



Geoff Ninnes Fong & Partners

Saint Dominic's School
21 Copeland Street, Kingswood NSW

Remedial Action Plan (RAP)

Our ref: 5410-3-E1
19 November 2019

DOCUMENT AUTHORISATION

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Prepared for Geoff Ninnes Fong & Partners

Our ref: 5410-3-E1
 19 November 2019

For and on behalf of

AssetGeoEnviro



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EXECUTIVE SUMMARY

AssetGeoEnviro were engaged by *Geoff Ninnes Fong & Partners* to prepare a Remedial Action Plan (RAP) at 21 Copeland Street, Kingswood NSW (the site) to address the site potential contamination prior to site redevelopment.

The objective of this RAP is to outline a remedial strategy that will address identified contamination issues to ensure the site is suitable for the proposed commercial/industrial development.

This RAP has been prepared in general accordance with the requirements outlined in NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

The first site characterisation detected Lead (2000 mg/kg) on BH1 and an asbestos fragment was identified on BH3. However, the second site investigation did not detect any exceeding potential contaminants including lead or any Asbestos Containing Materials.

The preferred option selected for the remediation includes excavation of impacted fill material in three areas centred on BH1, BH3 and the area under the demountable metal clad classrooms/area over the concrete sitting area- down to the fill material depth. The BH1 impacted soil is classified as Restricted Solid Waste and must be disposed of at a facility lawfully able to receive this type of waste. The impacted area in the vicinity of BH3 is to be classified as special waste (Asbestos) and to be disposed offsite to a facility lawfully able to receive this type of waste.

Since the soil under the demountable metal clad classrooms/over the concrete sitting area has not been investigated during previous works, it is required to be delineated following the removal of the concrete slab and demolition of the above ground structure and to be validated subsequently. Once the impacted area has been investigated then the materials classification will be identified prior to any potential offsite disposal, if necessary.

The RAP outlines the applicable remediation acceptance criteria and a validation plan to be implemented during the remedial works. The RAP also outlines site management requirements during remediation activities.

Following completion of remediation activities, a validation report will be prepared to confirm the remedial objectives have been met and the site has been rendered suitable for the intended land use.

With appropriate implementation of the strategies detailed within the RAP, the site will be rendered suitable for the proposed development.

1. INTRODUCTION

Background

AssetGeoEnviro were engaged by *Geoff Ninnies Fong & Partners* to prepare a Remedial Action Plan (RAP) at 21 Copeland Street, Kingswood NSW (the site). The site area is described in this report and is shown in Figure 1 (**Appendix A**).

St. Dominic's College intend to re-develop the site for a new school building. Proposed redevelopment is to include demolition of existing shed and demountable classrooms, and construction of new permanent buildings (Block E) with a partial undercroft carpark (**Appendix B**). Details of proposed structural loads have not been made available at this stage, but large spans could lead to relatively heavy foundation loads which may require large footings or rock-socketed piles. The only proposed excavations will be for carpark and services. The development is proposed for the southern part of the school (Copeland St.) over an area which was estimated to be approximately 900 m² (Figure 2).

AssetGeoEnviro completed the following environmental assessments relating to the site:

First Investigations

Preliminary waste classification investigations were conducted on this site by AssetGeoEnviro on 16.4.2019 during the geotechnical investigation. Please refer to report REF:5410-1-E1-Soil Assessment & Preliminary Waste Classification for the details and results of these investigations. 14 (6 + 8) locations were selected in total in accessible areas across of the site where most of the excavation works and exposure of underlying soil/fill material is to take place as part of the proposed development. The first site characterisation detected Lead (2000 mg/kg) on BH1 and an asbestos fragment was identified on BH3. Please refer to the above report for more details.

Second Investigations

A total of 26 soil samples (including asbestos samples, one intra-laboratory and one inter-laboratory quality control field duplicate samples) were collected from eight borehole locations on site and submitted for analysis using NATA accredited laboratory methods for chemical analysis of the COCs. Concentrations of all potential COCs within soil samples analysed were either below the Laboratory Limit of Reporting (LOR or EQL) or below the adopted human health risk and ecological criterial. Moreover, asbestos was NOT detected in the surface/shallow fill sample within any of the collected samples.

This report must be read in conjunction with the attached "Important Information about your Environmental Report" in **Appendix C**. Attention is drawn to the limitations inherent in site investigations and the importance of verifying the subsurface conditions inferred herein.

Objectives of Remediation

The RAP should:

- set remediation goals that ensure the remediated site will be suitable for the proposed use and will pose no unacceptable risk to human health or to the environment
- document in detail all procedures and plans to be implemented to reduce risks to acceptable levels for the proposed site use
- establish the environmental safeguards required to complete the remediation in an environmentally acceptable manner
- identify and include proof of the necessary approvals and licences required by regulatory authorities.

- Once remedial work is complete, a report should be prepared detailing the site work conducted, and regulatory decisions made.

2. SCOPE OF WORK

The key objectives of the RAP are to:

- Summarise the current contamination status of the site.
- Discuss remediation options and reasons for the selection of the preferred strategy.
- Provide a detailed description of the preferred remediation strategy.
- Determine clean up criteria for the site.
- Document validation procedures to confirm that the site has been rendered suitable for the proposed use.
- Site controls, occupational health and safety, and environmental measures required to be implemented during remediation/management works.

This RAP has been prepared in general accordance with requirements outlined in NSW OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

3. SITE IDENTIFICATION

Site details are summarised in the Table 1 below:

Table 1 - Site Details

Location	21 Copeland Street, Kingswood NSW 2747
Cadastral Description	Lot X DP76600
Land Area	~5.25 ha
Proposed Development Area	~950 m ²
Local Government Authority	Penrith City Council
Current Zoning	R2 – Low Density Residential
Adjoining Land Uses	North – residential properties across Gascoigne Street. East – Industrial properties (Rex Andrews Heavy Haulage) South – commercial or industrial properties (Hungry Jacks, warehouses, pub/hotel) West – residential properties across The Northern Road.
Site Location	Figure 1
Site Layout	Figure 2

4. SITE HISTORY

Based on the desktop study, it appears that the site area was occupied by currently present school buildings since establishment in 1970. Some minor refurbishments and additions were noted for the site since that time. Review of historical business listings identified no significant previous uses at the site that may potentially cause contamination. The PSI search conducted did not identify any major sources of potentially contaminating activities on the site. However, in the neighbouring premises, some industrial related activities were confirmed based on the information provided from historical business directories. For detailed site history information please refer to our previous report Ref: 5410-2.

Review of Historical Aerial Photographs

A review of historical aerial photographs from 1943 to 2019 was undertaken as part of the previous investigations. For more information please see Table 2 below.

Historical Business Directories

The school is the only Point of Interest (POI) on this site since 1970.

The review of historical business listings between 1950, 1961, 1970, 1892, 1986, 1991 for the neighbouring properties reveal the information below:

- 1950: NA
- 1961: Groceries & General Storekeepers
- 1970: St. Dominic's College (Boys), Parker St. Penrith
- 1982: Motor Panel beaters/Spray Painter, Motor Garages
- 1986: Mainly Motor Panel beaters/Spray Painter, Motor Garages and Concrete Mixer/supplier
- 1991: Motor Garage and service Stations, Fuel injection services, auto-electrician and general motor services

Review of the historical business listings for Dry Cleaners, Motor Garages & Service Stations (1948-1993) revealed the information below:

- East: Motor Garages & Service Stations.

Table 2 – Historical Aerial Photographs Review

Photograph Details	Onsite Uses	Offsite Uses
Date: 1943	PARK + trees + vegetation	Scattered building structures at the eastern side are existed.
Date: 1955	Nothing changed from the 1943 aerial photograph, less vegetation + one structure appeared on site (west)	Further developments at the western side. More established dirt roads occurrence.
Date: 1961	Nothing changed from the 1955 aerial photograph, except the eastern side of the site was cut, compacted with zero vegetation in compacted area.	Further developments at the western side. More established dirt/paved roads occurrence. No other significant changes.
Date: 1965	Nothing changed from the 1961 aerial photograph, a couple of more building structure added to west.	Further developments at the southern side. More established dirt/paved roads occurrence. No other significant changes.
Date: 1970	School/college established plus a new structure Nothing changed from the 1965 aerial photograph.	Further developments at the southern side. More established dirt/paved roads occurrence. development at the southern side is starting to expand. No other significant changes.
Date: 1982	School/ college structure (3-6 buildings & a car-park area) appeared at the site. Significant de-vegetation occurred (sport field) No other discernible changes noted at this site.	Residential to the north, Further non-residential development was noted for the neighbouring properties esp. at west and south. More Neighbouring properties to the west appeared. No other significant changes.
Date: 1991	School/ college No other discernible changes noted at this site from the 1982 photograph.	Mainly Residential and commercial Further commercial development was noted for the neighbouring properties esp. at west and south. More earthwork/development to the west appeared. No other significant changes.
Date: 2000	School/ college No significant changes from the 1991 aerial photograph. Metal covered concrete sitting area appeared to the south.	Mixed industrial (south) / Residential (north) No other discernible changes noted at this site from the 1991 photograph. North and west = mainly residential, South and east = mainly industrial
Date: 2007	School/ college No significant changes from the 2000 aerial photograph. Classroom building right near to the metal covered concrete sitting area appeared to the south.	No other discernible changes noted at this site from the 2000 photograph. North and west = mainly residential, South and east = mainly industrial
Date: 2014-18	School/ college No significant changes from the 2007 aerial photograph.	No other discernible changes noted at this site from the 2007 photograph.
Date: 2019	School/college No other discernible changes noted at this site from the 2018 photograph.	No other discernible changes noted at this site from the 2018 photograph.

