1.7%
Other	N/A	N/A

Table 11: Year 7 to 12 Travel Modes from Monte Campus

Travel Modes	Number of Students (Average)	Proportion (PM Peak)
By Car (as a passenger – dropped by parent/guardian)	59	5.0%
By Car (Student driving and parking at/near school)	0	0.0%
By Car (as passenger – carpool with another student driving)	0	0.0%
Public Transport - Bus	912	77.7%
Public Transport - Train	180	15.3%
Cycle	0	0.0%
Walk	18	1.6%
Other	5	0.4%



Table 12: Private Vehicle Occupancy of Students at Monte Campus

Private Vehicle Occupancy	AM			PM		
	Number of Student (Arrivals)	%	No. of Vehicles	Number of Students (Departures)	%	No of Vehicles
1	125	52.9%	175	39	66.7%	48
2	93	39.5%		14	23.1%	
3	12	5.1%		3	5.1%	
4	0	0.0%		2	2.6%	
Other	6	2.6%		2	2.6%	
Total	236 student passengers	44.6% car sharing		60 student passengers	30.8% car sharing	

Table 13: Arrival Time of Students at Monte Campus

Arrival Time	Number of Students (Average)	Proportion
Prior to 7:40am	88	7.5%
7:40am – 7:55am	430	36.6%
7:56am – 8:10am	487	41.5%
8:11am – 8:25am	163	13.9%
After 8:25am	6	0.5%

Table 14: Departure Time of Students at Monte Campus

Departure Time	Number of Students (Average)	Proportion
Prior to 3:20pm	35	3.0%
3:20pm – 3:34pm	840	71.5%
3:35pm – 3:49pm	241	20.5%
3:50pm – 4:05pm	17	1.4%
After 4:05pm	42	3.6%



Table 15: Student Drop Off and Pick Up Locations

Location	Drop Off		Picked Up	
	Number of Students	Proportion	Number of Students	Proportion
McLaren Street	138	58.6%	27	46.2%
Angelo Street	63	26.8%	18	30.8%
Church Street	11	4.5%	2	2.6%
Berry Street	9	3.8%	2	2.6%
Miller Street	8	3.2%	3	5.1%
Other	8	3.2%	8	12.8%

The key findings of the student travel mode surveys for students are as follows:

- ▶ 20.1% of students get dropped off to school in the morning with 44.6% of these students arriving in the same vehicle in groups of 2 or more, and 5.0% of students get picked up in the afternoon with 30.8% of these students departing in the same vehicle in groups of 2 or more.
- ▶ The majority of student who are dropped off or picked up use McLaren Street.
- ▶ 78.1% and 93% students utilise public transport in the morning and afternoon respectively.
- ▶ 1.7% of students walk to school in the morning, and 1.6% of students walk home in the afternoon.
- ▶ No students cycle to or from school.

4.3 Key Intersections

Two (2) key intersections have been identified in the vicinity of the site. These intersections are located at the junction of main thoroughfares that are currently utilised by students, guardians, and staff travelling to and from the school.

4.3.1 Miller Street and Berry Street

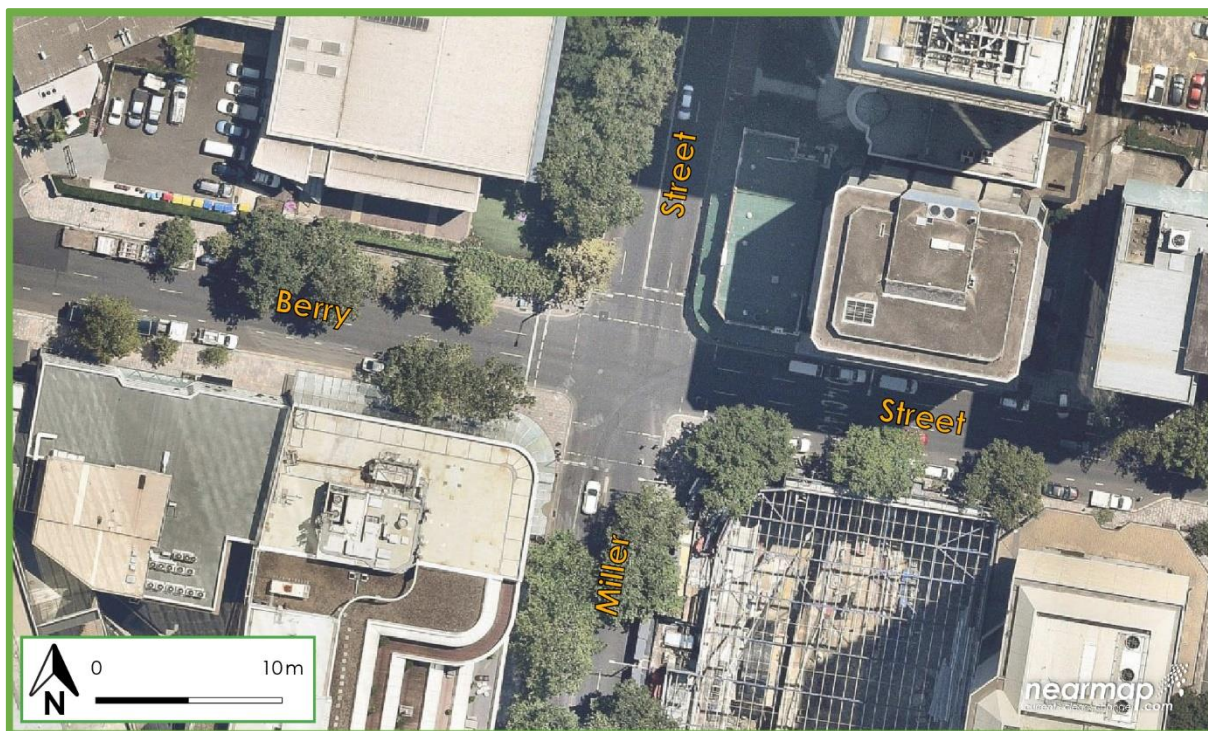


Figure 11: Intersection of Miller Street and Berry Street

It can be seen from **Figure 11** that the intersection of Miller Street and Berry Street is a four-legged signalised intersection. The main attributes of each approach are outlined below:

- ▶ Miller Street (north and south legs)
 - The southbound approach provides two (2) through lanes which permit left turns onto Berry Street from the left lane.
 - The northbound approach provides two (2) through lanes which permit right turns onto Berry Street from the right lane.
 - Signalised pedestrian crossings are provided on both legs.
- ▶ Berry Street (east and west legs)
 - The eastbound approach provides three (3) through lanes which permit left and right turns onto Miller Street from the left and right lanes, respectively.
 - Berry Street is one way in an eastbound direction and therefore the eastern leg provides no approach lanes.

- Signalised pedestrian crossings are provided on both legs.

4.3.2 Miller Street and McLaren Street



Figure 12: Intersection of Miller Street and McLaren Street

It can be seen from **Figure 12** that the intersection of Miller Street and McLaren Street is a four-legged signalised intersection. The main attributes of each approach are outlined below:

- ▶ Miller Street (north and south legs)
 - The southbound approach provides two (2) through lanes which permit left and right turns onto McLaren Street from the left and right lanes, respectively.
 - The northbound approach provides two (2) through lanes which permit left and right turns onto McLaren Street from the left and right lanes, respectively.
 - Signalised pedestrian crossings are provided on both legs.
- ▶ McLaren Street (east and west legs)
 - The eastbound approach provides two (2) through lanes which permit left and right turns onto Miller Street from the left and right lanes, respectively.



- The westbound approach provides two (2) through lanes which permit left turns onto Miller Street from the left lane only.
- Signalised pedestrian crossings are provided on both legs.



5. DESCRIPTION OF PROPOSED DEVELOPMENT

A detailed description of the proposed development is provided in the Statement of Environmental Effects prepared separately. In summary, the development comprises the following components:

- ▶ Demolition of two (2) existing sports courts and associated undercroft staff carpark. The demolition works will include demolition of all structures between the main 'circular-drive' driveway entry from Miller Street, and the McQuoin Hall/Aquatic Centre at the corner of Miller Street and Berry Street.
- ▶ Construction of a new four-storey sports and science building with a basement staff carpark, partially underground dual sports court facility, three (3) levels of new teaching spaces (innovation / science labs) and a rooftop sports court; and
- ▶ Landscaping works surrounding the new sports and science building.

The project will simply provide students and staff an upgraded facility to conduct day to day teachings/operations with **no increase in student or staff numbers**.

The parking and traffic impacts arising from the development are discussed in **Section 6** and **Section 7**. Reference should be made to the plans submitted separately to the NSW Department of Planning which are presented at reduced scale in **Appendix B**.



6. PARKING REQUIREMENTS

6.1 School Population Overview

The school currently has a 1,174 students currently enrolled and 171 full time equivalent (FTE) staff members.

6.2 School Car Parking Overview

As mentioned in **Section 3.3.1**, the school currently provides 63 off-street parking spaces under the existing tennis courts for staff use, including an emergency vehicle space and two (2) accessible spaces, and numerous unmarked spaces distributed throughout the remainder of the site. Only the 63 spaces under the tennis courts are subject to this assessment.

6.3 Car Parking Requirements

6.3.1 Staff Parking

The development proposes no increase in either student or staff numbers, hence there is no increase in expected parking demand and no requirement for additional parking. It is noted that the proposal will provide 55 car parking spaces within the new basement car park and eight (8) dedicated staff spaces will be located in the underutilised 'Sisters of Mercy' car park (by agreement) which is accessed from McLaren Street. To provide additional context, the North Sydney Council Development Control Plan, Section 10, requires educational developments to provide car parking at a rate of 1 space per 6 staff. Application of this rate to the existing staff numbers results in a total requirement of 29 car parking space. It is clear that the school exceeds Council's car parking requirements, thus ensuring all staff parking demands are accommodated within the site.

In summary, there will be no loss of car parking spaces due to the sports and science building project and all existing parking demands will be accommodated on-site. Reference should be made to the car park layout plan presented in Appendix B.



6.3.2 Parent/Student Parking

The proposed development will not change any existing parent/ student parking arrangements within the Monte Campus or on surrounding streets. Currently no parking or drop off and pick up facilities are provided for parents and/or students.

6.3.3 Weekend Sport Event Parking

No changes are proposed to existing sporting events undertaken at the school during the weekend, thus the proposed 63 off-street parking spaces will continue to operate satisfactorily. It should also be noted that the majority of school sporting events occur off campus at local sporting facilities and other schools.

6.4 Accessible Parking

Council's DCP states that developments must provide 1-2% of non-residential car parking for people with a disability. The Building Code of Australia (BCA) requires a minimum of 1 space for every 100 car parking spaces or part thereof. In response, a single accessible car parking space is provided within the basement, complying with both the DCP and BCD requirements.

6.5 Servicing Arrangements

This application does not propose an increase to the servicing demands of the existing school, as such the existing arrangements are to be maintained which have been operating sufficiently for the existing school and shall continue to be sufficient for the proposed development. In addition, no changes are proposed to existing service vehicles or hours of servicing.

6.6 Bicycle Parking

The development proposes no increase in either student or staff numbers, hence there is no increase in expected bicycle parking demand and no requirement for additional bicycle parking. Nevertheless, the proposed development provides eight (8) additional staff bicycle parking spaces in the basement car park. The bicycle spaces will be accessed via the lifts only, and no cyclists are permitted to utilise the vehicular ramp. Council's DCP requires 1 locker per bicycle space and 1 shower/change room per 10 bicycle spaces. In response, staff end of trip



facilities will comprise a single shower/change room in the proposed sports and science building and 15 existing lockers in the McQuoin building. These arrangements are considered acceptable noting the nature of the proposed development. Reference should be made to the end of trip facilities plan presented in Appendix B.

6.7 Emergency Vehicle Access

Emergency vehicle access is provided via the main gate on Miller Street. It is noted that this access point is not impacted by the proposed works, thus this application does not propose amendments to the emergency vehicle access arrangements of the existing school which are considered to be sufficient for the existing and proposed development. On occasions, ambulances are directed to the frontage of 21 McLaren Street for student/staff privacy.



7. TRAFFIC AND TRANSPORT IMPACTS

7.1 Modelled Scenario

As mentioned above, the project will simply provide students and staff an upgraded facility and no increase in student numbers is proposed. Therefore, the proposed development will not generate any additional vehicle trips. The existing student population is outlined below for reference:

- ▶ 1,174 students between Year 7 and Year 12; and
- ▶ 171 FTE staff members.

Traffic modelling has been conducted (as detailed in **Section 7.2**) to determine the traffic impacts of the existing operational population of 1,174 students and 171 FTE staff on nearby intersections. This assessment is to provide a baseline operational assessment to allow comparisons with any future assessment to determine if the traffic impacts of school have changed.

The existing vehicle trip generation of the Monte Campus was captured within traffic surveys conducted on Tuesday 18 February 2020. These surveys reflect the current traffic conditions of the intersection of Miller Street/Berry and Miller Street/McLaren Street during the morning and afternoon peaks. Detailed SIDRA Intersection analysis was conducted at the above intersection and is discussed in further detail in **Section 7.2**.

7.2 Peak Period Intersection Performance

7.2.1 Existing Performance

Traffic surveys were undertaken of the intersections mentioned above, which are considered to be most critical in relation to the site. These counts were undertaken on 18 February 2020 during the network peak periods, being between 7:00am and 9:00am (AM Peak Period) and 3:00pm and 6:00pm (PM peak period).



The traffic volumes in these surveys formed the existing 2020 case volumes for software modelling undertaken to assess intersection performance characteristics under existing traffic conditions. The SIDRA Intersection 8 model produces a range of outputs, the most useful of which are the Degree of Saturation (DoS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LoS) criteria. These performance measures can be interpreted using the following explanations:

DoS - the DoS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DoS approaches 1, it is usual to attempt to keep DoS to less than 0.9. When DoS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way/stop control, satisfactory intersection operation is generally indicated by a DoS of 0.8 or less.

AVD - the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LoS - this is a comparative measure which provides an indication of the operating performance of an intersection as shown in **Table 16** below.

Table 16: Intersection Performance Indicators (RMS)

Level of Service (LoS)	Average Delay per Vehicle (sec/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	Good Operation	Good Operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	42 to 56	Operating near capacity	Near capacity and accident study required



E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode or major treatment

A summary of the modelled results is provided below in **Table 17**. Reference should also be made to the detailed SIDRA outputs provided in **Appendix C** for individual lanes.

Table 17: Existing 2020 Intersection Performances

Intersection	Control	Period	Degree of Saturation	Average Delay (s)	Level of Service
Miller Street and Berry Street	Signalised	AM	0.882	43.2	D
		PM	0.612	32.2	C
Miller Street and McLaren Street		AM	0.517	25.0	B
		PM	0.486	26.0	B

As evident from the Table 17 above, the intersection of Miller Street/Berry Street currently operates with a LoS 'D' in the AM peak hour period and a LoS 'C' in the PM peak hour period. The intersection of Miller Street/McLaren Street currently operates with a LoS 'B' in both the AM and PM peak hour periods. It is emphasised that the proposal does not seek to increase the student or staff population from current levels, thus these intersections will continue to operate at these LoS until background growth or a significant traffic generating development is constructed in the locality. It is also noted that these intersections are 'SCATS' linked, thus are capable of 'live' signal adjustments to further optimise traffic flows along Berry Street and Miller Street. Hence, this SIDRA assessment and subsequent outputs may be a worse case snapshot of actual conditions occurring at the sites. As such, no external road upgrades are required to support the existing student and staff population.

7.2.2 Sensitivity Testing - 2030 Base Case Performance

The "2030 Base Case" scenario requested by Transport for NSW (TfNSW - former RMS) reflects traffic conditions in 2030. While this 10 year growth projection in background conditions may be of assistance to TfNSW in performing its strategic planning functions, it is critical to note that



the subject development does not generate any additional traffic impacts (with no increase in staff or student numbers), such that there is no nexus between the development application and any road capacity improvements that may be required to support growth in general (external) traffic conditions. This nexus is a critical factor under the EP&A Act when assessing development impacts. Indeed, most of this growth will be from regional traffic growth along arterial corridors. This also needs to be seen in the context of the RMS Guide to Traffic Generating Development, which requires that any traffic impact assessment need only deal with the impacts of the development itself when determining traffic impacts (Sections 4 and 8 refer). Hence, while the TfNSW's interest in long term corridor conditions is appreciated, this is not current RMS policy and is not considered the responsibility of any individual developer to quantify and assess, particularly where there are no impacts whatsoever generated by the development and therefore no nexus. It is therefore considered unreasonable in the circumstances.

Nevertheless, in the interests of facilitating the progression of this application, indicative traffic flows near the site in 10 years' time has been reviewed based on growth factors. This is a scenario that TfNSW will need to deal with in any event, to determine road network performance and required associated infrastructure, even absent the subject development. This reflects conditions arising from 10 years of 'background' traffic growth at a rate of 2% per annum, which is a cumulative increase of 22% on all movements at all intersections. It is expected that TfNSW (as the asset owner) will undertake its own assessment of these and other intersections in the immediate area.

A summary of the modelled results is provided below in **Table 18**. Reference should also be made to the detailed SIDRA outputs provided in **Appendix C** for individual lanes.

Table 18: 2030 Intersection Performances

Intersection	Control	Period	Degree of Saturation	Average Delay (s)	Level of Service
Miller Street and Berry Street	Signalised	AM	1.076	98.0	F
		PM	0.857	41.0	C
Miller Street and McLaren Street		AM	0.695	29.0	C
		PM	0.725	30.3	C



As evident from the Table 18 above, the intersection of Miller Street/Berry Street will experience a significant increase in average delay during the AM peak hour period, which results in a 'LoS F'. The PM peak hour period will experience a minor increase of average delay of only 8.8 seconds. The intersection of Miller Street/McLaren Street will operate at a LoS 'C' in both the AM and PM peak hour periods, with minor increases in average delay. These changes are the result of the predicted growth in traffic on the surrounding and not the proposed development. In summary, the intersection of Miller Street/Berry Street is the only intersection likely to experience any unacceptable increase in average delays during the AM peak period in 2030.

7.3 Public Transport Impacts

As mentioned above, the proposed development does not seek to increase the student or staff population, thus there will be no changes to existing levels of public transport demand. As discussed in Section 3.4.3, the Victoria Cross Metro Station is set to open in 2024, and upon completion it will provide students and staff yet another sustainable travel mode to destinations such as Macquarie Park, Epping, Castle Hill and Sydney CBD.

7.4 Pedestrian and Bicycle Impacts

The proposed development does not seek to increase the student or staff population, thus the pedestrian trips already occurring in the locality will continue to operate at the current levels. It is noted that no students or staff were found to cycle to and from the site. Noting the poor bicycle infrastructure in the locality, it is expected that the uptake of bicycle trips by students will be minimal. The uptake of staff bicycle trips is addressed in the Green Travel Plan prepared separately by TRAFFIX (Ref: 19.455r03v04; dated: 6 April 2020).