5. SITE CONDITION

At the time of the initial inspection the site was occupied by Saint Dominic's School. School Buildings located at the western side of the site and the large grassland/sport field located at the east. The proposed future work area is under the current structures (demountable metal clad classrooms and area over the concrete sitting area) at the southern side-Copeland street. Most of the pavement appeared to be in good condition with no major cracks noted. Landscaping was noted predominantly along the site's boundary which was overgrown with various trees and vegetation. The site overall was noted to be relatively flat, except on the southern part near to fence (Copeland St.). No evidence of disturbed coloured or stained soil was observed. No trace of any potential fill (potential source of contamination) materials was noted to have been present at the time of inspection. The public school is still operational since established in 1970. Site features observed are presented on Figure 2.

The geology underlying the site, as described in the Geological Survey of NSW (1991) – Penrith 1:100,000 Geological Map Series Sheet 9030 consists of Triassic-aged Bringelly Shale (Rwb) subgroup which comprises shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff. The site was noted to be situated at an elevation of between 55 and 57 metres above Australian Height Datum (mAHD). Groundwater was not observed in the boreholes during auger drilling to depths of 1.3m to 2.0m bgl. No significant sign of seepage was observed on the surface. The soil stratigraphy in the locations investigated on site as part of this assessment was identified as comprising:

- Topsoil / Fill: Clayey SAND (topsoil), sandy CLAY, silty CLAY, down to a maximum depth of about 2.1 metres below ground level (bgl); overlaying.
- Residual Natural: sandy silty CLAY / shaley CLAY, typically encountered from between 0.8 and 2.1 m bgl;
- Bedrock: Shale, low to extremely weathered, typically encountered from 4.1 to 6.1m bgl

Based on the soil, geological and hydrogeological review, the site is expected to be situated over an area with up to 2.1 m of fill in places overlaying residual clay type soils, which in turn overlay a relatively shallow shale bedrock. The depth to groundwater is unknown, however based on the available information it is expected to be encountered at greater depths most likely within the underlying bedrock lenses/fractures.

6. BASIS FOR REMEDIATION CRITERIA

The National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013 (NEPM 2013) *Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater* is a document which outlines a framework for the adaptation of investigation and screening levels for soil, soil vapour and groundwater. The framework is based on human health, ecological and groundwater investigation and screening levels outlined in conjunction with specific guidance notes for selected COCs. The investigation levels and screening levels are the concentrations of COCs above which further investigation and evaluation would be required with potential subsequent remedial works necessitated. The guidelines include:

- Health Investigation Levels (HILs) –The HILs are conservatively derived and are designed to be protective of human health under the majority of circumstances of contaminants, soil types and human susceptibilities. are generic and apply across Australia to all soil types generally to a depth of 3 m below surface. They are derived for four generic land-use categories as follows:
 1. **HIL A** Standard residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), includes children's day care centres, preschools and primary schools.
 2. **HIL B** Residential with minimal opportunities for soil access, includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.
 3. **HIL C** Includes developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. Does NOT include undeveloped public open space which should be subject to a site-specific assessment where appropriate.

4. **HIL D** Commercial/industrial includes premises such as shops, offices, factories and industrial sites.

- Health Screening Levels (**HSL A, B, C & D**) – for petroleum hydrocarbons (BTEXN, TRH C₆-C₄₀) depend on physicochemical properties of soil as it affects hydrocarbon vapour movement in soil and the characteristics of building structures. They apply to different soil types, land uses and depths below surface to >4 m and have a range of limitations.
- Ecological Investigation Levels (**EILs**) – for selected common metal in soil plus arsenic and organic substances (naphthalene and DDT), applicable for assessing ecological risks (i.e. to terrestrial ecosystems), depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2m of soil.
- Ecological Screening Levels (**ESLs**) – for petroleum hydrocarbon (TRHs fractions F₁ – F₄, BTEX and B(a)P) materials broadly apply to coarse- and fine-grained soils and various land uses. They are applicable to the top 3m of soil (a: National parks and areas with high ecological value, b: Urban residential and public open space and c: Commercial and industrial).
- Petroleum hydrocarbon '**management limits**' are limited to petroleum hydrocarbon compounds (TRHs) (a: Residential, parkland and public open space & b: Commercial and industrial). They are maximum values that should remain in a site following evaluation of human health and ecological risks and risks to groundwater resources and apply to all soil depths based on site-specific considerations. These limits are to consider the formation of phase separated hydrocarbons, fire and explosion risks, damage to buried infrastructure and aesthetics

Application of these investigation and screening levels form the basis of this indicative soil risk assessment.

Due to current and proposed on-going site use the following EILs, ESLs, HILs, HSLs and Management Limits were deemed applicable as part of the indicative human health and ecological risk assessment:

- HILs for Residential land use garden/accessible soil (HIL A);
- HSLs for low-high density Residential land use (HSL A-B);
- EILs/ESLS for protection of terrestrial ecosystem;
- Management Limits for Residential and industrial land use.

Application of these investigation and screening levels form the basis of this indicative soil risk assessment.

Due to current and proposed on-going site use the following EILs, ESLs, HILs and HSLs were deemed applicable (to be conservative) as part of the indicative human health and ecological risk assessment:

- HILs for Residential land use garden/accessible soil (HIL A);
- HSLs for low-high density Residential land use (HSL A-B);
- EILs/ESLS for protection of terrestrial ecosystem;

Also, the following guidelines have been considered during the preparation of this report:

- Protection of the Environment Operations Act (1997)
- Work Health and Safety Act and Regulations (2011 & 2017)
- Protection of the Environment Operations (Waste) Regulation (2005)
- NSW EPA (2014) Waste Classification Guidelines: Part A – Classifying Waste.
- State Environmental Planning Policy No.55 (1998) – Remediation of Land (SEPP 55)
- NSW EPA (1995) Contaminated Sites: Sampling Design Guidelines. NSW EPA, Sydney.
- NEPC (1999) National Environment Protection (Assessment of Site Contamination) Measure, Schedule A and Schedules B (1)-B (9). National Environment Protection Council, Adelaide, as amended in April 2013 [referred to herein as NEPM (2013)].

- NSW OEH (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites. NSW OEH, Sydney.

7. CONCEPTUAL SITE MODEL (CSM)

A Conceptual Site Model (CSM) summarises the expected site conditions at and surrounding the Site, as they relate to Site contamination and potential risks to human health and the environment. In summary, the CSM for the Site identified a range of potentially contaminated media and exposure pathways.

CSM was developed based on the findings of the background information review, field observations, COC and Area of Environmental Concern (AEC). The CSM involves the assessment of environmental/human health risk based on a contaminant (source) – pathway – receptor methodology. Where there is a complete linkage between the source-pathway-receptor, then there is potential for a risk to exist. Where the linkage is not present, there is no potential for a risk to exist. The SPR for the conceptual site model is summarised in **Table 3**.

Table 3 – Conceptual Site Model (CSM)

Conceptual Site Model (CSM)	
Source of Contaminant	A substance that has the potential to cause harm to a receptor. In a broader sense, sources can include particular ground conditions, for example, redundant footings within the ground, which have the potential to impact on redevelopment proposals. Other sources include former industrial activities, contaminated soil and groundwater, vapours derived from these sources, buried waste and from historical use of substances such as pesticides and herbicides
<i>This Site (BH1, BH3 and the area under the demountable metal clad classrooms)</i>	<i>Potential presence of uncontrolled fill material beneath the site.</i> + <i>Hazardous building materials and fibre cement fragments if found on site/buildings.</i> + <i>Internal and external painted surfaces in relation to any building structure on site)</i>
Exposure Pathways	The route by which the source is brought into contact with the receptor. This can include the transport of contamination via water and subsequent ingestion, inhalation of dust and vapour and through dermal contact. The exposure to a contaminant may consist of one or more pathways, but in general, a single pathway will dominate.
<i>This Site (BH1, BH3 and the area under the demountable metal clad classrooms)</i>	<i>direct and indirect exposure via dermal</i> + <i>oral contact</i> + <i>inhalation of dust particles.</i> <i>(excavation of BH1/BH3 + demolition of existing buildings and slab)</i>
Potential Receptors	Human beings, other living organisms, physical systems and built structures that could be affected by the source. A receptor will only be affected if a pathway from the source to the receptor is complete and a pollutant linkage established. Groundwater and surface water systems can be considered as receptors in their own right as their quality is regulated by statutory bodies, as well as being pathways for contaminant migration to other receptors.
<i>This Site (BH1, BH3 and the area under the demountable metal clad classrooms)</i>	<i>site workers during construction</i> + <i>Future site occupants and/or workers during future works</i>

Potential Risk

Risk will be assessed by using the source, pathway and receptor model. A risk can only be present for a specific scenario if there is a complete, source, pathway and receptor linkage onsite. That is, if there is a source of contamination (if existed) in excess of the nominated investigation level and if there is a complete pathway of exposure to that contamination by a receptor, then there is a potential risk. The magnitude of risk depends on the consequence of the exposure.

Based on the conceptual site model (CSM) there considered to be a current low potential risk to human health and ecological receptors due to the historical uses across the site.

8. REMEDIAL ACTION PLAN

Remediation Goals

The remediation goal for the site is to provide a remedial action plan that removes unacceptable concentration levels of contaminants in soil and ensures that the site is suitable for the proposed land use.

Discussion of the Extent of Remediation Required

The extent of remediation required is currently limited to the soil in 2.5m x 2.5m area centred on BH1, BH3 to the depth of fill materials. During the second round of investigations (report#: 5410-2), no other asbestos fragments nor Other contaminants were identified onsite; however, given the limited borehole sampling of investigation, the presence of asbestos containing material (ACM) within fill across the site area cannot be excluded. The area under the demountable metal clad classrooms, will require further intrusive sampling to delineate the potential contaminants impact if present. This work should be conducted after the concrete slab has been removed which will allow test pitting leading to more adequate subsurface characterisation.

Discussion of Possible Remedial Options

The NEPM (2013) provides the preferred hierarchy of options for site clean-up and/or management, which is outlined as follows:

- on-site treatment of the contamination, so that it is destroyed, or the associated risk is reduced to an acceptable level; and
- off-site treatment, so that the contamination is destroyed, or the associated risk is reduced to an acceptable level, after which soil is returned to the site; or,

if the above are not practicable:

- consolidation and isolation of the soil onsite by containment with a properly designed barrier; and
- removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material;

or,

- where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy should be adopted.

The remediation option chosen for the remediation of known contamination within the site is as follows:

- Removal of potential contaminated soil in a 2.5m x 2.5m area centred on BH1 to the fill material depth to an approved waste disposal facility.
- Removal of potential contaminated soil in a 2.5m x 2.5m area centred on BH3 to the fill material depth to an approved waste disposal facility.
- The area under the demountable metal clad classrooms, will require further intrusive sampling to determine the extent of potential contaminants if present. Following the removal of the concrete slab, the fill materials to be separately stockpiled on site and also tested and analysed for waste classification purposes.

It is important to note that the fill materials from asbestos and lead impacted areas (BH1, BH3) will be excavated and then isolated in two separate stockpiles from all other fill materials below the concrete slab/ metal clad classrooms.

Rationale for the selection of recommended remedial option, in accordance with the preferred hierarchy of site remediation and/or management set out in Key Principles for Remediation and Management of Contaminated Sites of the ASC NEPM Toolbox. A validation plan which includes proposed testing to validate the site after remediation, including SAQP as below.

9. SAMPLING, ANALYTICAL AND QUALITY PLAN

Data quality objectives (DQOs) for validation activities outlined below were developed in general accordance with NEPM (2013):

Data Quality Objectives

Table 4: Data Quality Objectives (DQO)

#	Step	DQO
1	Step 1: State the problem	The areas identified within the previous investigations that require remediation include: • BH3 • BH1 • Area under sitting area /classrooms
2	Step 2: Identify the decisions/goal of the study	The remedial goal pending further analysis is to remediate areas containing unacceptable levels of contamination in soil to levels acceptable for the proposed commercial/industrial land use. The decisions are: • Is the data suitable for assessing whether the site is suitable for the proposed land use? • Is the site suitable for the proposed land use?
3	Step 3: Identify information inputs	• Previous investigation results, including site history, field observations and laboratory results. • Validation data, including field observations and laboratory results. • Remediation acceptance criteria • Applicable guidelines
4	Step 4: Define the study boundaries	Site boundaries and remediation areas are defined in Appendix A. Vertical boundaries are defined as a minimum of the ground surface to a maximum depth of the fill material (a maximum depth of about 2.1 metres)
5	Step 5: Develop the analytical approach or decision rule	The decision rule to be made is: are the soils at the site chemically suitable for the proposed development. YES, if...

		The analytical results are below the adopted criteria. If the answer is NO... Further remediation works will be required.
6	Step 6: Specify the performance or acceptance criteria	Remediation acceptance criteria are provided in Section 8. A 95% confidence level is adopted for the laboratory results. ACM not present.
7	Step 7: Optimise the design for obtaining data	Validation sampling for BH1/BH3 is shown in, Appendix A. The sampling plan for the impacted fill (under the concrete slab-sitting area/classroom) will need to be assessed based on the outcome of further characterisation data after demolition/during delineation and in accordance with relevant guidelines.

Fieldwork QA/QC and Methodology

Table 5: Field Work QA/QC

#	Item	Methodology
1	Soil sampling procedures	Samples will be collected using a decontaminated stainless-steel trowel, hand auger, or placed directly into laboratory supplied containers with Teflon lined lids using fresh pair of nitrile gloves. The containers will be labelled with sample identification, sample depth, date, project number. Samples for asbestos analysis may comprise: • Approximately 40g sample in ziplocked bag for asbestos identification • Approximately 500mL sample in ziplocked bag for asbestos fines analysis • Approximately 10L sample in a sealed plastic bag for ACM/fibrous asbestos analysis
2	Decontamination procedures	Non-disposable sampling equipment will be decontaminated between sampling by scrubbing with a brush, washing in Decon 90 solution and rinsing with water.
3	Sample handling and preservation procedures	Samples will be placed into ice-chilled esky and transported to a NATA accredited laboratory under chain of custody analysis.
4	Field calibration and screening protocol	Field screening will be visual and olfactory observations of excavations (including test pits) for COPC (such as hydrocarbon odours / fibre cement fragments).
5	Duplicates	Duplicates will be undertaken at a rate of 5% for intralaboratory and interlaboratory duplicates, respectively.
6	Rinsate blank	Rinsate blank will be prepared to check the effectiveness of decontamination procedure of non-disposable equipment.
7	Trip blank/spike	NR

Laboratory QA/QC and Data Quality Indicators

Samples will be analysed in NATA accredited laboratory(s) which will provide analysis in accordance with NEPM (2013). The data quality will be checked against the acceptance targets for: method blank, laboratory duplicates, matrix spikes, laboratory control samples, surrogates.

Data quality indicators (DQIs) for blanks, duplicates, and spikes are provided in Table 6 below.

Table 6: Laboratory QA/QC

#	QA/QC Sample	Target
1	Duplicate	Relative percentage difference (RPD) within 50% for soil
2	Spikes	70%-130% for inorganics/metals 60%-140% for organics Or as determine by laboratory
3	Blanks	Not detected above LOR/TEQ

10. VALIDATION PLAN

Validation of Excavation

Samples are required to be collected from the walls and base of the excavations at approximate centres of 8 – 10m lineal lengths. A minimum of four wall and one base sample shall be taken from each excavation with sample numbers increased accordingly for excavations greater than 8 – 10m lengths. Any fibre cement fragments encountered must be recorded and the unexpected finds protocol followed.

Collected soil samples shall be analysed for contaminants of concern which may include TRHs, BTEXN, PAHs, Heavy Metals, and Asbestos. QA/QC samples shall be collected and analysed as described in Section 9.

If validation samples exceed the nominated remediation acceptance criteria (outlined in Section 6), further excavation will be undertaken, and additional validation samples collected. If further excavation is not deemed practical, additional remediation methodology will be considered.

Confirmation of Allowable Material for Import on to Site

It is important to note that materials transported onto site will either need to meet the definition of virgin excavated natural material, or a resource recovery order and resource recovery exemption. In addition, materials imported onto the site should be adequately assessed as being appropriate for the final use of the site, including QA/QC evaluation of any sampling and analysis for material brought to site

VENM validation samples shall be collected at a frequency of one sample per 25m³ of soil, with a minimum of three samples. This sampling frequency may be adjusted, depending on the stockpile volume and the homogeneity of the stockpile material. The sampling density may be relaxed for large volumes (>250m³) of homogenous materials from the same source, where the average concentration has been established to a 95% Upper Confidence Limit (UCL). The soil samples shall be submitted to a NATA accredited laboratory for the following minimum analysis: TRHs, PAHs, BTEXN, OCPs, PCBs, heavy metals, and asbestos (presence/absence).

The Remediation Contractor will be responsible for tracking of materials that are imported to the site. Copies of dockets pertaining to imported fill will be retained by the contractor to confirm the source, type and quantities of the material. In the similar words, imported material must be accompanied by a signed letter certificate declaring that the imported material is compliant with VENM characterisation as defined in POEO Act (1997) and the NSW EPA (2014) Waste Classification Guideline.