8. ACCESS AND INTERNAL DESIGN ASPECTS

8.1 Site Vehicular Access

The development currently provides two (2) vehicular access driveways to Miller Street. With regards to the proposed development, the southern access driveway will only be impacted. The development proposes a total of 55 User Class 2 parking spaces with access to Miller Street, a classified road. It will therefore require a Category 2 driveway under AS2890.1 (2004), being a combined entry and exit width of 6.0 to 9.0 metres. In response, a 6.1 metre driveway has been provided to Miller Street, complying with AS2890.1 (2004). It should be noted that the existing southern driveway crossing point to Miller Street is simply relocated 18 metres south to provide an efficient basement car park design and provide best use of the available site area. The proposed driveway is located approximately 48 metres from the Miller Street/Berry Street intersection. Due to the proximity to Miller Street/Berry Street, the existing and proposed accesses will be impacted by existing queue lengths. Nevertheless, drivers exiting the site will simply make the decision to exit the site towards the north to avoid any southbound queuing that may occur. Any queuing for vehicles turning right into the site already occur on the network and will continue to occur under the proposed location, noting the minor change of driveway location.

8.2 Internal Design

The internal car park complies with the requirements of AS 2890.1 (2004) and AS 2890.6 (2009), and the following characteristics are noteworthy:

8.2.1 Parking Modules

- ▶ All standard car parking spaces have been designed in accordance with User Class 2 being for long term city parking. These spaces are provided with a minimum space length of 5.4m, a minimum width of 2.5m and a minimum aisle width of 5.8m.
- ▶ All accessible parking spaces have been designed in accordance with AS 2890.6 (2009), being 2.4m wide, 5.4m long and located adjacent to a dedicated shared area of the same dimensions.



- ▶ All spaces located adjacent to obstructions of greater than 150mm in height are provided with an additional width of 300mm.

8.2.2 Ramps

- ▶ The internal ramp has a maximum gradient of 5% (1 in 20) for the first 6.0m inside the property boundary, in accordance with Section 3.3 (a) of AS 2890.1 (2004) for a downgrade ramp to the road.
- ▶ The internal ramp has a maximum gradient of 20% (1 in 5) with sag and summit transitions of 12.5% (1:8) respectively. These provisions satisfy the requirements of AS 2890.1 (2004).

8.2.3 Clear Head Heights

- ▶ A minimum clear head height of 2.2m is provided for all areas within the basement car park as required by AS 2890.1 (2004).
- ▶ A minimum clear head height of 2.5m is to be provided above all accessible spaces in accordance with AS 2890.6 (2009).

8.2.4 Other Considerations

- ▶ All columns are located outside of the parking space design envelope shown in Figure 5.2 of AS 2890.1 (2004).
- ▶ A visual splay has been provided at the access driveway in accordance with Figure 3.3 of AS 2890.1 (2004).
- ▶ Swept path analysis of all critical manoeuvres is provided in **Appendix D** demonstrating sufficient manoeuvring area is provided within the basement.

8.3 Summary

In summary, the internal configuration of the car park has been designed in accordance with AS 2890.1 (2004) and AS 2890.6 (2009). It is however envisaged that a condition of consent could be imposed requiring compliance with these standards and as such any minor amendments considered necessary (if any) can be dealt with prior to the release of any Construction Certificate.



9. CONCLUSIONS

The following matters are noteworthy:

- ▶ TRAFFIX has been commissioned to undertake a traffic impact assessment (TIA) in support of a State Significant Development Application (SSD-10393) relating to the construction of a new sports and science building at the Monte Angelo Mercy College, North Sydney.
- ▶ The subject site has excellent connections to the public transport network with reliable access to regular bus and train services. The site is also located within 150 metres of the future Victoria Cross Metro Station which will provide convenient access to Macquarie Park, Epping, Castle Hill and Sydney CBD.
- ▶ In order to determine existing travel characteristics of the school development, online travel mode questionnaire surveys were prepared by TRAFFIX and distributed by the school to all staff and students (Year 7 to 12). This survey data is presented in Section 4.2.
- ▶ The proposal seeks approval to construct four-storey sports and science building with a basement staff carpark, partially underground dual sports court facility, three (3) levels of new teaching spaces (innovation / science labs) and a rooftop sports court. It is emphasised that the proposal does not seek to increase current student or staff numbers.
- ▶ The school currently provides 63 car parking spaces for staff members. The existing car parking demands will be accommodated within 55 car parking spaces within a basement car park and eight (8) at-grade parking spaces in the underutilised 'Sisters of Mercy' car park. This will ensure all staff parking demands are accommodated within the site.
- ▶ SIDRA intersection modelling was conducted at two (2) nearby and critical intersections to provide an overview of the existing traffic conditions in the locality. The analysis demonstrated that during the AM and PM peak hour periods, the Miller Street/Berry Street intersection operates at a LoS of 'D' and 'C' respectively. The intersection of Miller Street/McLaren Street operates at a LoS 'B' during both peak hour periods.
- ▶ The proposal does not increase the traffic generation of the site, so that no external roadway improvements are necessary.
- ▶ The 2030 Base Case scenario requested by TfNSW is considered an unreasonable requirement in circumstances where there are no traffic impacts and hence no nexus.



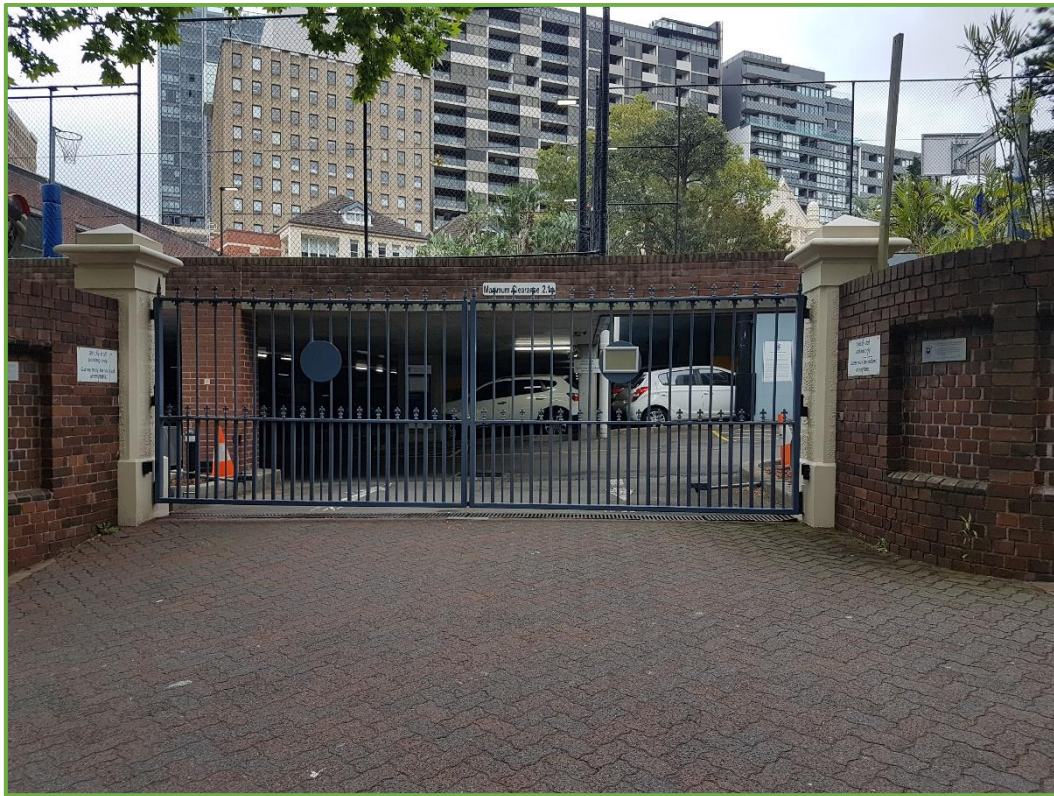
Nevertheless, 10 year growth in all volumes at both intersections has been assessed. The analysis demonstrates moderate increases in average delay at the Miller Street/McLaren Street intersection during both peaks period. The intersection of Miller Street/Berry Street is the only intersection to experience significant increases in average delays during the AM peak period in 2030. This is considered an issue for TfNSW to address with any future planning and/or upgrades at this intersection and these impacts will occur even absent the proposed development.

- ▶ The basement car park will be designed to comply with the requirements of AS 2890.1 (2004) and AS 2890.6 (2009) in order to ensure safe and efficient operation.
- ▶ The Green Travel Plan provided separately has the potential to improve traffic conditions generally in the locality, given that it will be imposed on the entire school community.

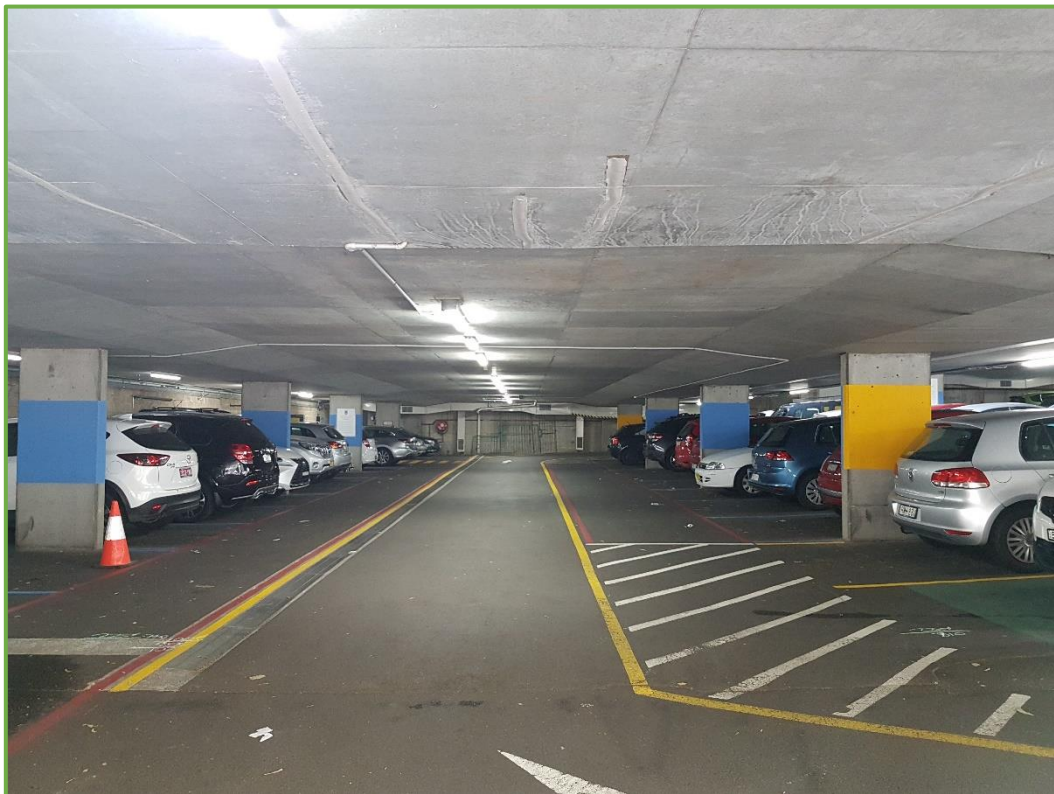
This traffic impact assessment therefore demonstrates that the subject application is supportable on traffic planning grounds. TRAFFIX anticipates an ongoing involvement during the development approval process.

APPENDIX A

Photographic Record



Existing vehicular access driveway to Miller Street



View inside existing staff car park



View inside existing staff car park



View looking north along Miller Street



View looking south along Miller Street



Miller Street/McLaren Street Intersection – View looking east



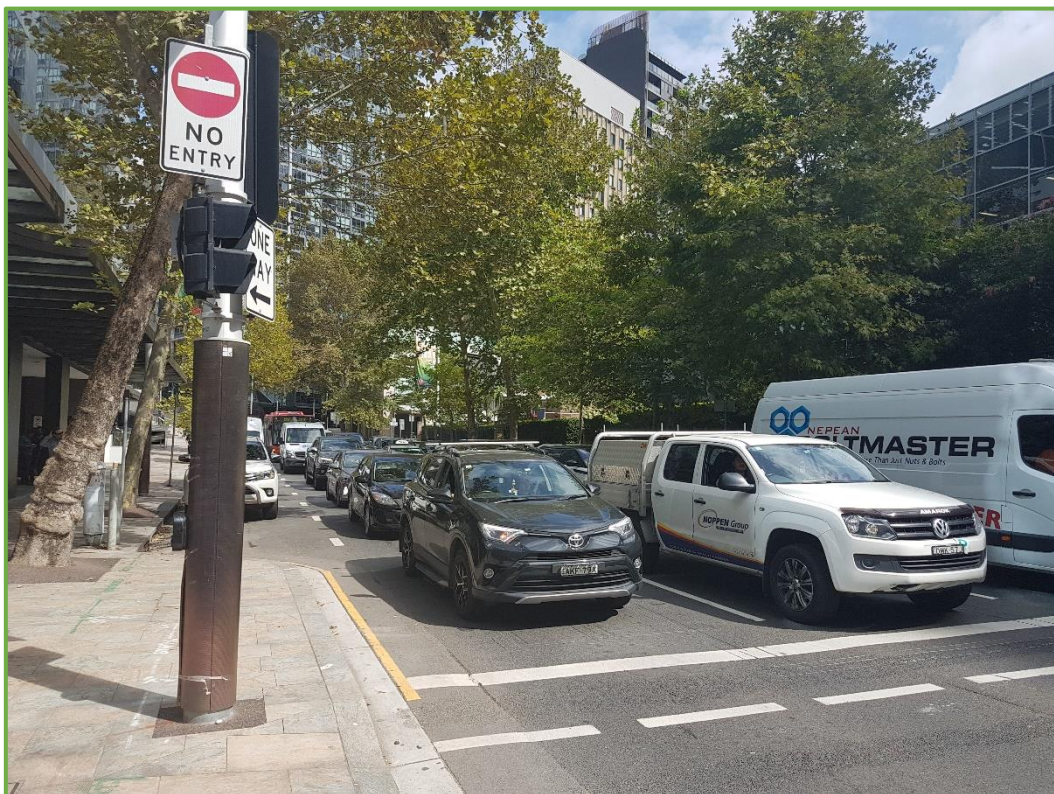
Miller Street/McLaren Street Intersection – View looking west



Miller Street/McLaren Street Intersection – View looking north



Miller Street/Berry Street Intersection – View looking east



Miller Street/Berry Street Intersection – View looking west



Miller Street/Berry Street Intersection – View looking north



Miller Street/Berry Street Intersection – View looking south

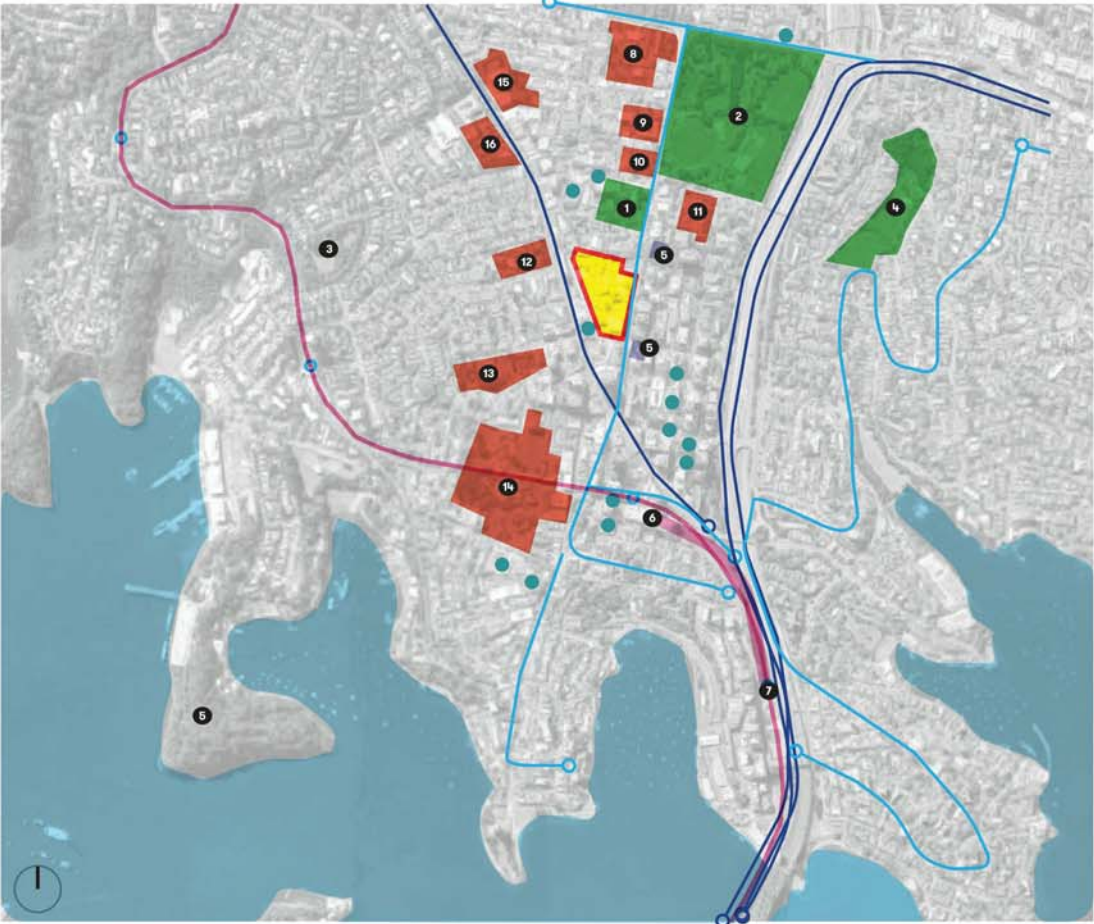
APPENDIX B

Reduced Plans

MONTE SANT ANGELO COLLEGE SCIENTIA PROJECT

NO	SHEET NAME
A00.00	COVER SHEET
A00.01	SITE ANALYSIS
A01.01	EXISTING & DEMOLITION PLAN
A01.02	PROPOSED SITE PLAN
A02.00	PROPOSED LEVEL -3 PLAN
A02.01	PROPOSED LEVEL -2 PLAN
A02.02	PROPOSED LEVEL -1 PLAN
A02.03	PROPOSED LEVEL 0 PLAN
A02.04	PROPOSED LEVEL 1 PLAN
A02.05	PROPOSED LEVEL 2 PLAN
A02.06	PROPOSED LEVEL 3 PLAN
A03.01	STREET ELEVATIONS
A03.03	ELEVATIONS
A03.11	SECTIONS
A04.03	SHADOW DIAGRAMS - SUMMER
A04.04	SHADOW DIAGRAMS - WINTER
A06.04	PERSPECTIVES

PROJECT CONTEXT



- Monte Sant' Angelo Mercy College
- Education Facility
- Rain Line
- Future Metro Station
- Bus Routes
- Main Road
- Fitness & Well-being Facility
- Public Parks and Urban Courtyards
- Sydney Harbour

1

 Ted Mack Civic Park

2

 St. Leonard's Park

3

 Brennan Park

4

 Forsyth Park

5

 Victoria Cross Metro Station

6

 North Sydney Train Station

7

 Millers Point Train Station

8

 North Sydney Boys School

9

 Marist College

10

 St. Mary's School

11

 Wenona School

12

 North Sydney Public School

13

 Australian Catholic University North Sydney

14

 Shore School

15

 North Sydney Girls School

16

 Cammeraygal High School

EXTERNAL OVERALL 3D

NOTE: THIS IS AN ARTISTS IMPRESSION



3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College - Scientia Project

Project Address
128 Miller St, North Sydney

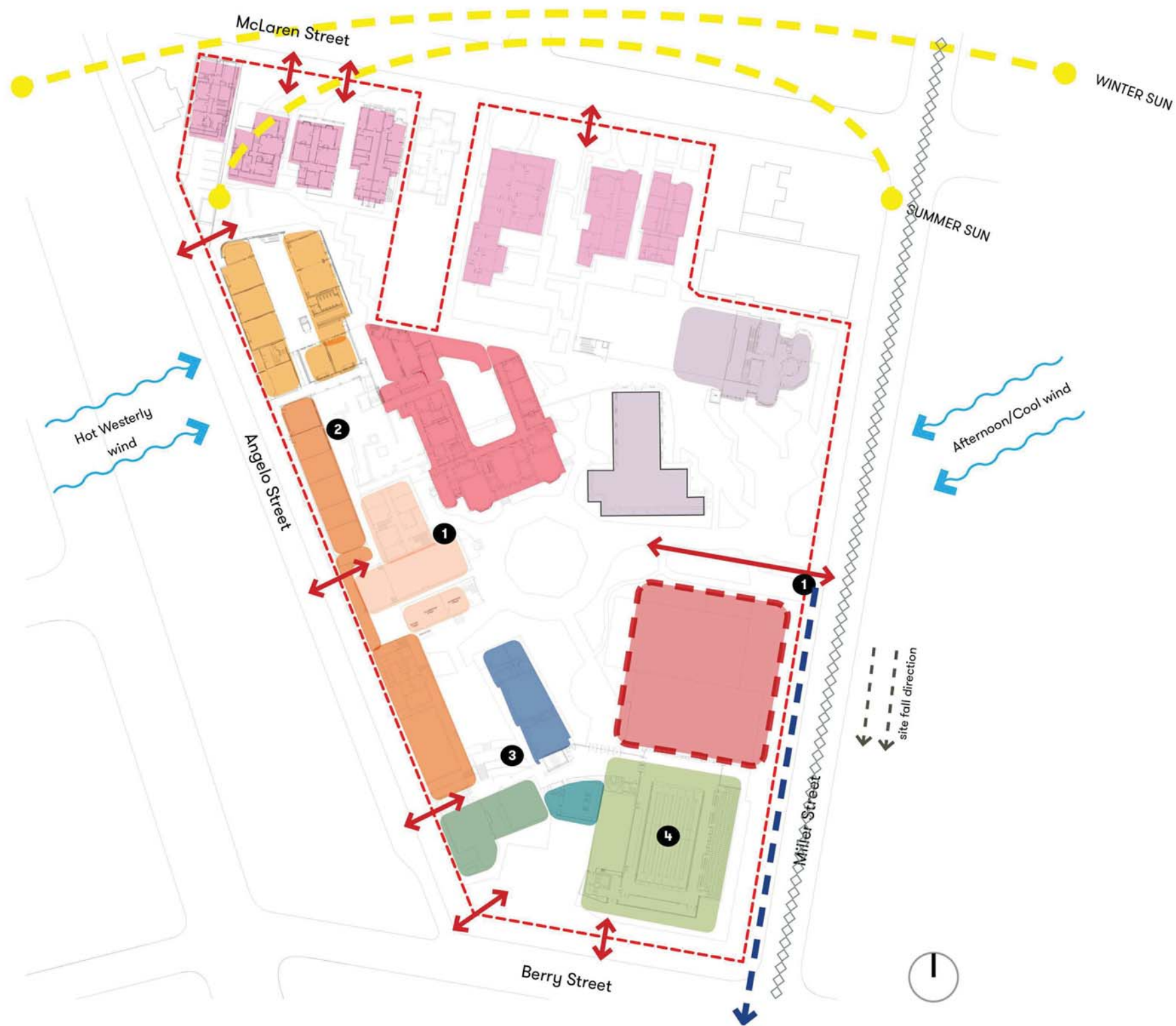
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COVER SHEET

Status
SSDA

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2336	A00.00	3

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



- 1 Entry, Staff and Admin Precinct
- 2 General Learning
- 3 Art and Science Precinct
- 4 Fitness precinct

- Performing Arts + Culture
- Library + Administration
- Visual Art and Technology
- Health and Technology
- Science and Technology
- Fitness and Well-being
- Underutilized / Development potential
- Family Day Care
- Years 7 Hub
- Humanities
- Staff Hub
- Staff/ Services/ Sisters of Mercy

- Route to Station
- Traffic Noise
- Site Extent
- Site Boundary
- Sun Path
- Fall Direction
- Wind Direction

3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne	Sydney	Brisbane
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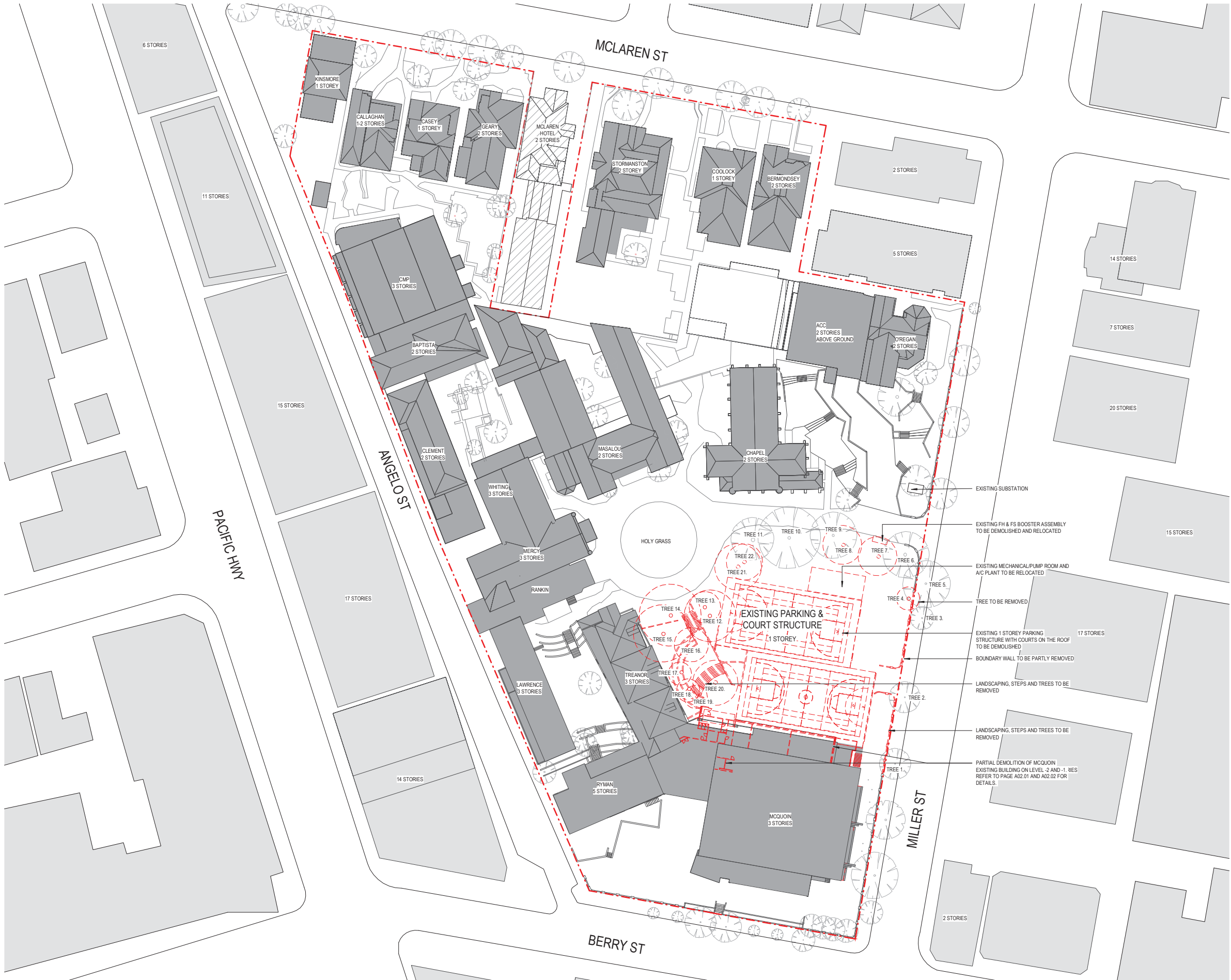
Drawing Title
SITE ANALYSIS

Status
SSDA

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Project No	Drawing No	Revision
2336	A00.01	3

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- EXISTING SURROUNDING BUILDINGS
- EXISTING MONTE SCHOOL BUILDINGS
- PROPOSED BUILDING WORKS
- DEMOLISHED
- PROPOSED GROUND FLOOR OUTLINE
- SITE BOUNDARY
- BOUNDARY TO SCOPE OF WORKS

TREES TO BE DEMOLISHED:

- TREE 4: CHEESE TREE
- TREE 7: JACARANDA
- TREE 8: CAMELIA
- TREE 12: TURPENTINE
- TREE 13: MAGENTA CHERRY
- TREE 14-16: CAMPHOR LAUREL
- TREE 17-18: BANGALOW PALM
- TREE 19: KENTIA PALM
- TREE 20-21: GIANT BIRD OF PARADISE BUSH
- TREE 22: KENTIA PALM

REFER TO ARBORICULTURAL IMPACT
ASSESSMENT REPORT FOR DETAILS

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
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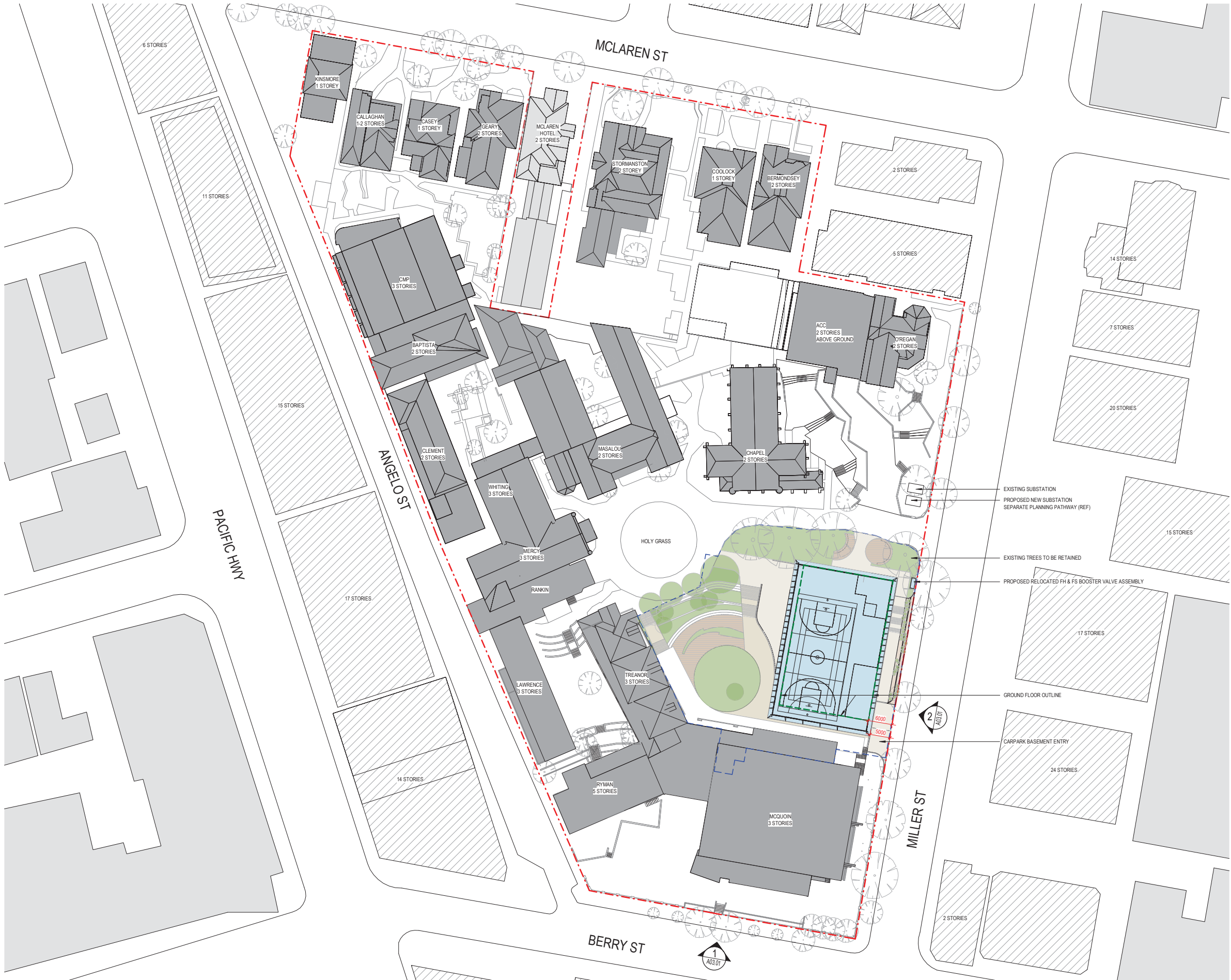
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EXISTING & DEMOLITION PLAN

Status
SSDA

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Project No	Drawing No	Revision
2336	A01.01	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- EXISTING SURROUNDING BUILDINGS
- EXISTING MONTE SCHOOL BUILDINGS
- PROPOSED BUILDING WORKS
- DEMOLISHED
- PROPOSED GROUND FLOOR OUTLINE
- SITE BOUNDARY
- BOUNDARY TO SCOPE OF WORKS

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

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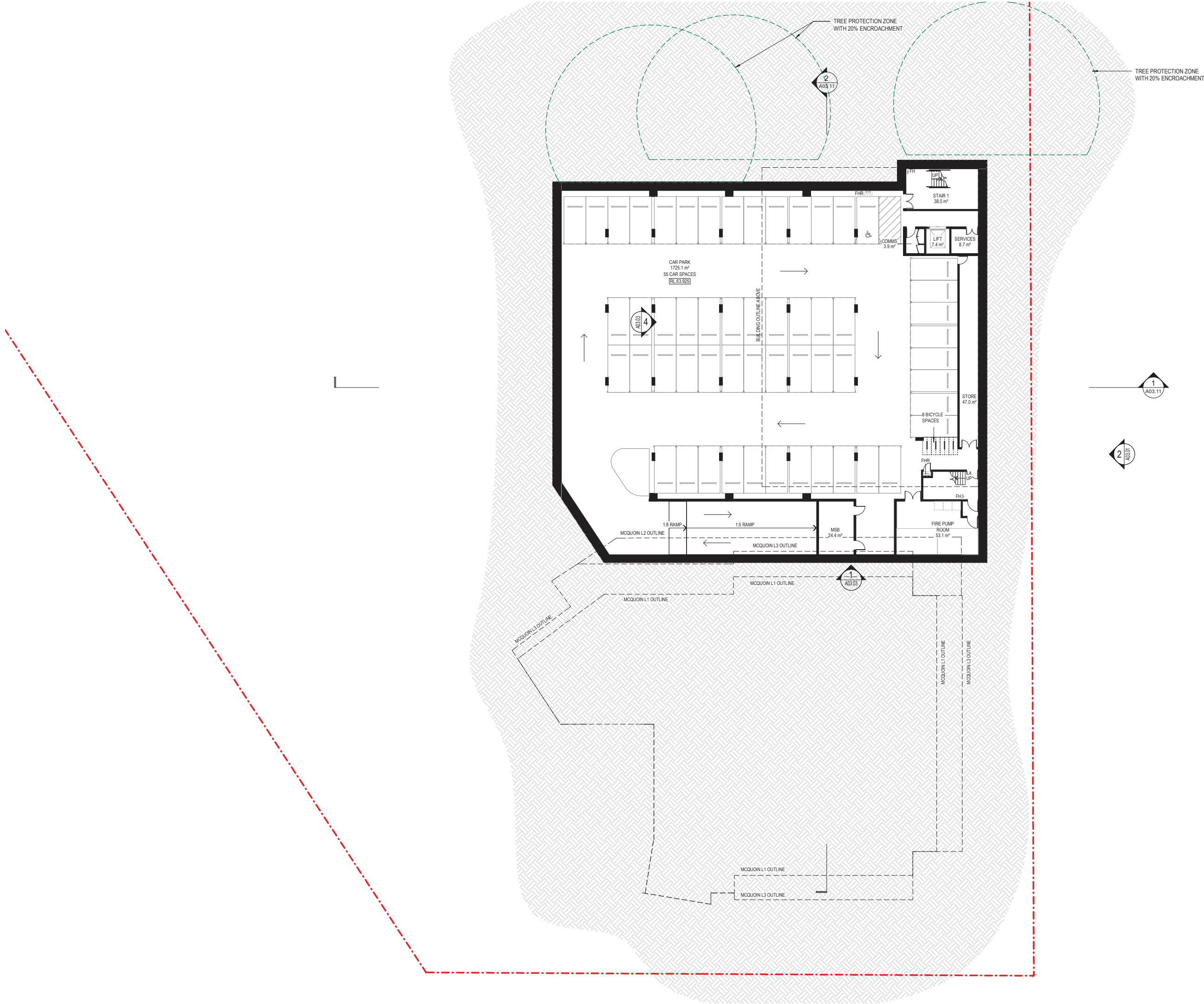
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PROPOSED SITE PLAN

Status
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Project No	Drawing No	Revision
2336	A01.02	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCROACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne 4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Sydney Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Brisbane Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821
---	---	---

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College -
Scientia Project

Project Address
128 Miller St, North Sydney

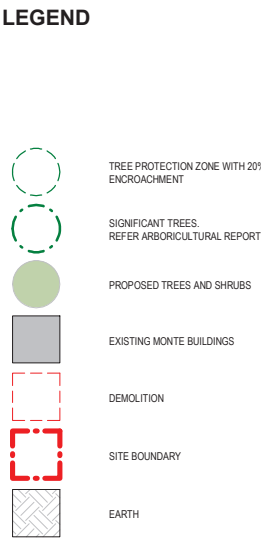
Drawing Title
PROPOSED LEVEL -3 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
WX	NB	21/02/2020 1:02:56 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.00	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135	Ground Floor	Level 12,
Sturt Street Southbank,	11-17 Buckingham Street	324 Queen Street,
VIC 3006	Surry Hills NSW 2010	Brisbane Qld 4000
T +61 3 9699 3644	T +61 2 9660 9329	T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects: Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title