Validation Report

Following completion of remedial activities, a validation report shall be prepared in general accordance with the NSW OEH (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites and NEPM (2013). The validation report shall provide elements required in the above guidelines, including (but not limited to):

- Summary of remediation activities
- Unexpected finds management
- Validation sampling and analysis
- Material tracking and waste disposal information, including waste disposal dockets

- Ongoing site monitoring requirement
- Statement of site suitability

Unexpected Finds Protocol (UFC)

Unexpected finds of potential contamination may be identified by visual (appearance or staining) and/or olfactory (odour) evidence during earthworks. Potential unexpected finds which could be reasonably encountered based on site history and previous investigations at the site include (but not limited to):

- Ground conditions encountered that differ from the expected conditions
- Buried infrastructure such as underground storage tanks and associated pipe work.
- Groundwater that exhibits hydrocarbon (or oily) sheen or odour.
- Presence of asbestos containing materials.
- Olfactory evidence of contamination such as chemical odour, hydrocarbon odour, sulfur (rotten egg) odour, acidic odour, ammonia odour, caustic odour, solvent odour).
- Soil staining.
- Significant presence of anthropogenic materials.

Procedure in the Event of an Unexpected Find

Should unexpected finds of contamination or potential contamination be found onsite; the following procedure shall be adopted:

1. Stop work as soon as it is safe to do so and move to a designated meeting point.
2. Assess the potential risk to human health posed by the unexpected find and assess if evacuation needs to be conducted or emergency services need to be contacted.
3. Delineate an exclusion zone around the unexpected find with appropriate barrier and signage.
4. Contact a suitably qualified environmental consultant, who should provide advice for:
 - Immediate management controls to minimise potential immediate health or environmental risk;
 - What further assessment and/or remediation works required and how such work should be conducted;
 - Requirement for an updated RAP (if required) and associated validation works; and
 - Requirement of reporting to regulatory bodies (Council).
5. Works shall not recommence in the area of the unexpected find until an environmental consultant provides advice that the unexpected find has been adequately managed/remediated.
6. Assessment and/or validation of the unexpected find shall be provided in the Validation Report for the site.

The Remediation Contractor shall prepare a list of unexpected finds.

Contingency Plan

Contingency Plan for the remediation is as follows.

Table 7: Contingency Plan

#	Item	Contingency
1	Contaminated groundwater being encountered during additional assessment	A suitably qualified environmental consultant shall consider a risk assessment and/or provide an updated remedial strategy, which may require an update of this RAP. A strategy may include retain onsite, followed by treatment, and disposal or reinjection under a permit.
2	Underground Storage Tank (UST) or fuel infrastructure	Enact Unexpected Finds Protocol in Section 8.
3	ACM finds within fill material across the whole site.	Enact Unexpected Finds protocol in Section 8. Engagement of a Class A Licenced Asbestos Assessor. An update to this RAP.

On other notes, Possible incidents relating to remediation activities at the Site include but are not limited to:

- Filling of excavations with water due to rainfall
- Collapse of excavation walls
- Unauthorised entry to the Site and/or excavations
- Mobilisation of contaminated soil from the soil remediation area
- Ingestion of contaminated soils
- Inhalation of contaminated dust

An induction process for site personnel involved in the remediation works that includes relevant information on environmental and safety requirements and ensures that all site personnel are familiar with the site emergency procedures is required.

Site Management

The Remediation Contractor will be responsible for site management during remediation works, in accordance with their contractual arrangements with the Client. The item below should be considered:

- Interim site management plan before remediation, including fencing, erection of warning signs, stormwater diversion, etc.
- Identification of regulatory compliance requirements such as licences and approvals or financial assurance
- Names and phone numbers of appropriate personnel to contact during remediation

The following stakeholders are expected to be involved in the remediation associated with the proposed development.

Table 8: Project Stakeholders

item	Stakeholder Role	Organisation
1	Site owner	St. Dominic's College
2	Regulator	Penrith City Council
3	Project Manager	TBA
4	Design	PMDL
5	Construction / Remediation Contractor	TBA
6	Environmental Consultant	AssetGeoEnviro

Construction Environmental Management Plan (CEMP)

A Construction Environmental Management Plan (CEMP) to be prepared to avoid or mitigate potential adverse environmental impacts on site, surrounding human and environmental receptors. Moreover, to ensure that all works are conducted in accordance with regulatory requirements. The CEMP should provide the details on management requirements and procedures to be implemented during construction / excavation / development phase.

The Remediation Contractor shall prepare a site-specific construction environmental management plan (CEMP), which shall address the following issues at the minimum:

- Soil management
- Stockpile management
- Management of asbestos related works
- Material tracking
- Stormwater management
- Dust control
- Air monitoring
- Noise management
- Odour management
- Waste management
- Incident response
- Licences and approvals
- Contact personnel

Health and Safety Plans

The Remediation Contractor shall prepare a site-specific occupational health and safety plan for the proposed work. The occupational health and safety plan shall include safe work method statements for each activity at the site. Contractors engaged by the Remediation Contractor shall also prepare relevant safe work method statements for the work undertaken at the site.

Licences and Approvals

Other licences and approval requirements shall be detailed in the CEMP and these will include:

- Notification to Council in accordance with the requirements of SEPP 55
- SafeWork notification for asbestos works should they be required
- Consultation with neighbours

Asbestos removal work shall be undertaken in accordance with Safe Work Australia (2011a) How to Manage and Control Asbestos in the Workplace and Safe Work Australia (2011b) How to Safely Remove Asbestos Code of Practice.

Based on the delineation of the ACM impacted fill material in the vicinity of BH3, A Class licenced asbestos removalist may be required, and this RAP updated to be updates accordingly. A licenced asbestos assessor may be required to conduct:

- Air monitoring
- Clearance inspections
- Issuing clearance certificates
- Implement appropriate environmental controls

Notification of asbestos removal work shall be provided to SafeWork NSW at least five working days before licenced asbestos removal work is commenced.

Air Monitoring

Air monitoring shall be undertaken on a daily basis when there is intrusive work of asbestos impacted material and if asbestos impacted material (such as stockpile) is being exposed. The locations of air monitoring will be determined by a licenced asbestos assessor, in consideration of active work areas, weather conditions and adjoining residential areas. Air monitoring shall be undertaken in accordance with the NOHSC (2005) Guidance Note on the Membrane Filter Method of Estimating Airborne Asbestos Fibres, 2nd edition, NOHSC:3003 (2005). Proposed action levels for monitoring are as follows.

Table 9: Proposed Action Level for Air Monitoring

Action level (fibres/mL)	Action Required
LESS than 0.01	existing control measures to be continued
0.01 < Between < 0.02	Review control measures, investigate cause of elevated reading, implement revised control measures
Equal/MORE than 0.02	work must be stopped. Licenced asbestos removalist shall immediately notify SafeWork NSW. Investigate cause of elevated reading, review control measures, and implement revised control measures as required.

Air monitoring requirement should be determined by a licensed asbestos assessor. *AssetGeoEnviro's* HAZ-MAT department can provide this service.

Long-term site management plan outline

Based on the current data and the remedial strategy recommended in this RAP, it is not expected that a Long-Term Environmental Management Plan (LTEMP) will be required following completion of remedial activities.

11. WASTE MANAGEMENT

Waste generators (client) must chemically assess their waste in accordance with Step 5 of the Waste Classification Guidelines to determine the waste's classification where it has not been classified under Steps 1–4 of the Waste classification Guidelines. Any materials proposed to be excavated and disposed offsite during proposed remediation/development works must be classified in accordance with the NSW EPA (2014) Waste Classification Guidelines, prior to offsite disposal to an appropriately licenced waste management / landfill facility. If the waste generator does not undertake chemical assessment of the waste, the waste must be classified as hazardous waste. Waste classified as hazardous waste cannot be disposed of in NSW and must be treated prior to disposal.

Description of material handling and tracking plan

Material movement within, from and to the site shall be adequately tracked by the Remediation Contractor. At a minimum, the following information is required (where applicable):

- Date
- Source of material (given the size of the site, the site may be divided into grids to provide source location of the material)
- Material volume
- Waste classification reference and waste classification (if applicable)
- Placement location (temporary for stockpile and permanent; given the size of the site, the site may be divided into grids to provide placement location of the material)
- Offsite disposal location
- Waste transporter
- Waste dockets
- VENM certificates

Copies of the waste disposal dockets, and material tracking data shall be provided for inclusion into the Validation Report. Site fill soils have already been classified in accordance with NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying Waste in the report ref: 5410-1.

Any soil not classified within the above reports that is required to be disposed of offsite shall be assessed in accordance with NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying Waste. Waste classification shall be conducted by a suitably qualified environmental consultant prior to offsite disposal. This includes soils classified in line with findings of the current investigation which may need reclassification if ACM is found in fill soils across the site area.

As it mentioned earlier above, consideration should be given to the separation of all identified potentially impacted fill materials (BH1, BH3, and the area under the sitting area/classes) from the remainder of excavated materials across the site during the proposed development works, for further waste classification purposes.

This assessment shall include:

- A visual observation of the stockpile or in-situ observation of the test pits
- Collection and laboratory analysis of representative samples of the stockpiled material or the test pit.

Stockpiles shall be given a stockpile identifier in accordance to the Remediation Contractor's stockpile tracking system.