Monte Sant Angelo Mercy College -
Scientia Project

Project Address
128 Miller St, North Sydney

Drawing Title

PROPOSED LEVEL -2 PLAN

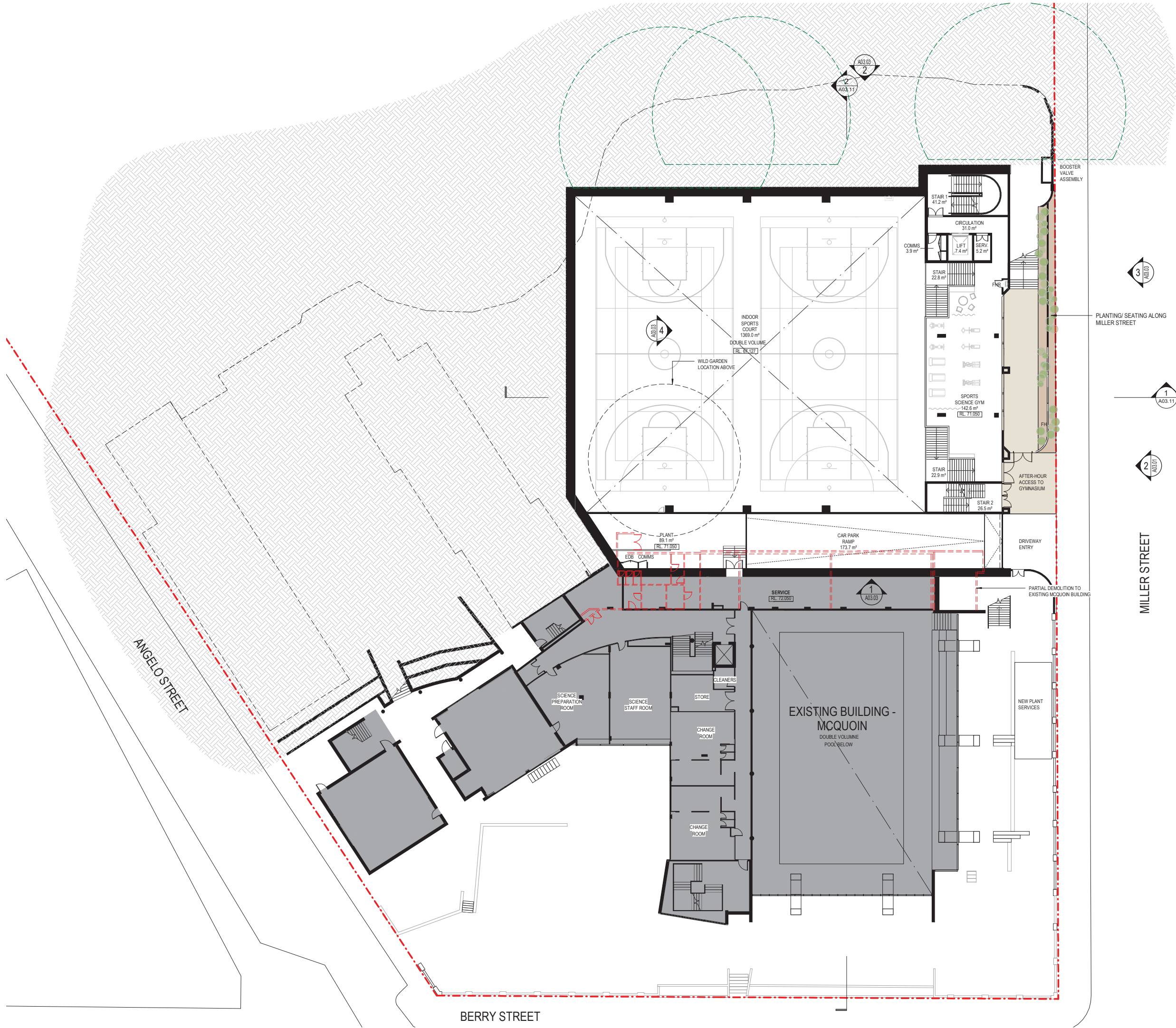
Status

SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:03:06 PM	1 : 200 @A1

Project No	Drawing No	Revision	
2336	A02.01	4	

Builders/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved.



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCRoACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

NOTES

REFER TO LANDSCAPE PLAN FOR EXTERNAL FINISHES

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College - Scientia Project

Project Address
128 Miller St, North Sydney

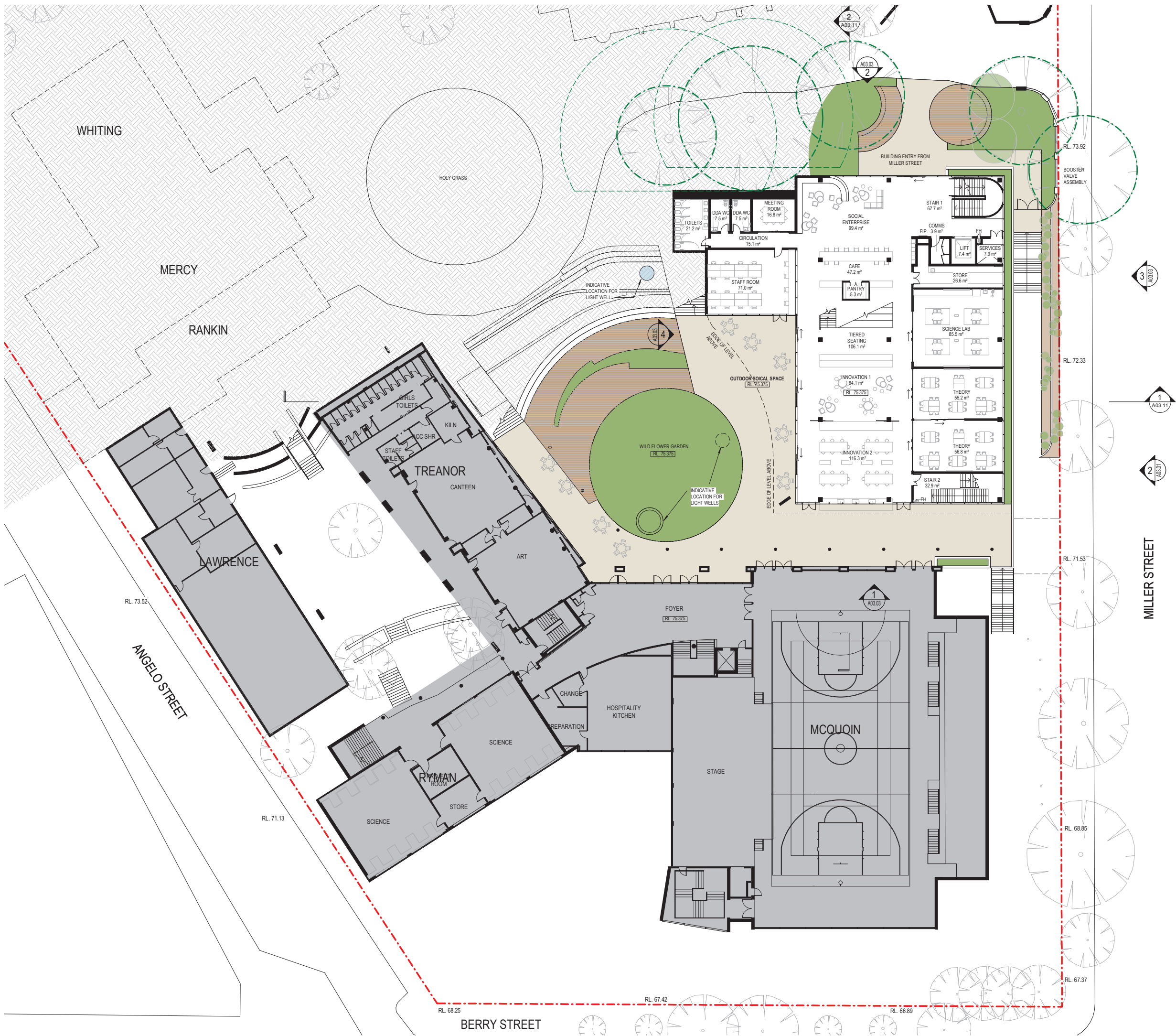
Drawing Title
PROPOSED LEVEL -1 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:03:17 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.02	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCRoACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

NOTES

REFER TO LANDSCAPE PLAN FOR EXTERNAL FINISHES

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College -
Scientia Project

Project Address
128 Miller St, North Sydney

Drawing Title
PROPOSED LEVEL 0 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:03:35 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.03	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCROACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

NOTES

REFER TO LANDSCAPE PLAN FOR EXTERNAL FINISHES

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne 4/135 Sturt Street Southbank, VIC 3006
Sydney Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010
Brisbane Level 12, 324 Queen Street, Brisbane Qld 4000
T +61 3 9699 3644 T +61 2 9660 9329 T +61 7 3211 9821

ABN: 8406394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College - Scientia Project

Project Address
128 Miller St, North Sydney

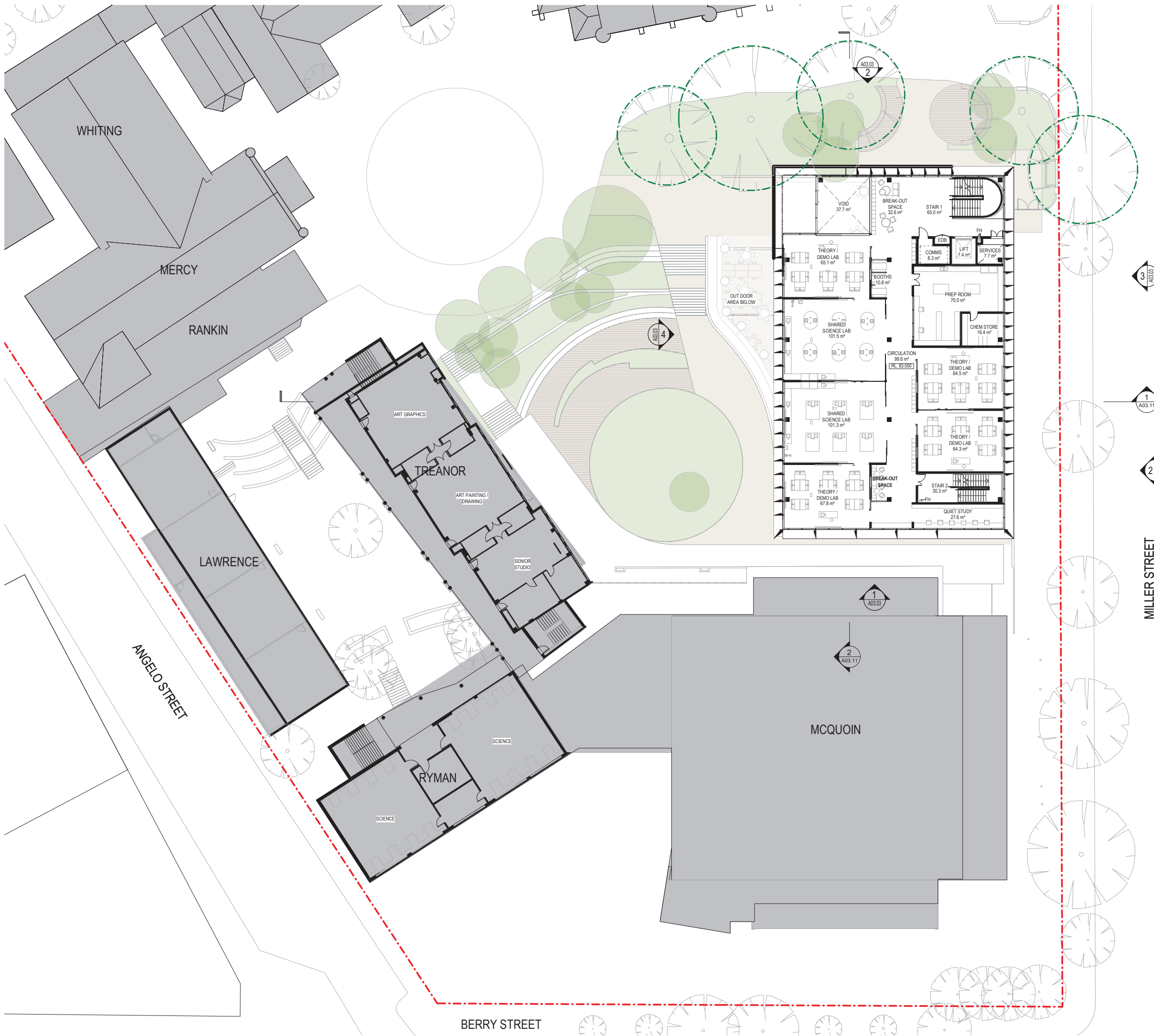
Drawing Title
PROPOSED LEVEL 1 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:03:55 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.04	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCROACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

NOTES

REFER TO LANDSCAPE PLAN FOR EXTERNAL FINISHES

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College -
Scientia Project

Project Address
128 Miller St, North Sydney

Drawing Title
PROPOSED LEVEL 2 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:04:14 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.05	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



LEGEND

- TREE PROTECTION ZONE WITH 20% ENCROACHMENT
- SIGNIFICANT TREES. REFER ARBORICULTURAL REPORT
- PROPOSED TREES AND SHRUBS
- EXISTING MONTE BUILDINGS
- DEMOLITION
- SITE BOUNDARY
- EARTH

4	SSDA	21/02/2020
3	SSDA	18/02/2020
2	SSDA	14/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College - Scientia Project

Project Address
128 Miller St, North Sydney

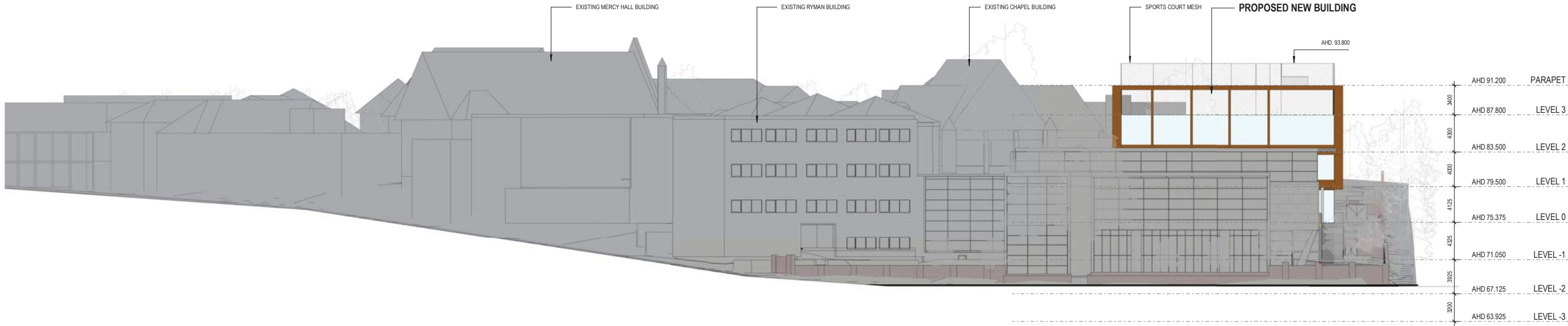
Drawing Title
PROPOSED LEVEL 3 PLAN

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	21/02/2020 1:04:23 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A02.06	4

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



ELEVATION - BERRY ST /
ANGELO ST

1
A01.02 1 : 250



ELEVATION - MILLER ST

2
A01.02 1 : 250

2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne 4/135 Sturt Street Southbank, VIC 3006
Sydney Ground Floor 11-17 Buckingham Street, Surry Hills NSW 2010
Brisbane Level 12, 324 Queen Street, Brisbane Qld 4000
T +61 3 9699 3644 T +61 2 9660 9329 T +61 7 3211 9821

ABN: 8406394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College

Project Address
128 Miller St, North Sydney

Drawing Title
STREET ELEVATIONS

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
Author	Checker	18/02/2020 5:16:02 PM	1 : 250 @A1

Project No	Drawing No	Revision
2336	A03.01	2

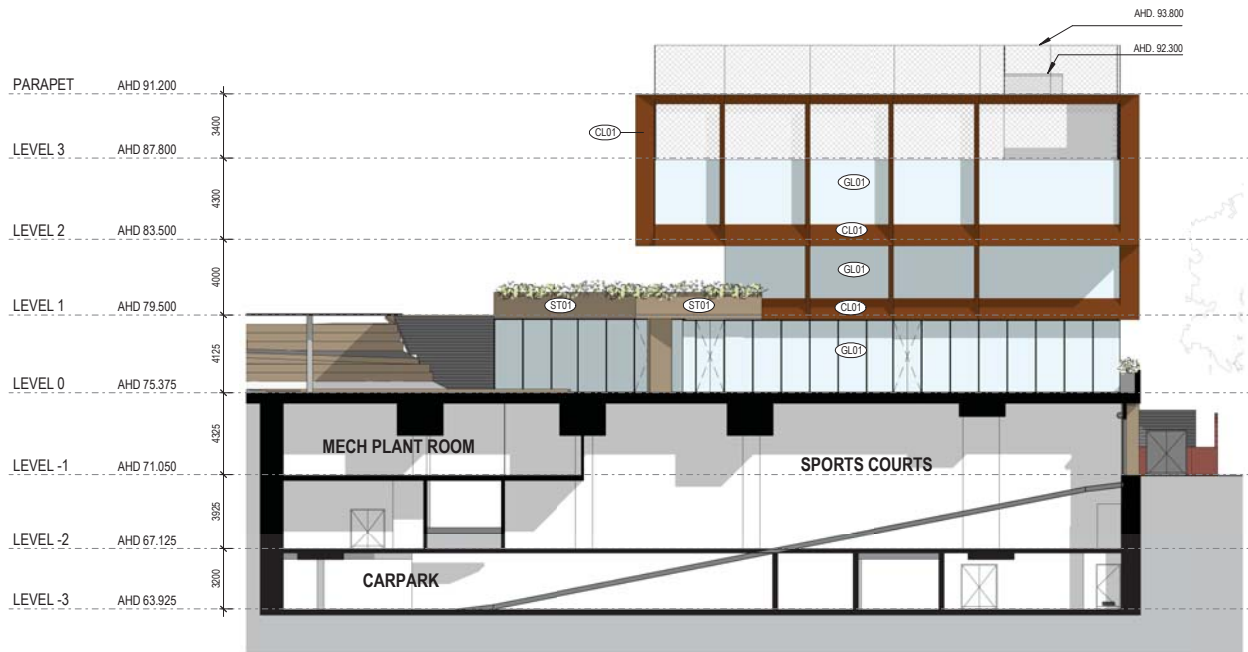
Builder's/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