As mentioned earlier in this report, soil samples shall be collected at a frequency of one sample per 25m³ of soil, with a minimum of three samples. This sampling frequency may be adjusted, depending on the stockpile volume and the homogeneity of the stockpile material. The soil samples shall be submitted to a NATA accredited laboratory for the following minimum analysis: TRHs, PAHs, BTEXN, OCPs, PCBs, heavy metals, and asbestos (presence/absence).

Soil profiles of test pits must be logged describing the encountered soils and any observed inclusions.

12. CONCLUSION

In summary, *AssetGeoEnviro* considers that the site can be made suitable for the proposed use if the remedial action plan is implemented.

13. LIMITATIONS

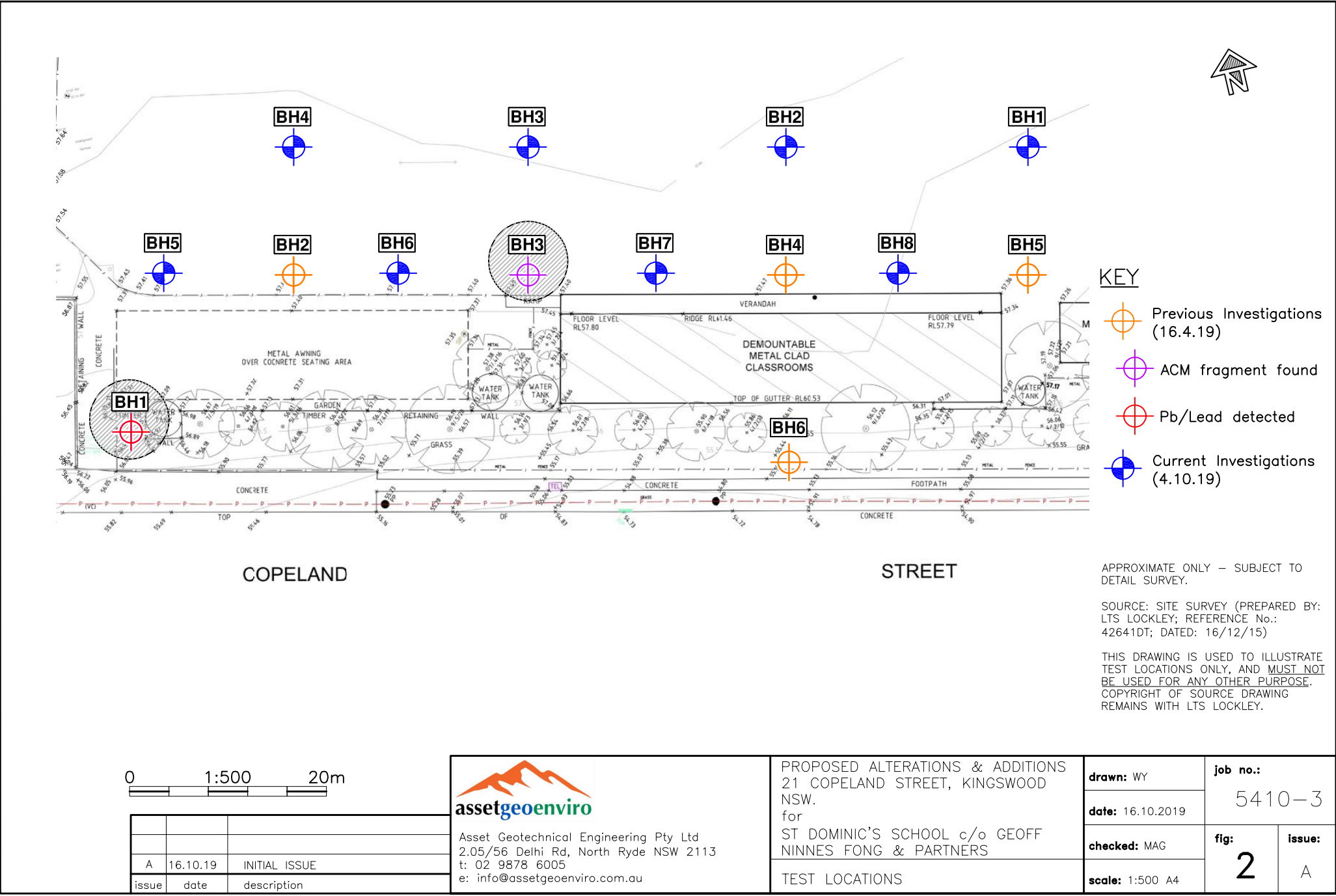
This report has been prepared by AssetGeoEnviro in response to and subject to the following limitations:

- The specific instructions received from Geoff Ninnies Fong & Partners.
- The Proposal document (AssetGeoEnviro ref: 5626-P1) dated 5 July 2019 including the Terms of Agreement for Professional Services contained within.
- The report has been prepared to a specific scope of works as set out in Section 2.2 of this report.
- May not be relied upon by any third party not named in this report for any purpose except with the prior written consent of AssetGeoEnviro (which may or may not be given at the discretion of AssetGeoEnviro).
- This report comprises the formal report, documentation sections, tables, figures and appendices as referred to in the index to this report and must not be released to any third party or copied in part without all the material included in this report for any reason.
- The report only relates to the site referred to the site located at 21 COPELAND STREET, KINGSWOOD NSW which was the subject of this investigation ("the site") and further described in **Appendix A**.
- The report relates to the site as at the specified date of investigation as conditions may change thereafter due to natural processes and/or site activities.
- It is crucial to mention that these results reflect the nature of soil in the investigated areas ONLY (sampling locations/Boreholes). Hence, the presence of any Asbestos Containing Materials (ACMs) or any other type of contaminants including Lead in other part of the site which were not investigated/sampled was UNKNOWN until its investigated during RAP work.
- No warranty or guarantee is made in regard to any other use than as specified in the scope of works and the Proposal document.
- This report does not comment on any regulatory obligations based on the findings. This report relates only to the objectives stated and does not relate to any other work conducted for the Client.
- This report and details for the proposed development should be submitted to relevant regulatory authorities that have an interest in the property (i.e. Cumberland Council) or are responsible for services that may be within or adjacent to the site (e.g. Sydney Water), for their review.
- Asset accepts no liability where our recommendations are not followed or are only partially followed. The document "Important Information about your Environmental Report" in **Appendix C** provides additional information about the uses and limitations of this report.
- The absence of any identified hazardous or toxic materials on the site should not be interpreted as a guarantee that such materials do not exist on the site.
- In addition to the limitations inherent in site investigations (refer to **Appendix C**), it must be pointed out that the recommendations in this report are based on assessed subsurface conditions from limited investigations. To confirm the assessed soil and/or groundwater properties beneath the site, further investigation would be required involving higher sampling density, deeper exploration drilling depth and installation of groundwater monitoring wells and should be carried out if the scale and provisions / requirements of the development warrants, or if any of the properties are critical to the design, construction or performance of the development.

APPENDIX A

Figure 1 – Site Locality
Figure 2 – Test Locations

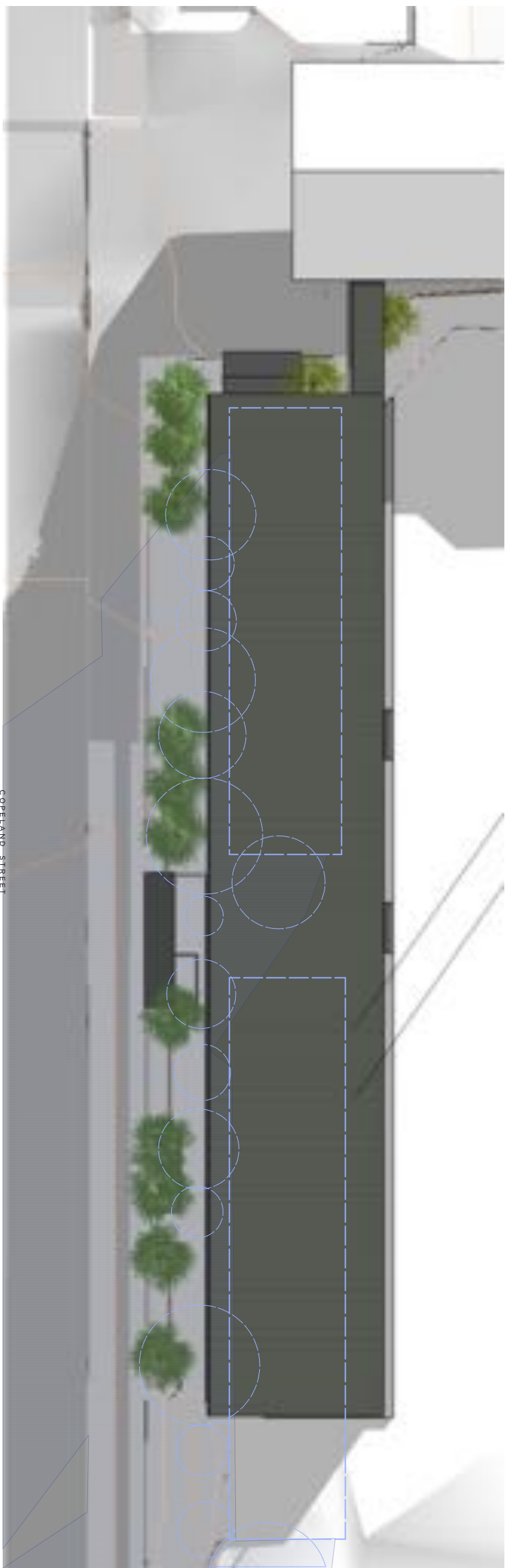




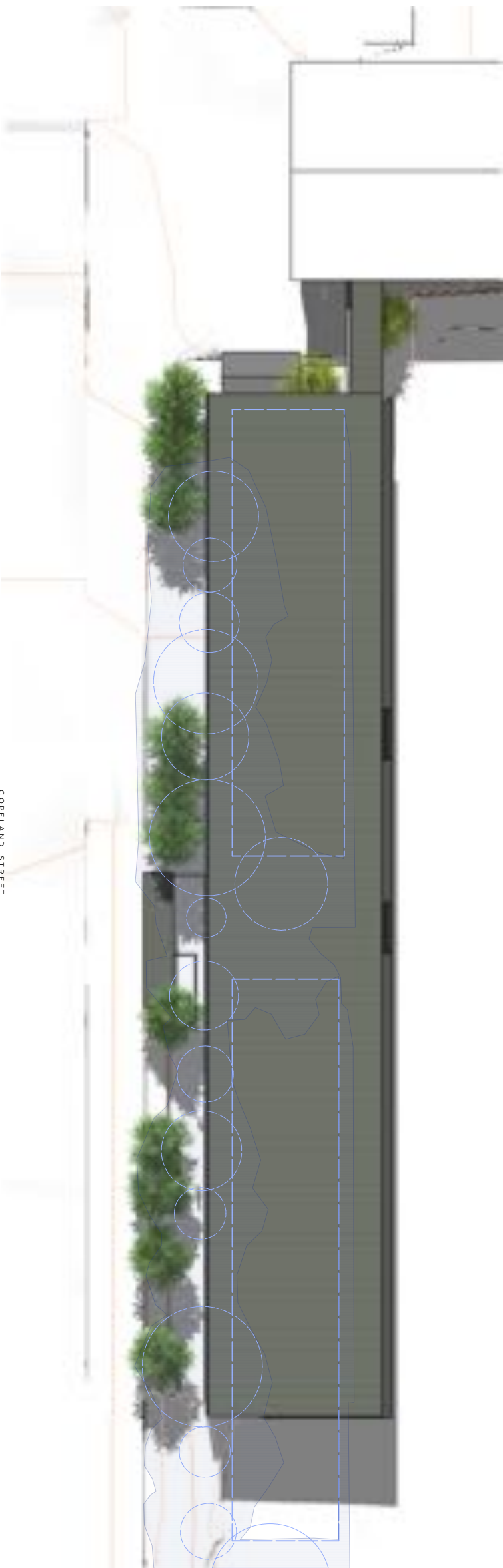
APPENDIX B

Plans for Proposed Development

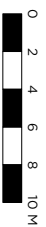




1 PLAN - Shadow Study [Jun 21, 3pm]
Scale: 1:200



2 PLAN - Shadow Study [Dec 22, 3pm]
Scale: 1:200



2 PLAN - SH
Scale: 1:200



LEGEND:

- Proposed Shadow
- Proposed for demolition Block E
(Demountables, COLA & Trees)
- Existing Block E Shadows
(Cast by Demountables, COLA & Trees)

pmdl.com.au

NEW NOMINAL ARCHITECTS: ANDREW PENDER 5317 DAVID MORRIS 5665 PETER DOODRILL 5154
PMO ARCHITECTURE + DESIGN INC (CLIENT)
PMO ARCHITECTURE + DESIGN PTY LTD ABN 56 092 981 317

St. Dominic's College Works-Block

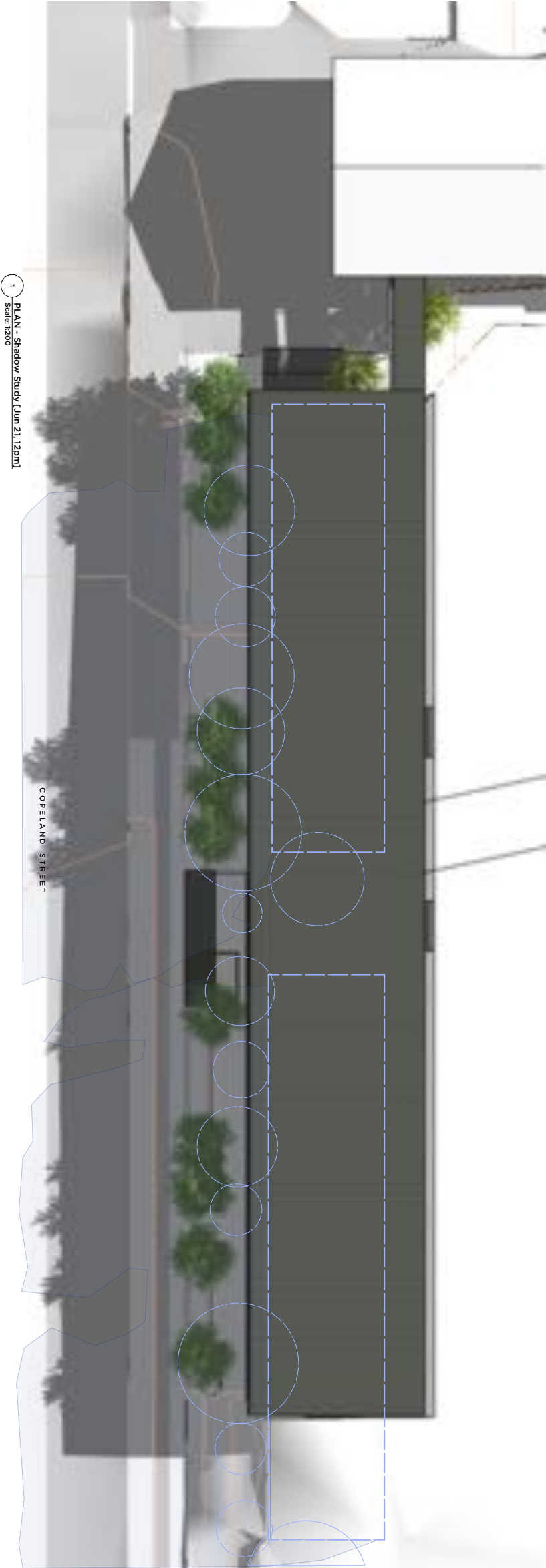
St. Dominic's College

Block E - Shadow Diagram 03

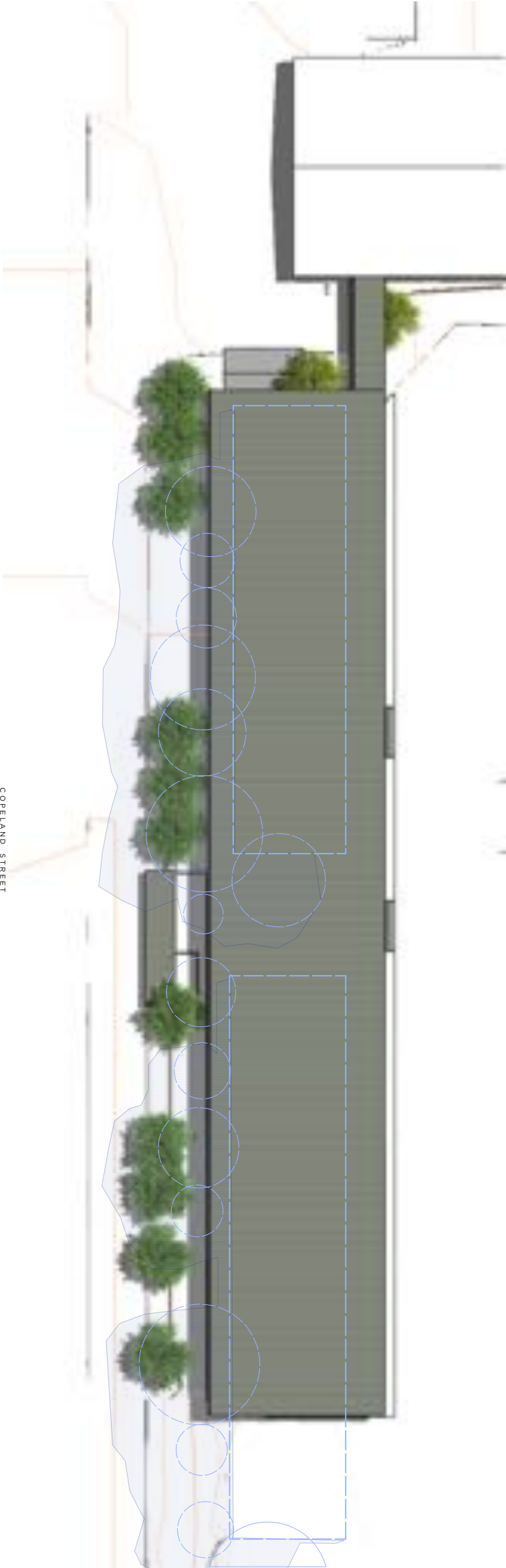
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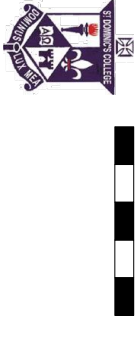