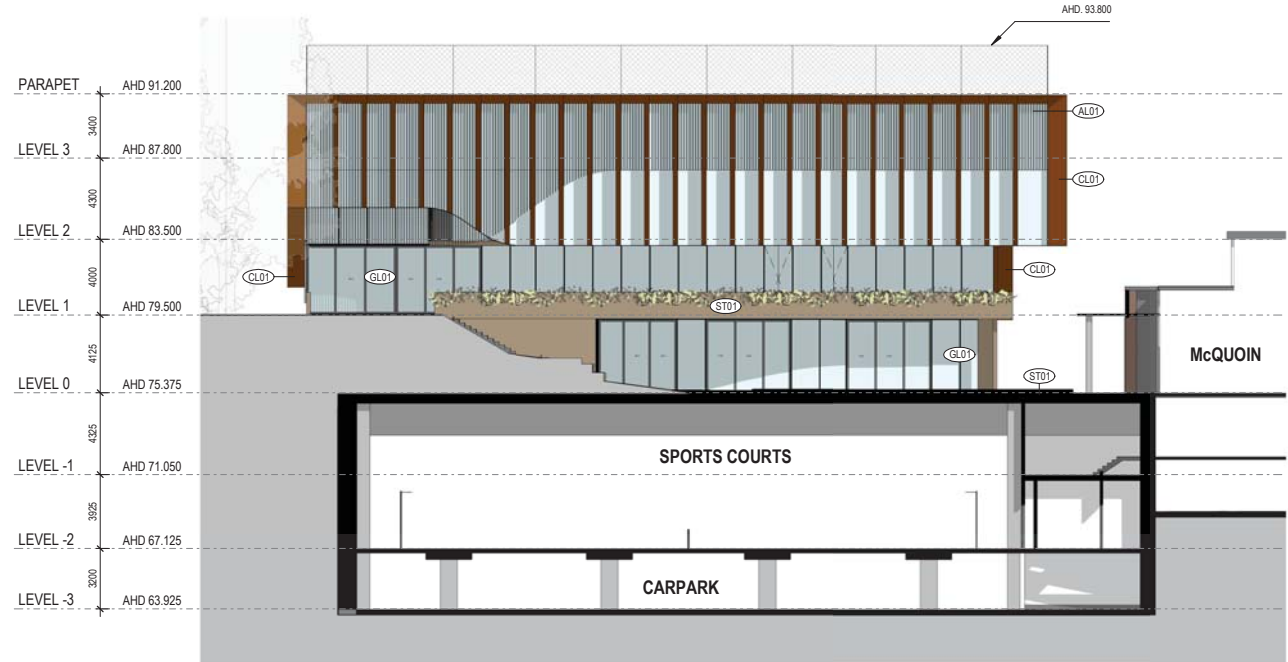
2 ELEVATION - NORTH
A02.01 1:200



3 ELEVATION - EAST
A02.01 1:200

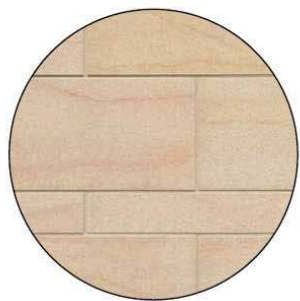


1 ELEVATION - SOUTH
A02.00 1:200

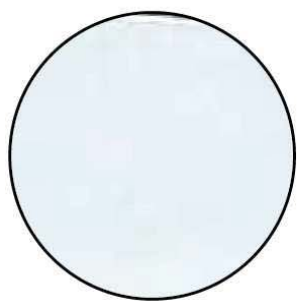


4 ELEVATION - WEST
A02.00 1:200

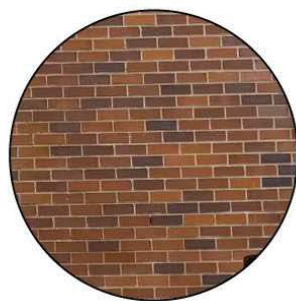
MATERIAL BOARD



ST01: SANDSTONE



GL01: GLAZING



BRK01: BRICK



CL01: GRC PANEL



AL01: ALUMINIUM SCREEN

2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street, Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane QLD 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College

Project Address
128 Miller St, North Sydney

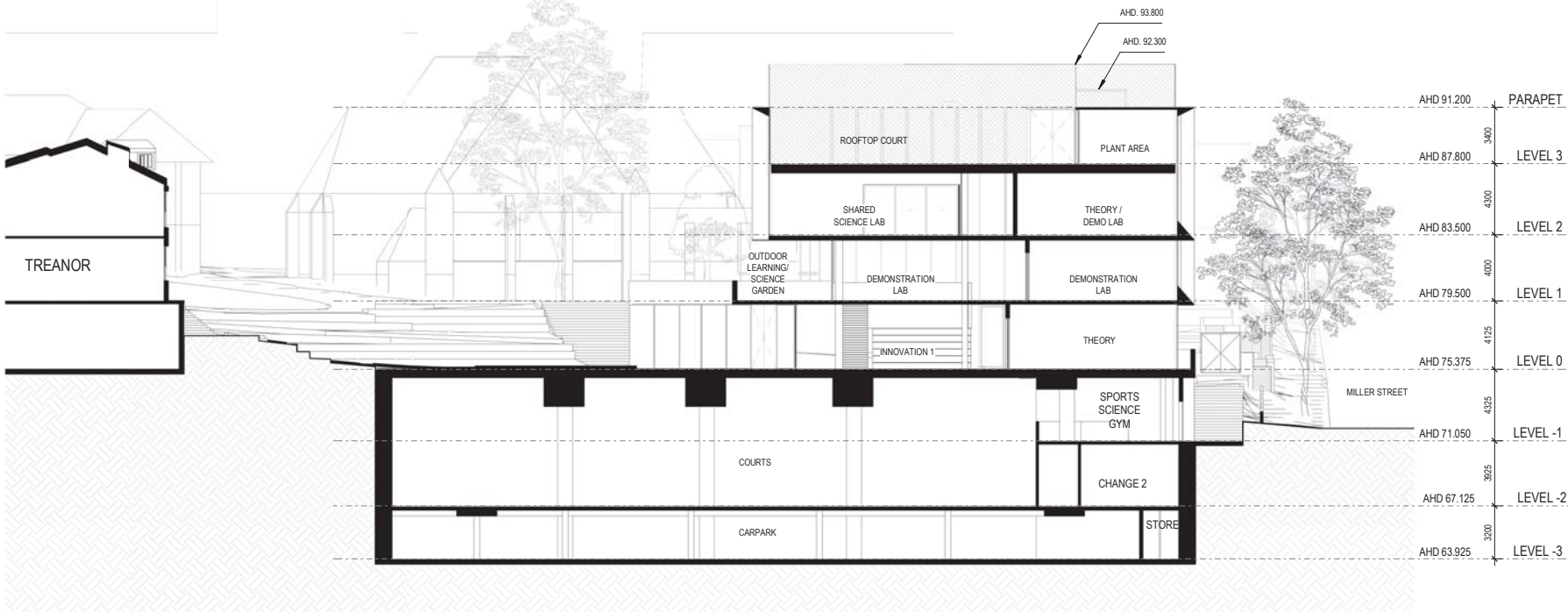
Drawing Title
ELEVATIONS

Status
SSDA

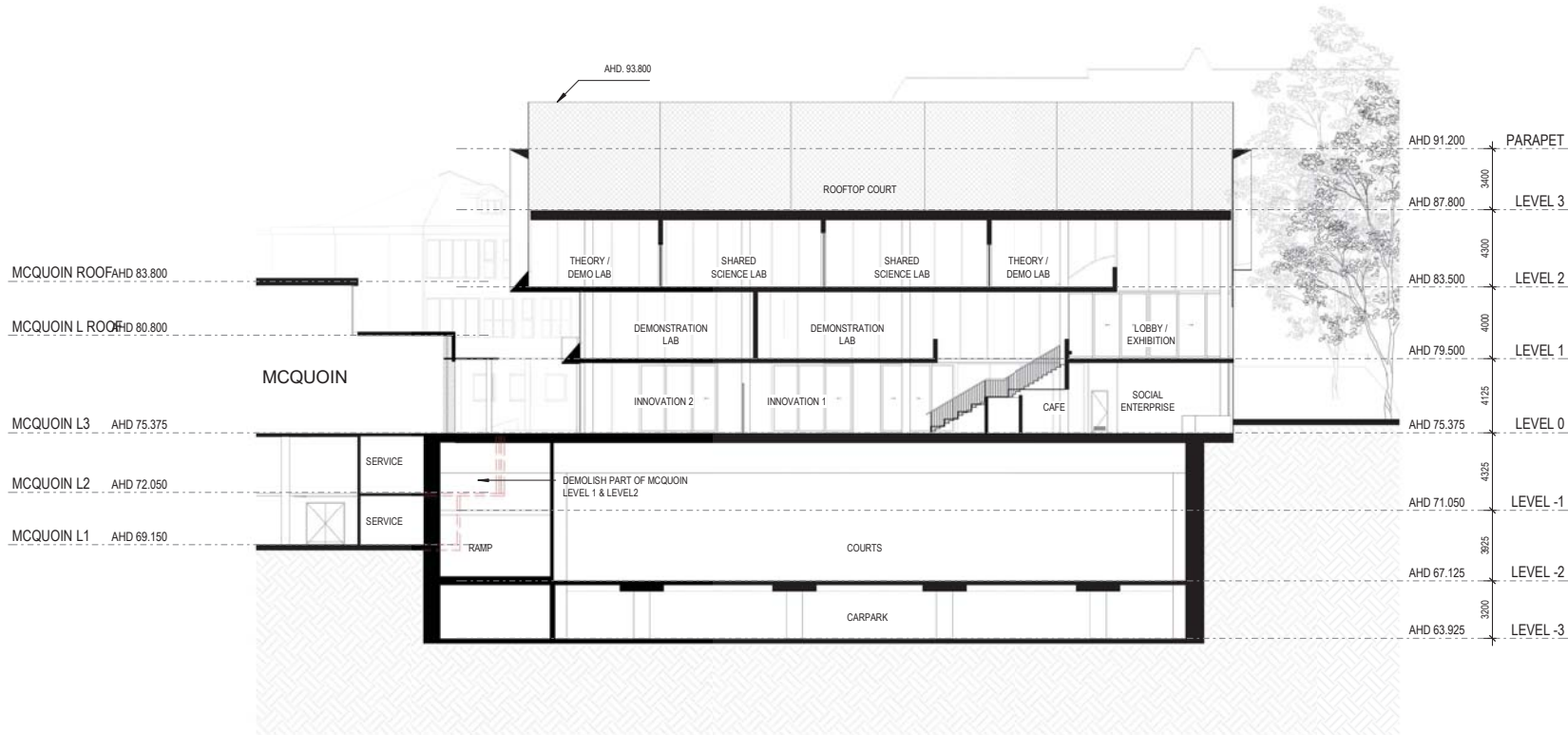
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Author	Checker	18/02/2020 5:16:27 PM	1 : 200 @A1

Project No	Drawing No	Revision
2336	A03.03	2

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



1 SECTION A
A02.00 1:200



2 SECTION B
A02.00 1:200

2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135	Ground Floor	Level 12,
Sturt Street Southbank,	11-17 Buckingham Street	324 Queen Street,
VIC 3006	Surry Hills NSW 2010	Brisbane Qld 4000
T +61 3 9699 3644	T +61 2 9660 9329	T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College

Project Address
128 Miller St, North Sydney

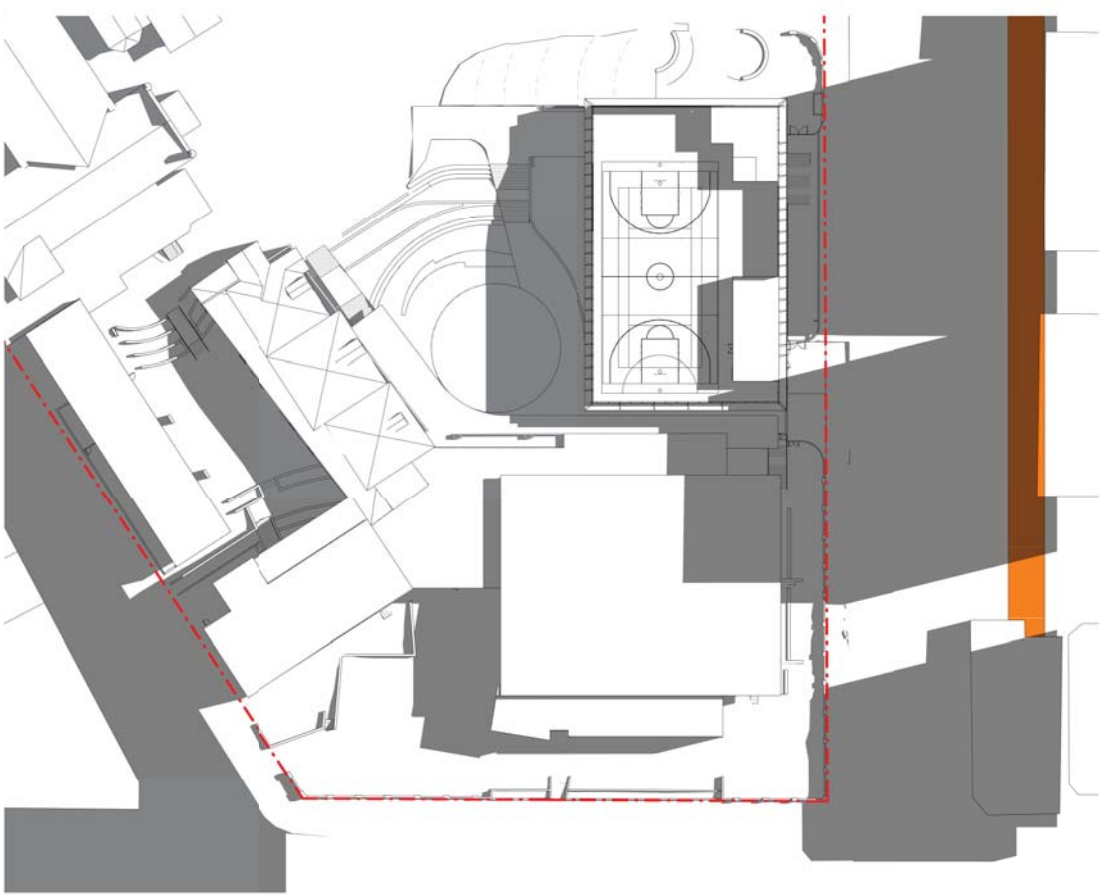
Drawing Title
SECTIONS

Status
SSDA

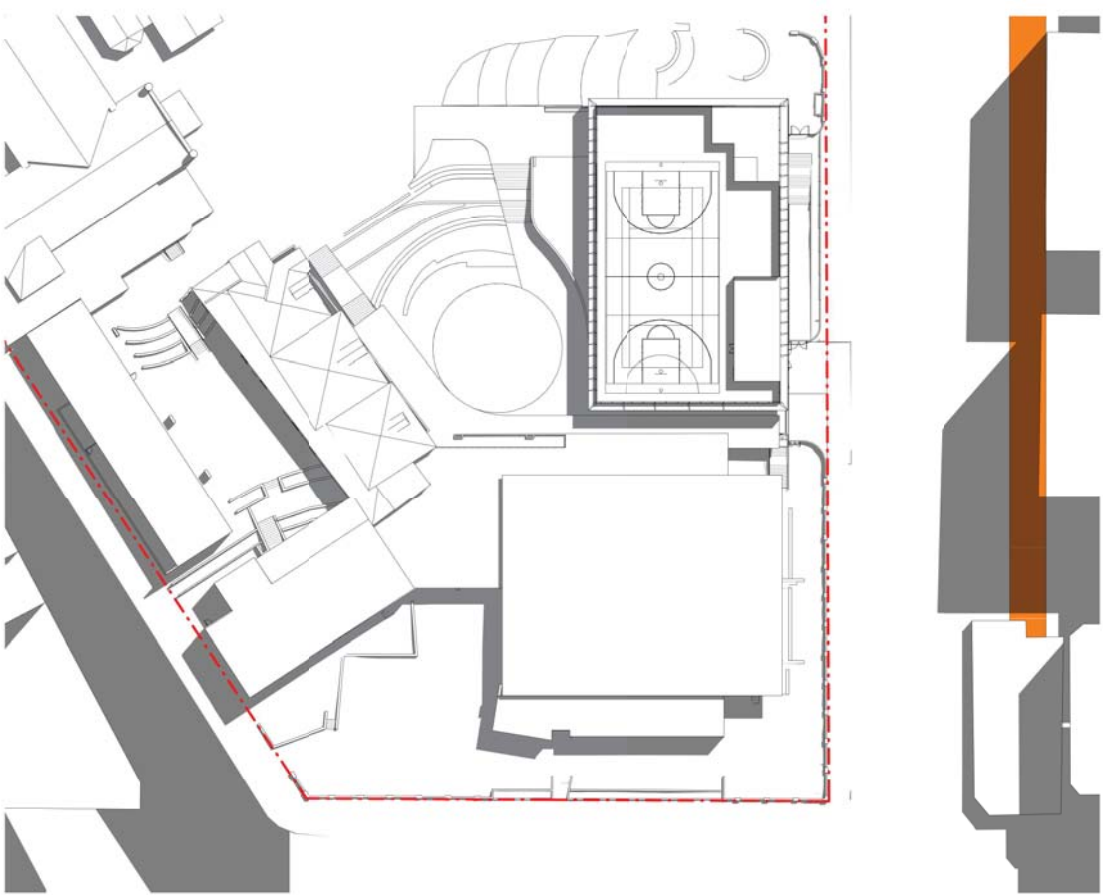
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Project No	Drawing No	Revision
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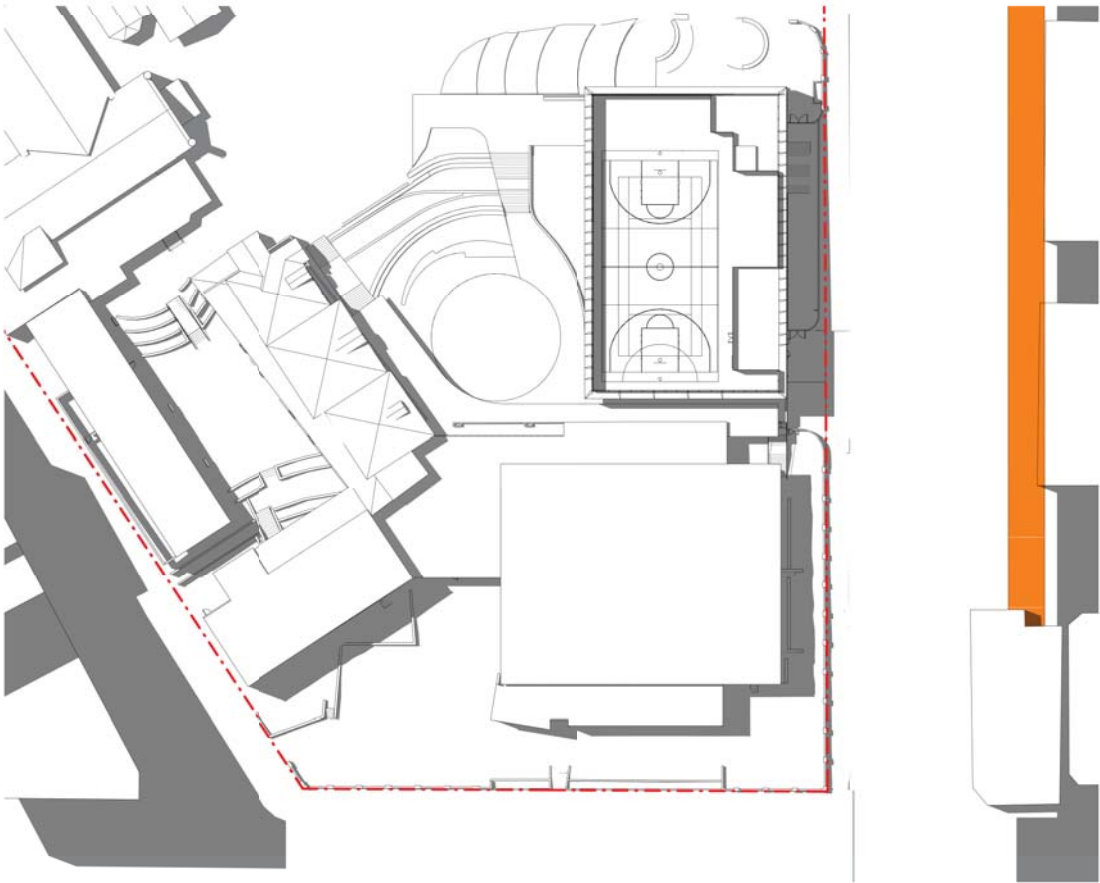
Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



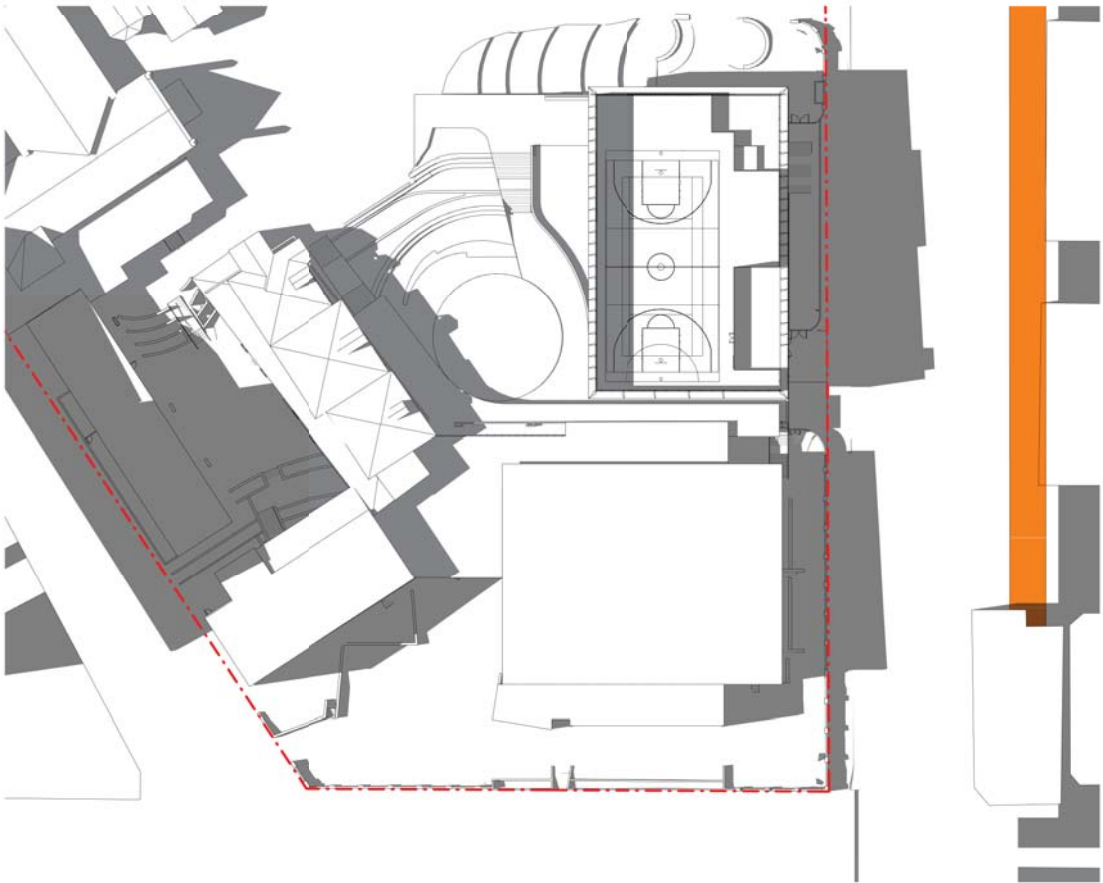
SUN STUDY 9AM



SUN STUDY 11AM



SUN STUDY 1PM



SUN STUDY 3PM

MILLER STREET SPECIAL AREA, AS IDENTIFIED IN THE NORTH SYDNEY LEP

2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135	Ground Floor	Level 12,
Sturt Street Southbank,	11-17 Buckingham Street	324 Queen Street,
VIC 3006	Surry Hills NSW 2010	Brisbane Qld 4000
T +61 3 9699 3644	T +61 2 9660 9329	T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College

Project Address
128 Miller St, North Sydney

Drawing Title
SHADOW DIAGRAMS - SUMMER

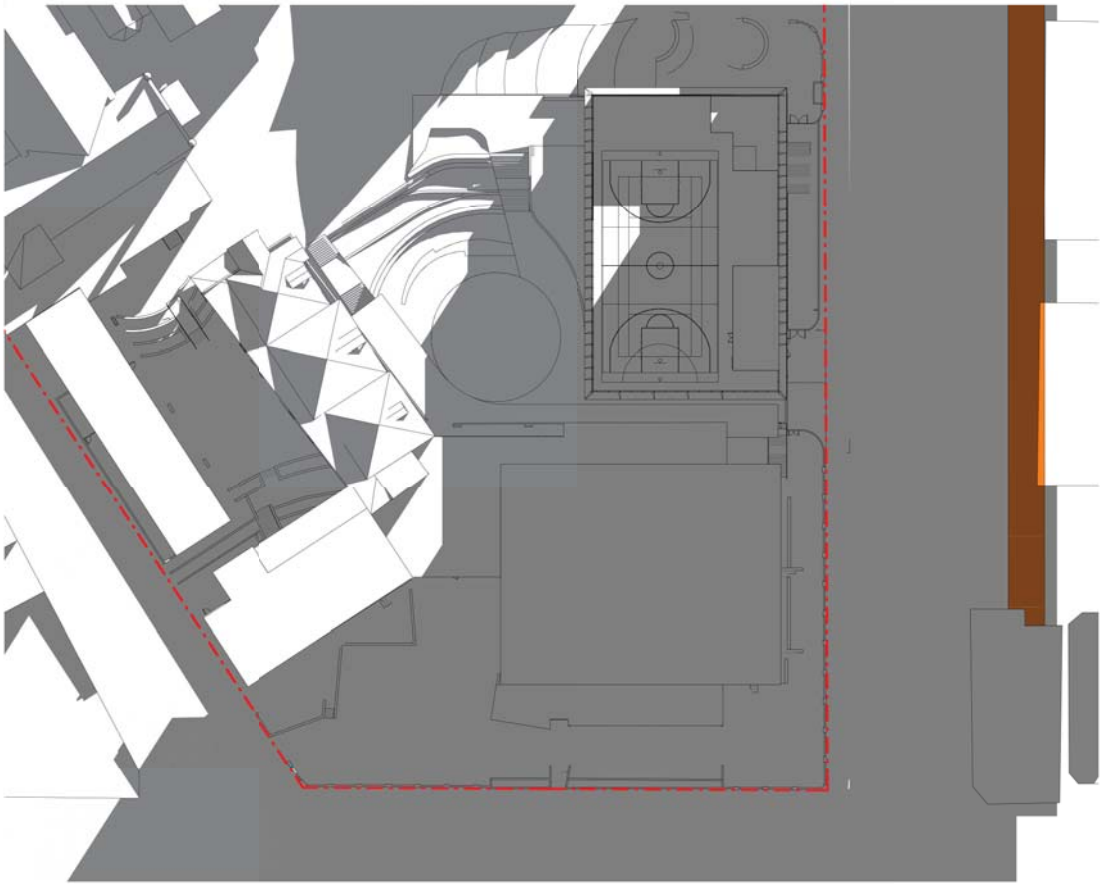
Status
SSDA

Drawn By	Checked By	Date Printed	Scale
WX	NK	18/02/2020 5:17:20 PM	1 : 500 @A1

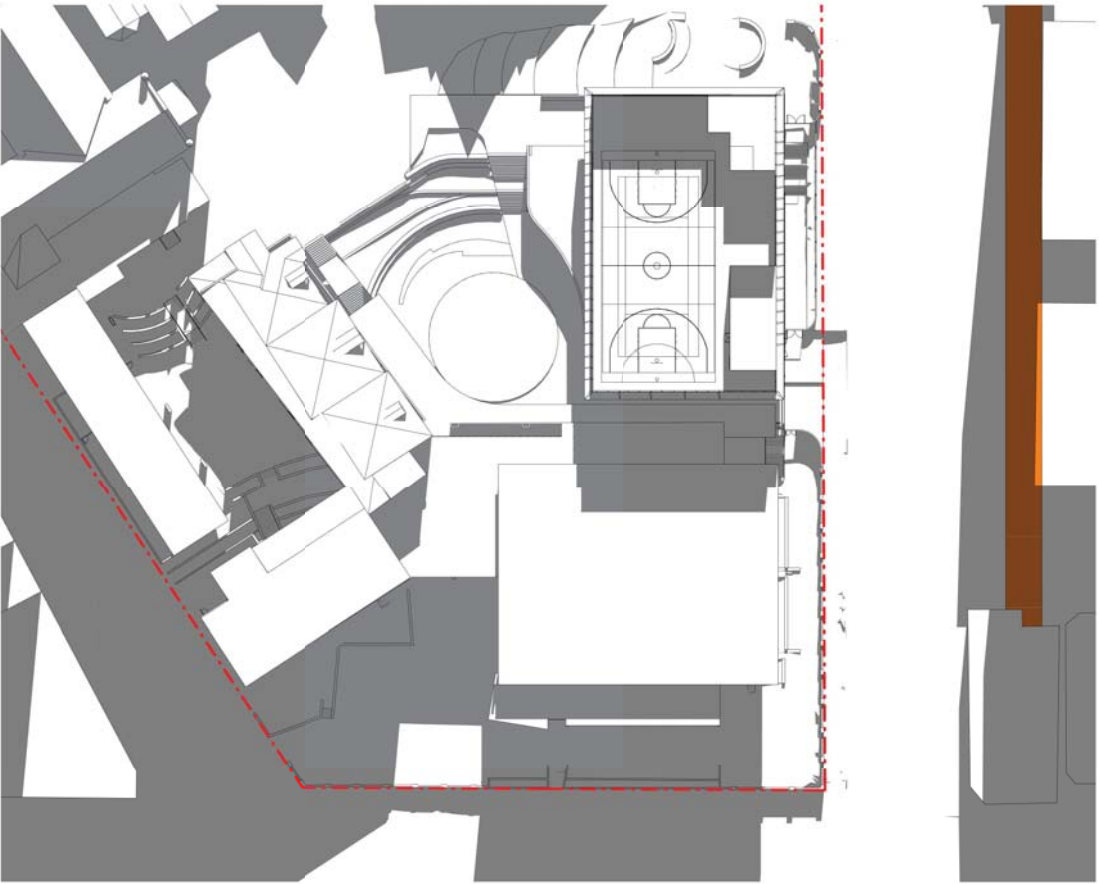
Project No	Drawing No	Revision
2336	A04.03	2



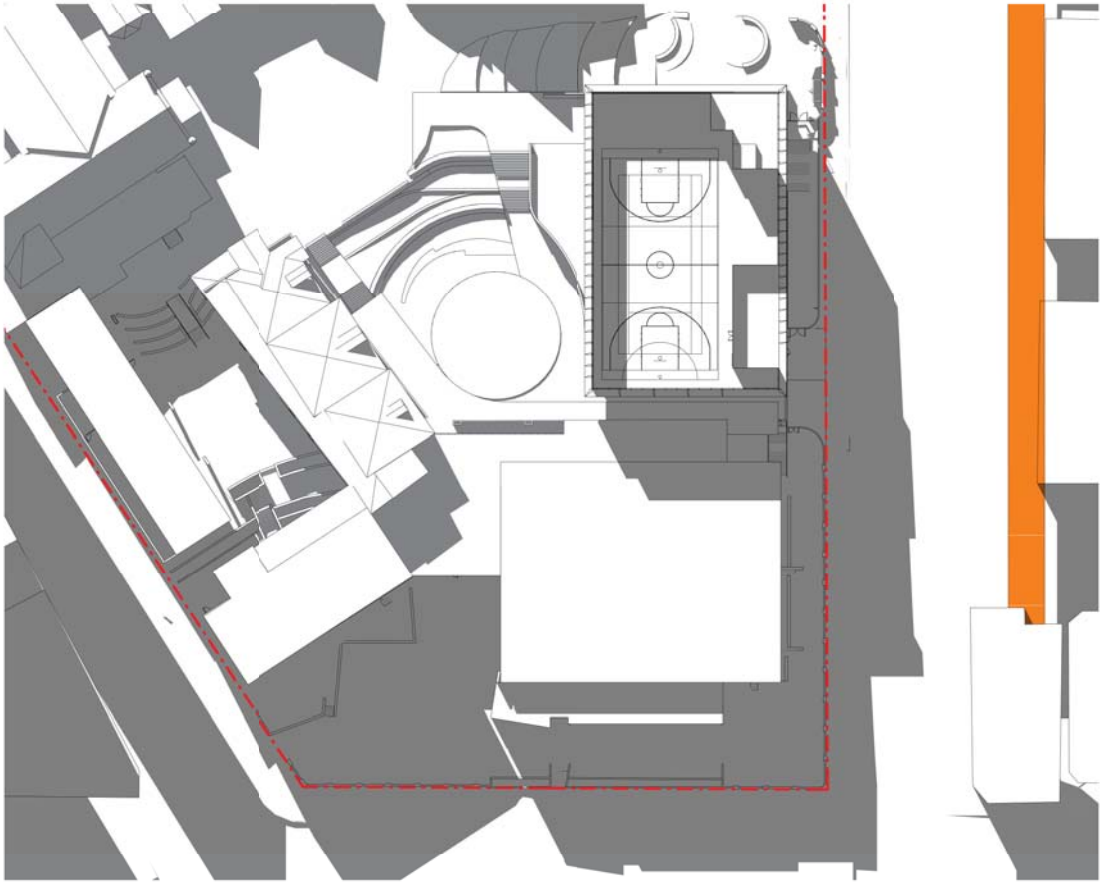
Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



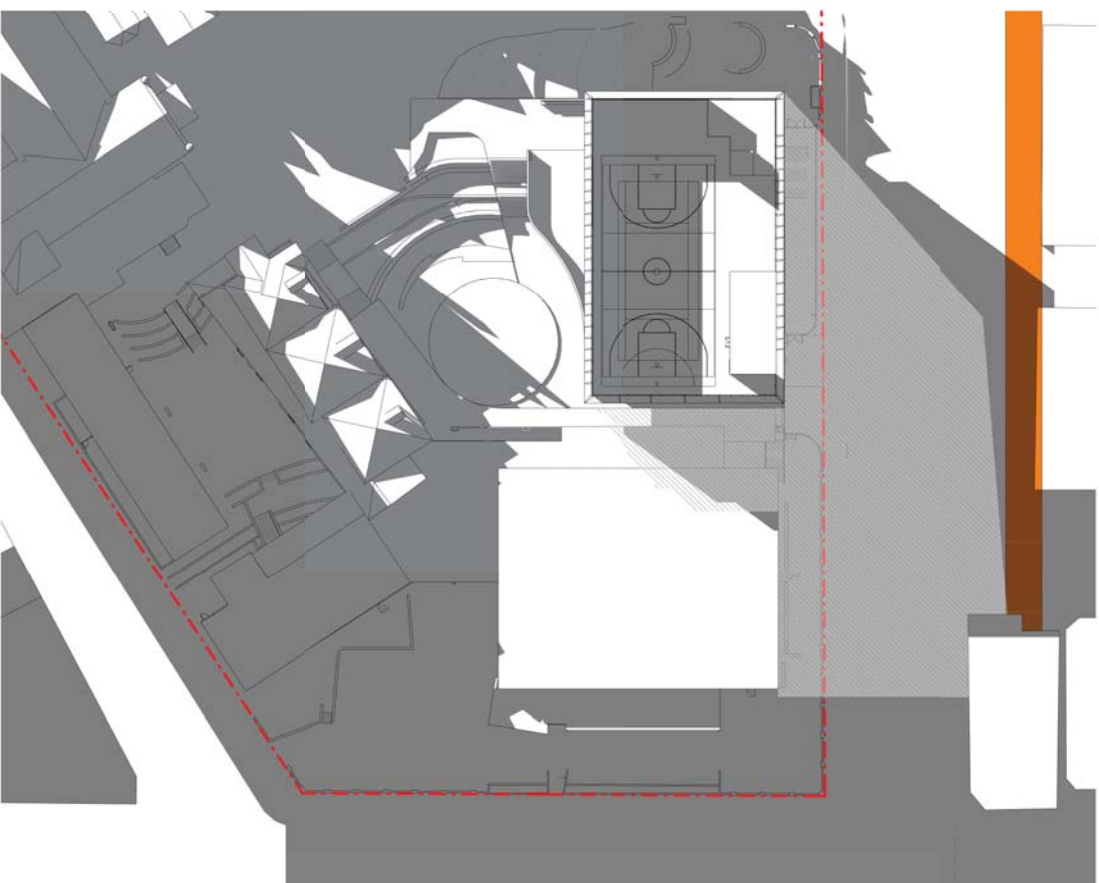
SUN STUDY 9AM -Winter



SUN STUDY 11AM - -Winter



SUN STUDY 1PM -Winter



SUN STUDY 3PM -Winter

 MILLER STREET SPECIAL AREA, AS IDENTIFIED IN THE NORTH SYDNEY LEP

 2PM NEW BUILT CAST SHADOW

Extent of shadow relating to LEP Clause 6.3(2), confirming no net increase in overshadowing between 12 pm and 2 pm from the March equinox to the September equinox (inclusive)

3	SSDA	21/02/2020
2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne 4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Sydney Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Brisbane Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821
---	---	---

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521, Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College - Scientia Project

Project Address
128 Miller St, North Sydney

Drawing Title
SHADOW DIAGRAMS - WINTER

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
WX	NK	21/02/2020 4:46:54 PM	1 : 500 @A1

Project No	Drawing No	Revision
2336	A04.04	3

Builder/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



VIEW FROM THE MAIN DRIVE LOOKING SOUTH



VIEW FROM MILLER STREET LOOKING WEST



VIEW FROM THE LOWER COURTYARD LOOKING TOWARDS THE CHAPEL



VIEW FROM THE UPPER COURTYARD LOOKING EAST

2	SSDA	18/02/2020
1	SSDA DRAFT	7/02/2020
Rev	Description	Date

hayball

Melbourne	Sydney	Brisbane
4/135	Ground Floor	Level 12,
Sturt Street Southbank,	11-17 Buckingham Street	324 Queen Street,
VIC 3006	Surry Hills NSW 2010	Brisbane Qld 4000
T +61 3 9699 3644	T +61 2 9660 9329	T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects:Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College

Project Address
128 Miller St, North Sydney

Drawing Title
PERSPECTIVES

Status
SSDA

Drawn By	Checked By	Date Printed	Scale
WX	NK	18/02/2020 5:18:19 PM	@A1

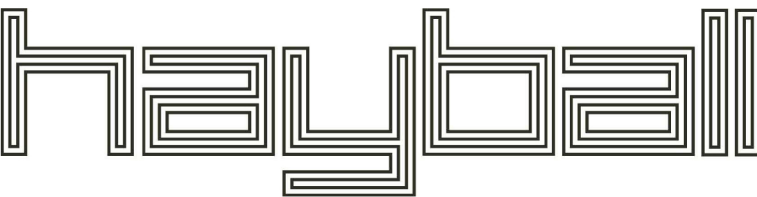
Project No	Drawing No	Revision
2336	A06.04	2

Builders/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



- 8 NEW DEDICATED STAFF SPACES IN EXISTING UNDERUTILISED SISTERS OF MERCY CAR PARK, BY AGREEMENT
- PROPOSED NEW UNDERGROUND CARPARK WITH 55 CAR SPACES
- PROPOSED 8 BIKE PARKING SPACES

1	SSDA RFI	02/04/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
Monte Sant Angelo Mercy College -
Scientia Project