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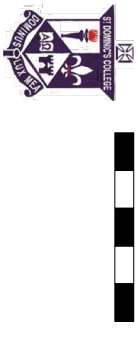
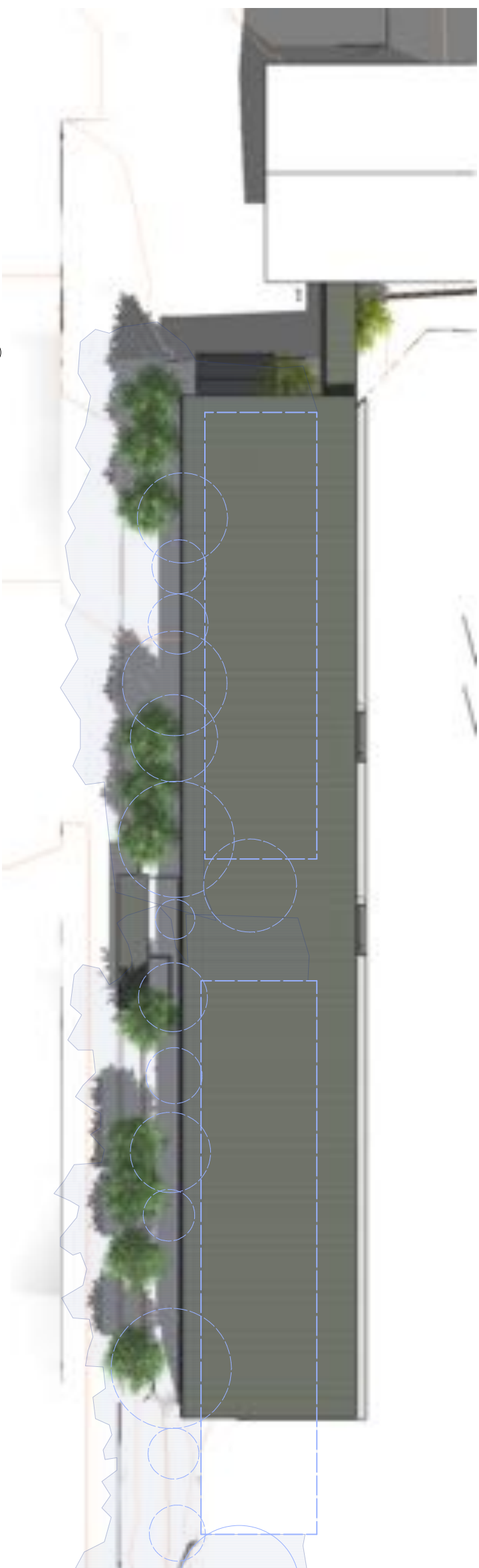
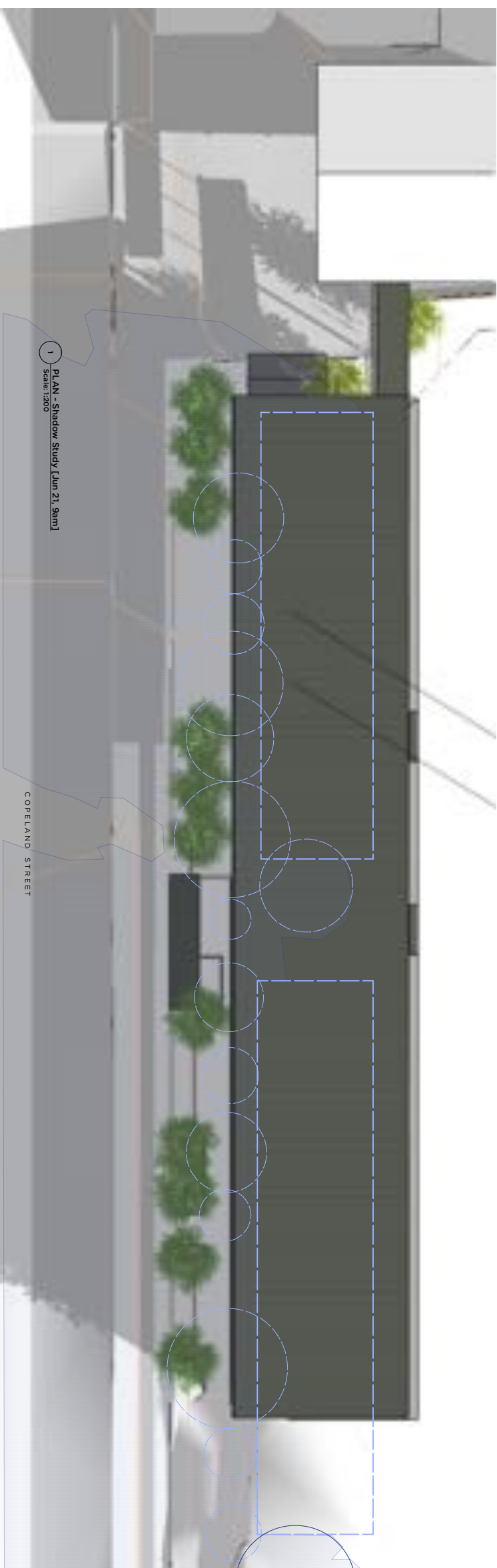


2 PLAN - Shadow Study (Dec 22, 12pm)
Scale: 1200

- LEGEND:
- Proposed Shadow
 - Proposed for demolition Block E (Demountables, COLA & Trees)
 - Existing Block E Shadows (Cast by Demountables, COLA & Trees)

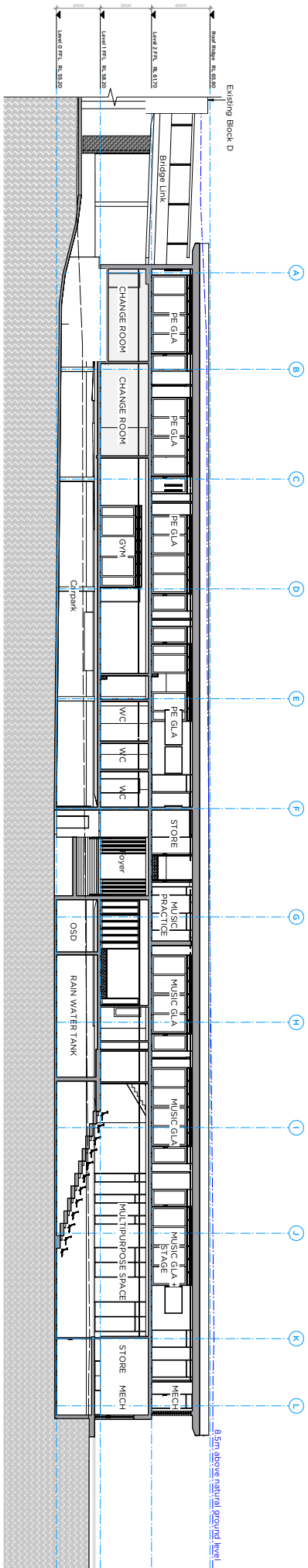


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PMDL.COM.AU			
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PROJECT: 54 GASCOIGNE ST			
CLIENT: St. Dominic's College			
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P1			

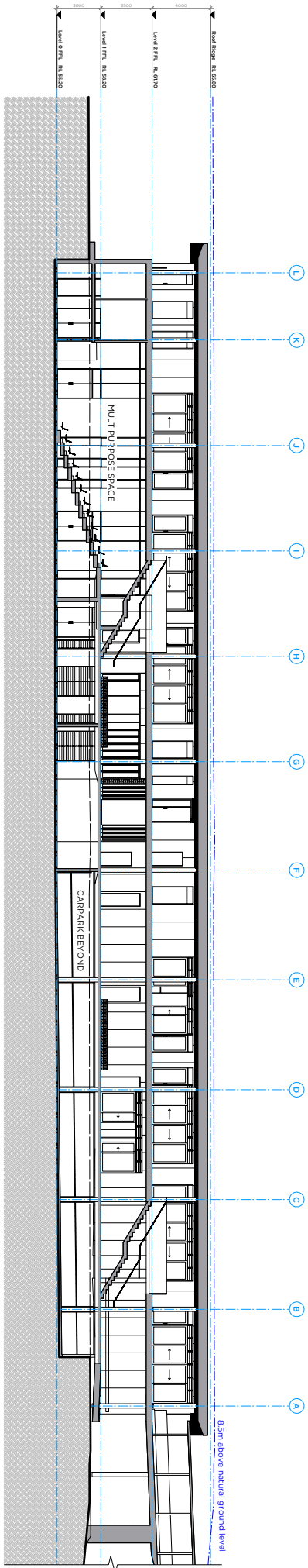


- Proposed Shadow
-  Proposed for demolition Block E (Demountables, COLA & Trees)
-  Existing Block E Shadows (Cast by Demountables, COLA & Trees)