Project Address
128 Miller St, North Sydney

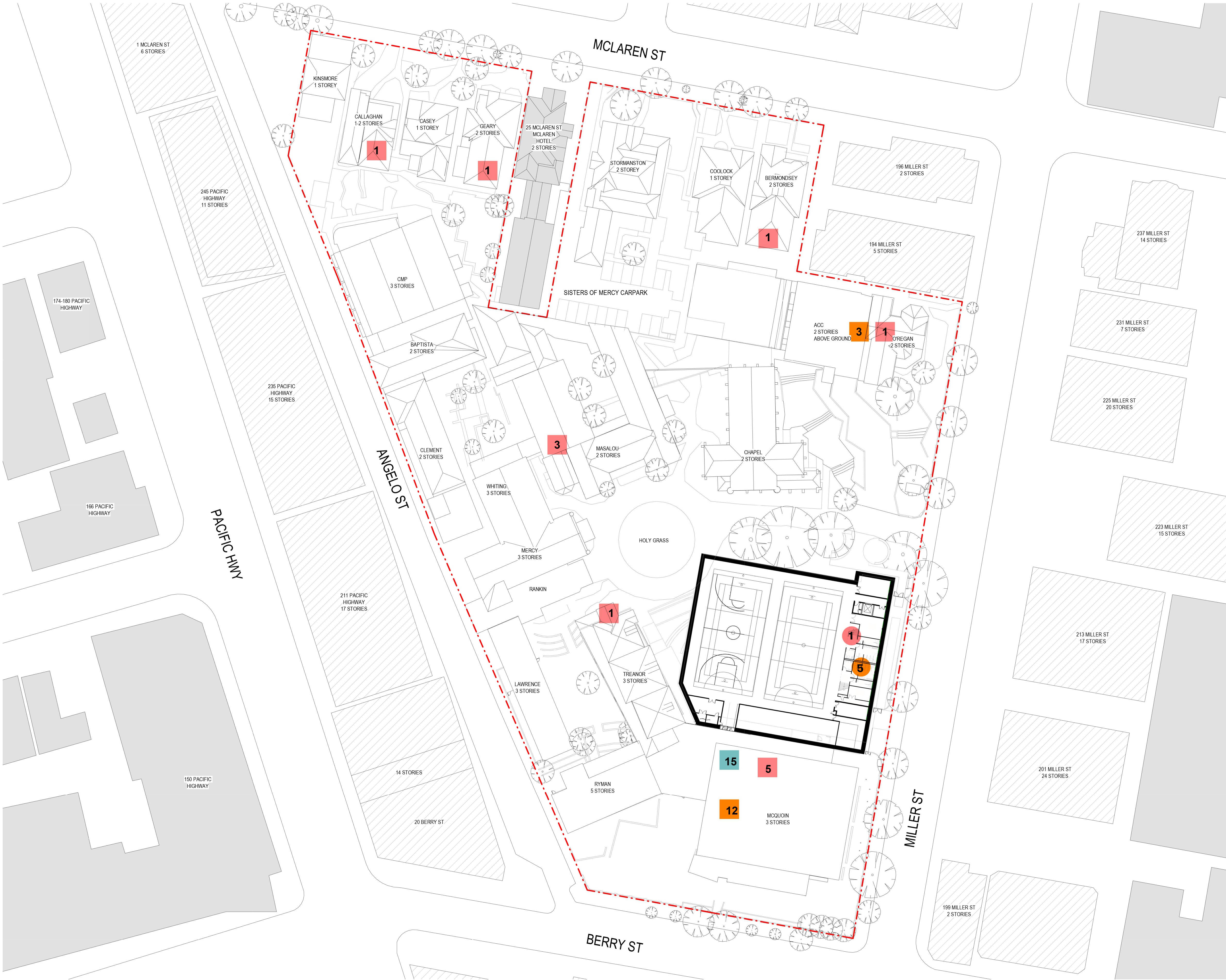
Drawing Title
SITE PLAN - PARKING

Status
ISSUED TO ADDRESS SSDA RFI 01

Drawn By	Checked By	Date Printed	Scale
Author	Checker	2/04/2020 6:21:16 PM	1 : 500 @A1

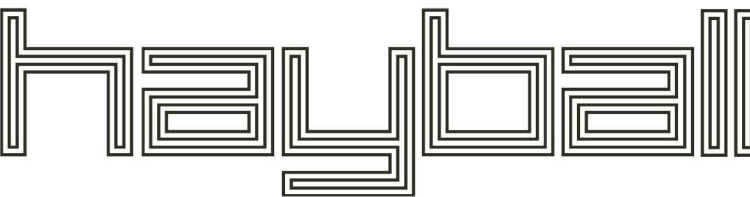
Project No	Drawing No	Revision
2336	x03.16	1

Builders/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved



- PROPOSED
- STAFF CHANGE/ SHOWER FACILITIES (1 PROPOSED)
 - STUDENT CHANGE/ SHOWER FACILITIES (5 PROPOSED)
- EXISTING
- STAFF CHANGE/ SHOWER FACILITIES (13 TOTAL)
 - STUDENT CHANGE/ SHOWER FACILITIES (15 TOTAL)
 - STAFF LOCKERS (15 TOTAL)

1	SSDA RFI	02/04/2020
Rev	Description	Date



Melbourne	Sydney	Brisbane
4/135 Sturt Street Southbank, VIC 3006 T +61 3 9699 3644	Ground Floor 11-17 Buckingham Street Surry Hills NSW 2010 T +61 2 9660 9329	Level 12, 324 Queen Street, Brisbane Qld 4000 T +61 7 3211 9821

ABN: 84006394261 NSW Nominated Architects Tom Jordan 7521,
Richard Leonard 7522, David Tordoff 8028

Project Title
**Monte Sant Angelo Mercy College -
Scientia Project**

Project Address
128 Miller St, North Sydney

Drawing Title
**SITE PLAN - END OF TRIP
FACILITIES**

Status
ISSUED TO ADDRESS SSDA RFI 01

Drawn By	Checked By	Date Printed	Scale
Author	Checker	2/04/2020 6:21:31 PM	1 : 500 @A1

Project No	Drawing No	Revision
2336	x03.17	1

Builders/Contractors shall verify job dimensions before any job commences. Figured dimensions shall take precedence over scaled work. Work shall also conform to the specification, other drawings and job dimensions. All shop drawings shall be submitted to the Architect/Consultant and manufacture shall not commence prior to the return of inspected shop drawings signed by the Architect/Consultant. © Copyright 2008 All rights reserved

APPENDIX C

SIDRA Outputs

USER REPORT FOR SITE

 Project: 19.455m01v01

Template: Layout

Site: 102 [Miller St/Berry St - AM Existing Scenario]

Miller St/Berry St - AM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Variable Phasing

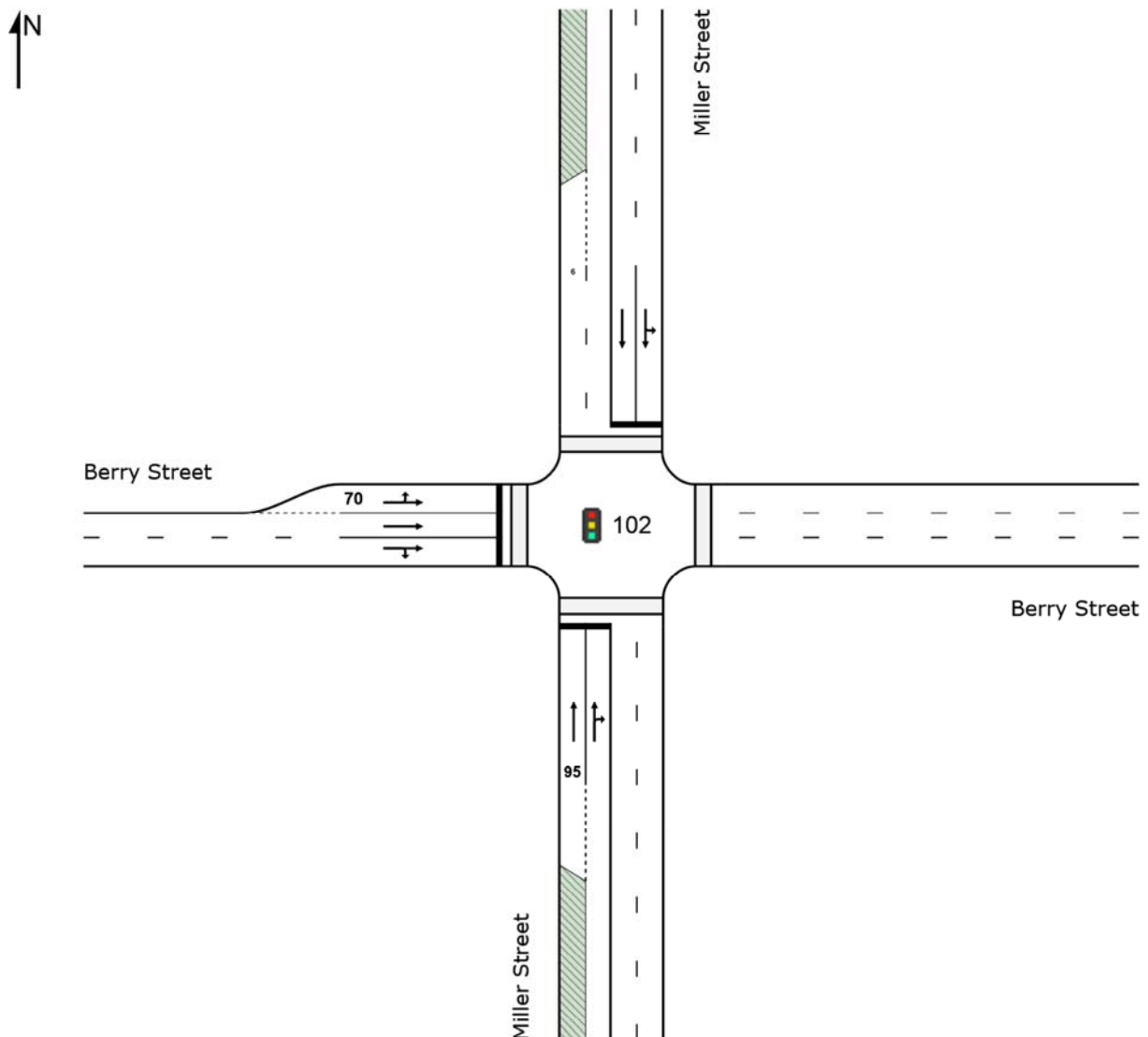
Reference Phase: Phase A

Input Phase Sequence: A, B, C, D*

Output Phase Sequence: A, B, C

(* Variable Phase)

Site Layout



USER REPORT FOR SITE



Project: 19.455m01v01

Template: Movement Summary

Site: 102 [Miller St/Berry St - AM Existing Scenario]

Miller St/Berry St - AM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D*

Output Phase Sequence: A, B, C

(* Variable Phase)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
2	T1	281	12.4	0.780	22.5	LOS B	20.8	153.2	0.71	0.65	0.79	24.2
3	R2	325	3.9	0.780	37.3	LOS C	20.8	153.2	0.97	0.94	1.14	18.7
Approach		606	7.8	0.780	30.4	LOS C	20.8	153.2	0.85	0.81	0.97	21.1
North: Miller Street												
7	L2	252	3.8	0.882	66.3	LOS E	19.6	143.5	1.00	1.02	1.28	13.7
8	T1	391	16.4	0.882	60.8	LOS E	22.8	181.7	1.00	1.06	1.26	14.9
Approach		642	11.5	0.882	62.9	LOS E	22.8	181.7	1.00	1.04	1.27	14.4
West: Berry Street												
10	L2	120	0.0	0.767	42.6	LOS D	20.9	147.2	0.91	0.84	0.96	17.1
11	T1	1101	1.3	0.767	38.8	LOS C	25.2	190.7	0.93	0.84	0.96	15.9
12	R2	69	57.6	0.767	43.7	LOS D	25.2	190.7	0.96	0.87	0.99	16.2
Approach		1291	4.2	0.767	39.4	LOS C	25.2	190.7	0.93	0.84	0.96	16.0
All Vehicles		2539	6.9	0.882	43.2	LOS D	25.2	190.7	0.93	0.88	1.04	16.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	543	55.4	LOS E	1.8	1.8	0.97	0.97	
P2	East Full Crossing	1117	56.8	LOS E	3.8	3.8	1.00	1.00	
P3	North Full Crossing	387	55.0	LOS E	1.3	1.3	0.97	0.97	
P4	West Full Crossing	829	56.1	LOS E	2.8	2.8	0.98	0.98	
All Pedestrians		2877	56.1	LOS E			0.98	0.98	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Site: 102 [Miller St/Berry St - PM Existing Scenario]

Miller St/Berry St - PM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D*

Output Phase Sequence: A, B, C

(* Variable Phase)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
2	T1	326	12.6	0.298	11.9	LOS A	9.0	69.5	0.51	0.45	0.51	30.2
3	R2	312	1.0	0.477	18.8	LOS B	8.7	61.3	0.78	0.77	0.78	25.1
Approach		638	6.9	0.477	15.2	LOS B	9.0	69.5	0.64	0.61	0.64	27.6
North: Miller Street												
7	L2	209	1.0	0.600	43.7	LOS D	10.3	72.8	0.89	0.79	0.89	17.7
8	T1	258	9.4	0.646	36.9	LOS C	12.3	93.2	0.87	0.73	0.87	19.8
Approach		467	5.6	0.646	39.9	LOS C	12.3	93.2	0.88	0.76	0.88	18.8
West: Berry Street												
10	L2	122	0.0	0.650	44.8	LOS D	17.5	122.7	0.94	0.82	0.94	16.5
11	T1	831	0.6	0.650	40.5	LOS C	18.0	126.6	0.93	0.81	0.93	15.4
12	R2	75	29.6	0.650	44.6	LOS D	17.4	129.2	0.94	0.81	0.94	16.0
Approach		1027	2.7	0.650	41.3	LOS C	18.0	129.2	0.93	0.81	0.93	15.6
All Vehicles		2133	4.6	0.650	33.2	LOS C	18.0	129.2	0.83	0.74	0.83	19.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	597	55.5	LOS E	2.0	2.0	0.97	0.97
P2	East Full Crossing	1095	56.7	LOS E	3.7	3.7	1.00	1.00
P3	North Full Crossing	308	54.9	LOS E	1.0	1.0	0.96	0.96
P4	West Full Crossing	613	55.6	LOS E	2.0	2.0	0.97	0.97
All Pedestrians		2613	56.0	LOS E			0.98	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Site: 102 [Miller St/Berry St - PM 10yr Growth Scenario]

Miller St/Berry St - PM 10yr Growth Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Design Life Analysis (Final Year): Results for 10 years

Timings based on settings in the Site Phasing & Timing dialog (Demand & Sensitivity Analysis overrides)

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D*

Output Phase Sequence: A, B, C

(* Variable Phase)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
2	T1	398	12.6	0.368	13.0	LOS A	11.7	91.1	0.55	0.49	0.55	29.4
3	R2	380	1.0	0.626	21.4	LOS B	11.4	80.2	0.88	0.82	0.88	23.9
Approach		778	6.9	0.626	17.1	LOS B	11.7	91.1	0.71	0.65	0.71	26.6
North: Miller Street												
7	L2	255	1.0	0.847	55.4	LOS D	14.9	105.3	0.91	0.94	1.16	15.3
8	T1	314	9.4	0.849	48.7	LOS D	18.1	136.7	0.90	0.93	1.11	17.1
Approach		570	5.6	0.849	51.7	LOS D	18.1	136.7	0.91	0.94	1.13	16.3
West: Berry Street												
10	L2	149	0.0	0.857	54.2	LOS D	23.0	161.8	0.96	0.97	1.14	14.6
11	T1	1012	0.6	0.857	50.2	LOS D	28.5	210.0	0.97	0.97	1.14	13.5
12	R2	91	29.6	0.857	54.7	LOS D	28.5	210.0	1.00	0.99	1.15	14.0
Approach		1252	2.7	0.857	51.0	LOS D	28.5	210.0	0.97	0.97	1.14	13.6
All Vehicles		2600	4.6	0.857	41.0	LOS C	28.5	210.0	0.88	0.87	1.01	17.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	728	55.8	LOS E ¹²	2.4	2.4	0.98	0.98	
P2	East Full Crossing	1334	57.3	LOS E ¹²	4.6	4.6	1.01	1.01	
P3	North Full Crossing	376	55.0	LOS E ¹²	1.2	1.2	0.97	0.97	
P4	West Full Crossing	747	55.9	LOS E ¹²	2.5	2.5	0.98	0.98	
All Pedestrians		3185	56.4	LOS E ¹²			0.99	0.99	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

Site: 102 [Miller St/Berry St - AM 10 yr Growth Scenario]

Miller St/Berry St - AM 10 yr Growth Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Design Life Analysis (Final Year): Results for 10 years

Timings based on settings in the Site Phasing & Timing dialog (Demand & Sensitivity Analysis overrides)

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D*

Output Phase Sequence: A, B, C

(* Variable Phase)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
2	T1	343	12.4	0.981	42.0	LOS C	41.2	303.4	0.74	0.79	1.01	18.3
3	R2	396	3.9	0.981	82.0	LOS F ¹¹	41.2	303.4	1.00	1.23	1.64	11.3
Approach		739	7.8	0.981	63.5	LOS E ¹¹	41.2	303.4	0.88	1.02	1.35	13.9
North: Miller Street												
7	L2	307	3.8	1.076	150.4	LOS F ¹¹	37.8	277.6	1.00	1.45	1.99	7.3
8	T1	476	16.4	1.076	146.4	LOS F ¹¹	44.6	356.0	1.00	1.61	1.97	7.8
Approach		783	11.5	1.076	148.0	LOS F ¹¹	44.6	356.0	1.00	1.55	1.98	7.6
West: Berry Street												
10	L2	146	0.0	0.993	92.7	LOS F ¹¹	37.1	261.9	0.94	1.25	1.52	9.9
11	T1	1342	1.3	0.993	88.7	LOS F ¹¹	53.5	403.3	0.96	1.27	1.51	9.0
12	R2	85	57.6	0.993	92.5	LOS F ¹¹	53.5	403.3	1.00	1.27	1.50	9.5
Approach		1573	4.2	0.993	89.3	LOS F ¹¹	53.5	403.3	0.96	1.27	1.51	9.1
All Vehicles		3095	6.9	1.076	98.0	LOS F ¹¹	53.5	403.3	0.95	1.28	1.59	9.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	662	55.7	LOS E ¹²	2.2	2.2	0.98	0.98	
P2	East Full Crossing	1361	57.4	LOS E ¹²	4.7	4.7	1.01	1.01	
P3	North Full Crossing	472	55.2	LOS E ¹²	1.6	1.6	0.97	0.97	
P4	West Full Crossing	1011	56.5	LOS E ¹²	3.4	3.4	0.99	0.99	
All Pedestrians		3507	56.5	LOS E ¹²			0.99	0.99	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

¹² Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

Site: 101 [Miller St/McLaren St - AM Existing Scenario]

Miller St/McLaren St - AM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

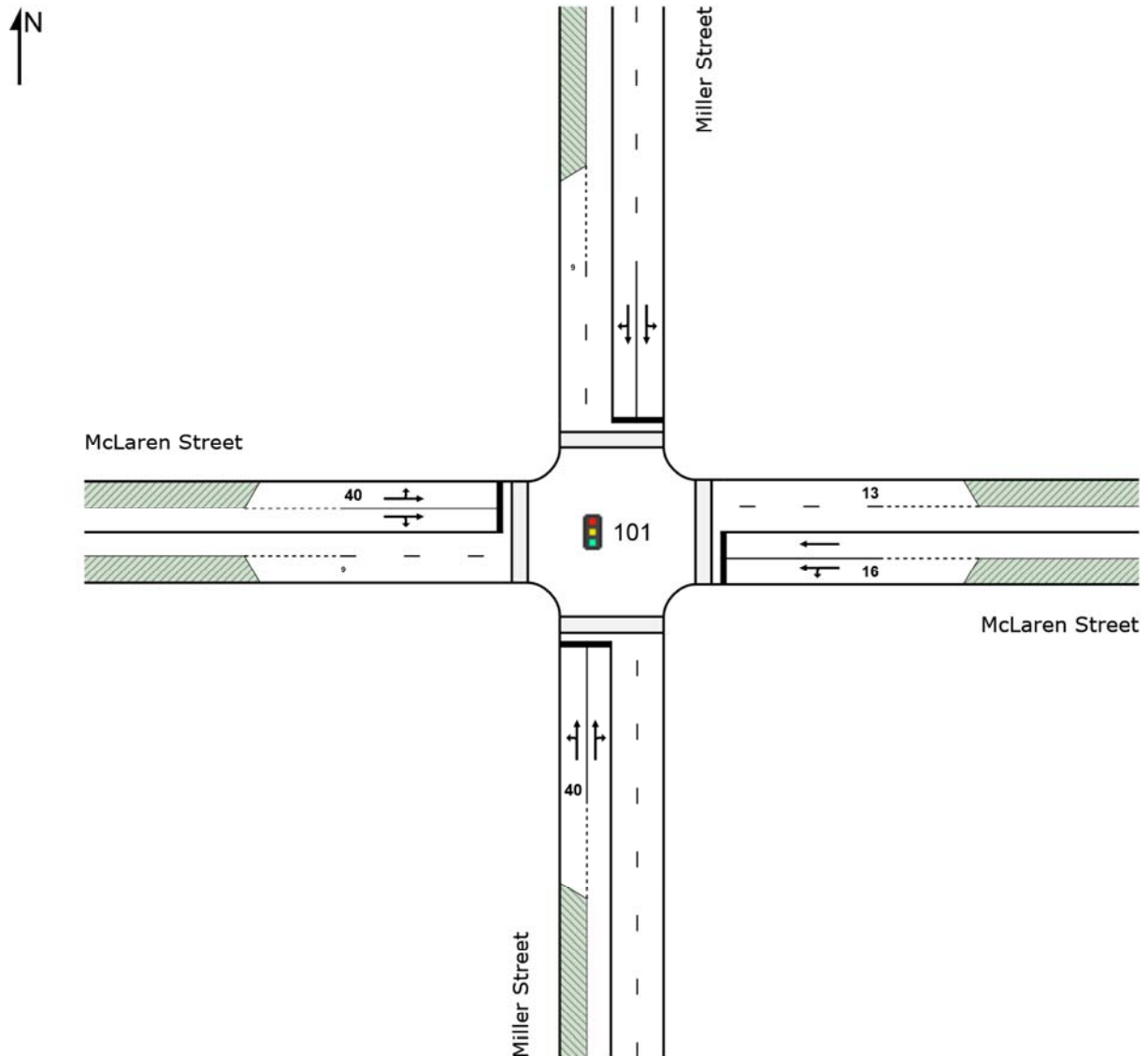
Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

Output Phase Sequence: A, B, C

Site Layout



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Organisation: TRAFFIX PTY LTD | Created: Friday, 6 March 2020 3:04:07 PM

Project: T:\Synergy\Projects\19\19.455\Modelling\19.455m01v01.sip8

Site: 101 [Miller St/McLaren St - AM Existing Scenario]

Miller St/McLaren St - AM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

Output Phase Sequence: A, B, C

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
1	L2	93	2.3	0.071	14.4	LOS A	2.3	16.7	0.45	0.61	0.45	29.9
2	T1	287	10.3	0.357	16.4	LOS B	10.0	75.7	0.60	0.54	0.60	28.0
3	R2	21	5.0	0.357	19.9	LOS B	10.0	75.7	0.60	0.54	0.60	27.3
Approach		401	8.1	0.357	16.2	LOS B	10.0	75.7	0.57	0.56	0.57	28.4
East: McLaren Street												
4	L2	60	12.3	0.411	61.5	LOS E	3.5	26.9	0.98	0.76	0.98	14.6
5	T1	107	2.9	0.517	52.7	LOS D	5.9	42.4	0.96	0.76	0.96	16.9
Approach		167	6.3	0.517	55.8	LOS D	5.9	42.4	0.97	0.76	0.97	16.0
North: Miller Street												
7	L2	56	9.4	0.511	18.7	LOS B	18.2	140.6	0.63	0.59	0.63	28.0
8	T1	607	12.1	0.511	16.9	LOS B	18.2	140.6	0.65	0.61	0.65	27.5
9	R2	168	1.9	0.511	27.0	LOS B	11.9	87.4	0.74	0.72	0.74	24.9
Approach		832	9.9	0.511	19.1	LOS B	18.2	140.6	0.67	0.63	0.67	26.9
West: McLaren Street												
10	L2	67	1.6	0.129	37.6	LOS C	2.9	20.7	0.78	0.71	0.78	21.2
11	T1	104	3.0	0.360	40.6	LOS C	7.7	54.9	0.88	0.72	0.88	19.1
12	R2	48	2.2	0.360	44.0	LOS D	7.7	54.9	0.88	0.72	0.88	20.0
Approach		220	2.4	0.360	40.4	LOS C	7.7	54.9	0.85	0.71	0.85	19.9
All Vehicles		1620	8.1	0.517	25.0	LOS B	18.2	140.6	0.70	0.64	0.70	24.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	539	55.4	LOS E	1.8	1.8	0.97	0.97	
P2	East Full Crossing	398	55.1	LOS E	1.3	1.3	0.97	0.97	
P3	North Full Crossing	76	54.3	LOS E	0.2	0.2	0.95	0.95	
P4	West Full Crossing	263	54.8	LOS E	0.9	0.9	0.96	0.96	
All Pedestrians		1276	55.1	LOS E			0.97	0.97	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Site: 101 [Miller St/McLaren St - PM Existing Scenario]

Miller St/McLaren St - PM Existing Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

Output Phase Sequence: A, B, C

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
1	L2	127	0.8	0.298	20.2	LOS B	9.0	67.0	0.59	0.60	0.59	27.9
2	T1	371	11.6	0.298	18.2	LOS B	9.0	67.0	0.62	0.58	0.62	26.8
3	R2	25	4.2	0.298	22.8	LOS B	8.3	63.4	0.63	0.56	0.63	25.8
Approach		523	8.7	0.298	18.9	LOS B	9.0	67.0	0.61	0.58	0.61	27.0
East: McLaren Street												
4	L2	60	0.0	0.219	51.6	LOS D	3.1	21.8	0.91	0.74	0.91	16.3
5	T1	155	0.7	0.486	45.3	LOS D	7.9	56.0	0.92	0.74	0.92	18.3
Approach		215	0.5	0.486	47.1	LOS D	7.9	56.0	0.92	0.74	0.92	17.7
North: Miller Street												
7	L2	34	0.0	0.096	19.5	LOS B	2.6	19.4	0.54	0.52	0.54	27.0
8	T1	323	9.8	0.478	20.8	LOS B	12.4	93.2	0.68	0.62	0.68	25.7
9	R2	57	1.9	0.478	25.2	LOS B	12.4	93.2	0.70	0.64	0.70	26.2
Approach		414	7.9	0.478	21.3	LOS B	12.4	93.2	0.67	0.61	0.67	25.9
West: McLaren Street												
10	L2	43	0.0	0.066	30.9	LOS C	1.7	11.6	0.70	0.67	0.70	23.1
11	T1	82	0.0	0.246	32.1	LOS C	5.7	39.6	0.79	0.67	0.79	21.4
12	R2	47	0.0	0.246	35.6	LOS C	5.7	39.6	0.79	0.67	0.79	22.2
Approach		173	0.0	0.246	32.8	LOS C	5.7	39.6	0.77	0.67	0.77	22.0
All Vehicles		1324	6.0	0.486	26.0	LOS B	12.4	93.2	0.70	0.63	0.70	24.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	285	54.8	LOS E	0.9	0.9	0.96	0.96	
P2	East Full Crossing	309	54.9	LOS E	1.0	1.0	0.96	0.96	
P3	North Full Crossing	78	54.3	LOS E	0.3	0.3	0.95	0.95	
P4	West Full Crossing	296	54.8	LOS E	1.0	1.0	0.96	0.96	
All Pedestrians		968	54.8	LOS E			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Site: 101 [Miller St/McLaren St - AM 10yr Growth Scenario]

Miller St/McLaren St - AM 10yr Growth Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Timings based on settings in the Site Phasing & Timing dialog (Demand & Sensitivity Analysis overrides)

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

Output Phase Sequence: A, B, C

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
1	L2	113	2.3	0.108	14.1	LOS A	2.8	20.3	0.45	0.61	0.45	30.1
2	T1	350	10.3	0.539	22.8	LOS B	14.7	111.8	0.73	0.65	0.73	25.1
3	R2	26	5.0	0.539	26.4	LOS B	14.7	111.8	0.73	0.65	0.73	24.2
Approach		489	8.1	0.539	21.0	LOS B	14.7	111.8	0.66	0.64	0.66	26.1
East: McLaren Street												
4	L2	73	12.3	0.599	62.6	LOS E ¹¹	4.3	33.4	0.99	0.80	1.05	14.4
5	T1	131	2.9	0.676	54.5	LOS D	7.4	53.4	0.98	0.83	1.05	16.5
Approach		204	6.3	0.676	57.4	LOS E ¹¹	7.4	53.4	0.98	0.82	1.05	15.7
North: Miller Street												
7	L2	68	9.4	0.699	21.0	LOS B	29.9	230.7	0.75	0.70	0.75	26.8
8	T1	740	12.1	0.699	19.0	LOS B	29.9	230.7	0.76	0.71	0.76	26.6
9	R2	205	1.9	0.699	40.1	LOS C	13.6	98.6	0.91	0.84	0.94	20.7
Approach		1014	9.9	0.699	23.4	LOS B	29.9	230.7	0.79	0.73	0.80	25.1
West: McLaren Street												
10	L2	82	1.6	0.167	39.6	LOS C	3.7	26.1	0.81	0.72	0.81	20.6
11	T1	127	3.0	0.469	44.0	LOS D	9.7	69.4	0.92	0.80	1.00	18.4
12	R2	59	2.2	0.469	47.4	LOS D	9.7	69.4	0.92	0.80	1.00	19.2
Approach		268	2.4	0.469	43.4	LOS D	9.7	69.4	0.88	0.78	0.94	19.2
All Vehicles		1975	8.1	0.699	29.0	LOS C	29.9	230.7	0.79	0.73	0.81	23.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	657	55.7	LOS E ¹²	2.2	2.2	0.98	0.98	
P2	East Full Crossing	485	55.3	LOS E ¹²	1.6	1.6	0.97	0.97	
P3	North Full Crossing	92	54.4	LOS E ¹²	0.3	0.3	0.95	0.95	
P4	West Full Crossing	321	54.9	LOS E ¹²	1.1	1.1	0.96	0.96	
All Pedestrians		1555	55.3	LOS E ¹²			0.97	0.97	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

Site: 101 [Miller St/McLaren St - PM 10 yr Growth Scenario]

Miller St/McLaren St - PM 10 yr Growth Scenario

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Design Life Analysis (Final Year): Results for 10 years

Timings based on settings in the Site Phasing & Timing dialog (Demand & Sensitivity Analysis overrides)

Phase Times determined by the program

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

Output Phase Sequence: A, B, C

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Miller Street												
1	L2	155	0.8	0.420	16.7	LOS B	13.7	102.3	0.56	0.57	0.56	29.8
2	T1	452	11.6	0.420	27.0	LOS B	13.7	102.3	0.71	0.66	0.71	23.2
3	R2	31	4.2	0.420	57.7	LOS E ¹¹	10.6	80.6	1.00	0.83	1.00	15.7
Approach		638	8.7	0.420	26.0	LOS B	13.7	102.3	0.69	0.65	0.69	24.1
East: McLaren Street												
4	L2	73	0.0	0.298	54.3	LOS D	3.9	27.5	0.94	0.76	0.94	15.8
5	T1	189	0.7	0.672	49.1	LOS D	10.3	72.2	0.96	0.81	0.99	17.6
Approach		262	0.5	0.672	50.5	LOS D	10.3	72.2	0.95	0.79	0.97	17.1
North: Miller Street												
7	L2	41	0.0	0.145	15.4	LOS B	4.1	30.4	0.48	0.47	0.48	29.5
8	T1	394	9.8	0.725	19.4	LOS B	13.8	103.6	0.64	0.61	0.66	26.3
9	R2	69	1.9	0.725	26.0	LOS B	13.8	103.6	0.71	0.67	0.73	25.8
Approach		504	7.9	0.725	20.0	LOS B	13.8	103.6	0.64	0.60	0.66	26.4
West: McLaren Street												
10	L2	53	0.0	0.106	38.9	LOS C	2.3	16.2	0.79	0.70	0.79	20.8
11	T1	100	0.0	0.431	42.9	LOS D	8.1	56.6	0.91	0.75	0.91	18.6
12	R2	58	0.0	0.431	46.3	LOS D	8.1	56.6	0.91	0.75	0.91	19.4
Approach		210	0.0	0.431	42.8	LOS D	8.1	56.6	0.88	0.74	0.88	19.4
All Vehicles		1614	6.0	0.725	30.3	LOS C	13.8	103.6	0.74	0.67	0.75	22.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate	
P1	South Full Crossing	348	54.9	LOS E ¹²	1.1	1.1	0.96	0.96	
P2	East Full Crossing	377	55.0	LOS E ¹²	1.2	1.2	0.97	0.97	
P3	North Full Crossing	95	54.4	LOS E ¹²	0.3	0.3	0.95	0.95	
P4	West Full Crossing	361	55.0	LOS E ¹²	1.2	1.2	0.96	0.96	
All Pedestrians		1181	54.9	LOS E ¹²			0.96	0.96	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

12 Level of Service is worse than the Pedestrian Level of Service Target specified in the Parameter Settings dialog.

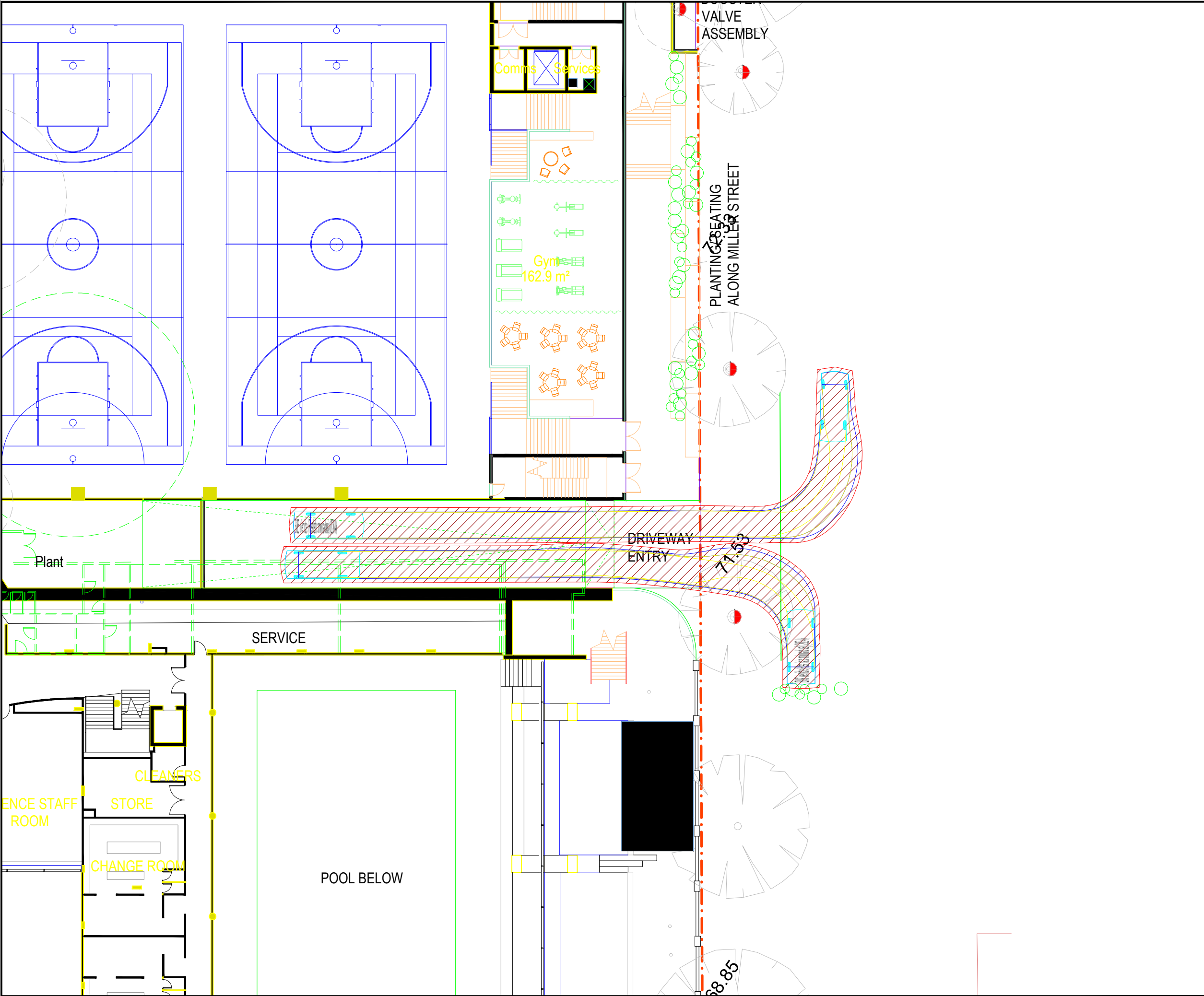
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Organisation: TRAFFIX PTY LTD | Created: Friday, 6 March 2020 3:01:49 PM

Project: T:\Synergy\Projects\19\19.455\Modelling\19.455m01v01.sip8

APPENDIX D

Swept Path Analysis



Notes:

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (AS/NZS 2890.1:2004 Parking facilities - Off-street car parking, and/or AS2890.2:2002 Parking facilities - Off-street commercial vehicle facilities). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

Rev.	Revision Note	By.	Date
A	Initial Design Review	LL	00-00-00

Swept Path Legend

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

Architect

Haybal
11-17 Buckingham Street
Surry Hills NSW 2010

Client

Mont Sant Angelo Mercy College

Scale / Plan Orientation

0 2.5 5 7.5 10m
1:250 @ A3

Project Description

Monte Sant Angelo Mercy College
Scientia Project

Drawing Prepared By



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Drawing Title

Swept Path Analysis
Proposed Access Driveway
B99 and B85 Design Vehicles
Entry and Exit Movements

Drawn: HD	Checked: BL	Date: 27-05-20
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19.455d02v01 TRAFFIX [200115 Plans] Design Review.dwg

Project No.	Drawing Phase	Drawing No.	Rev.
19.455	SSD	TX.01	A