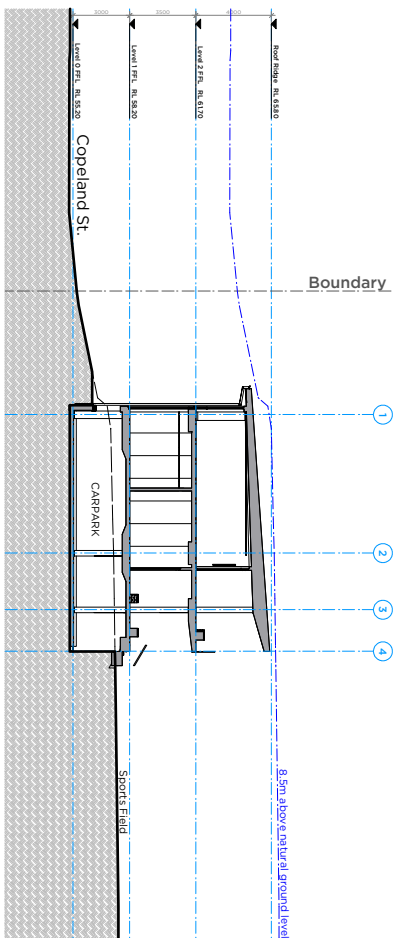
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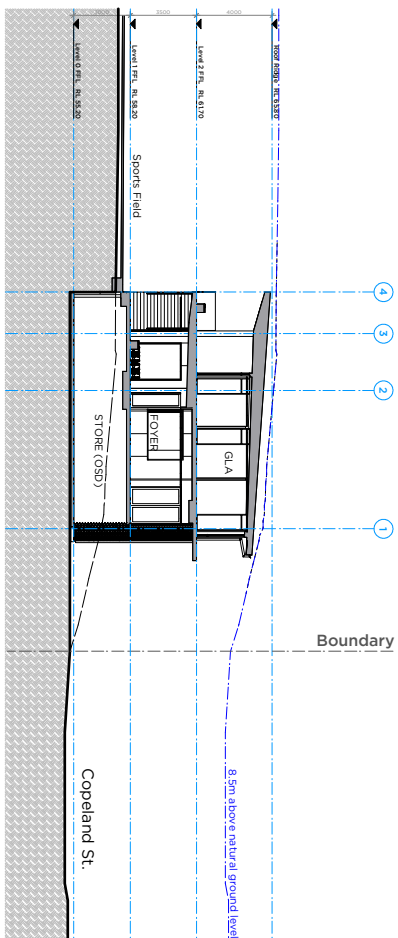
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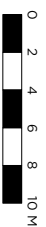
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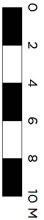
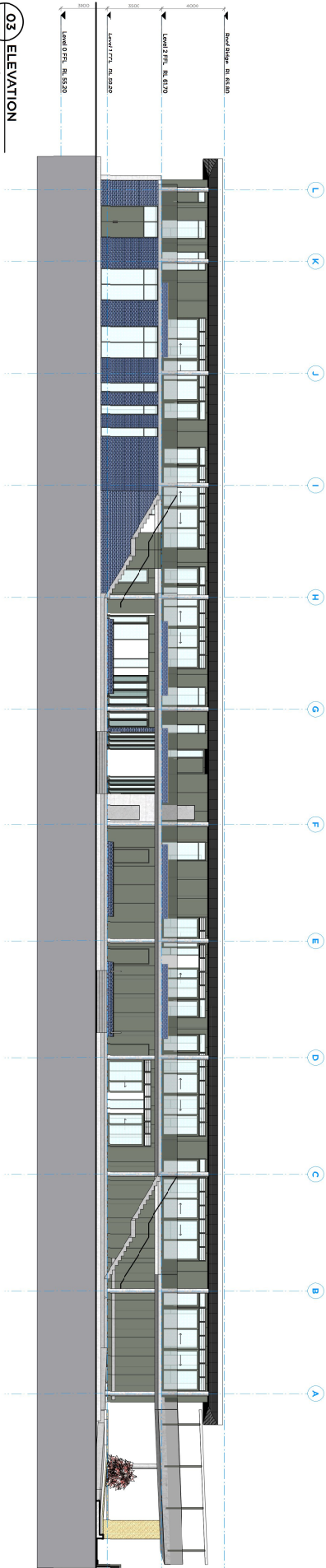
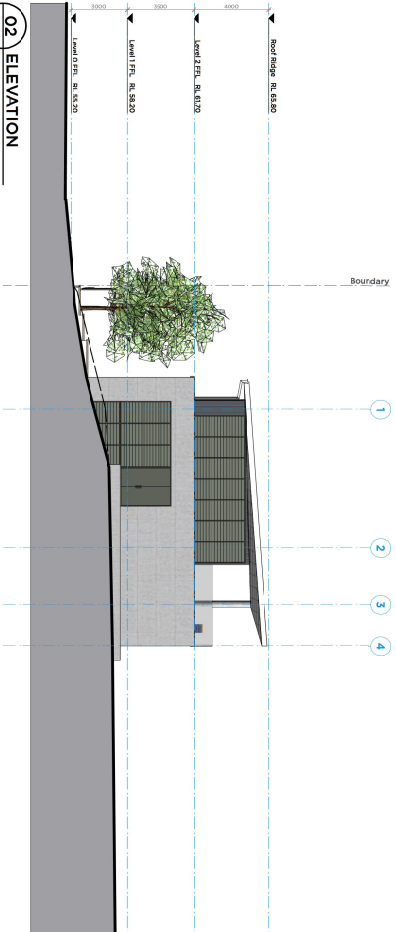
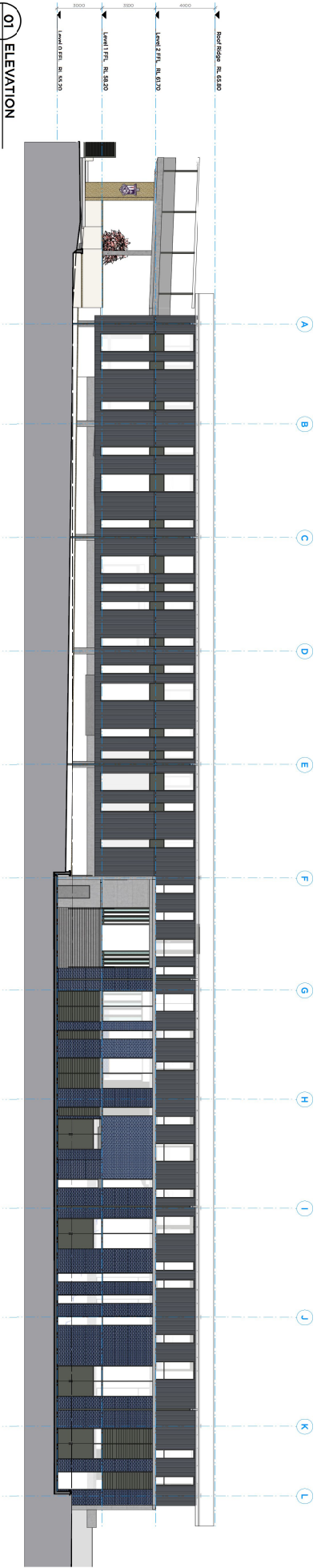


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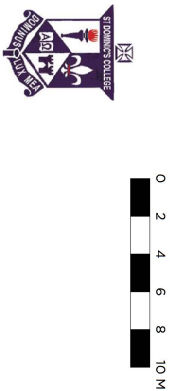
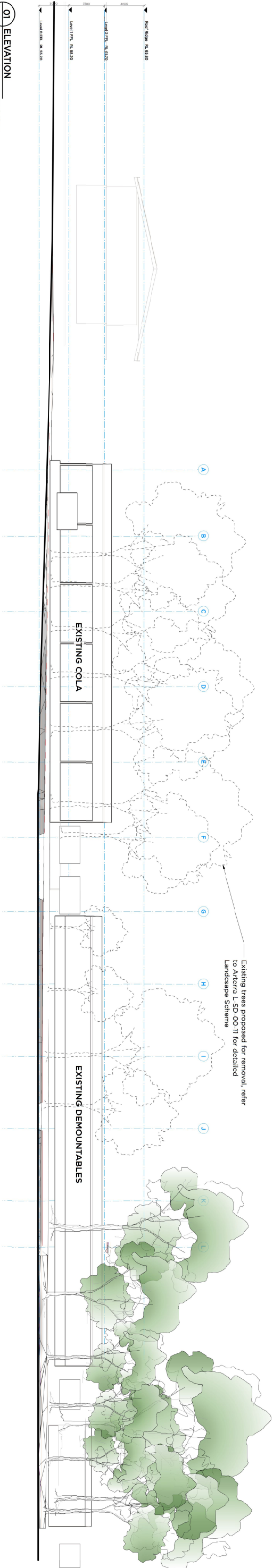


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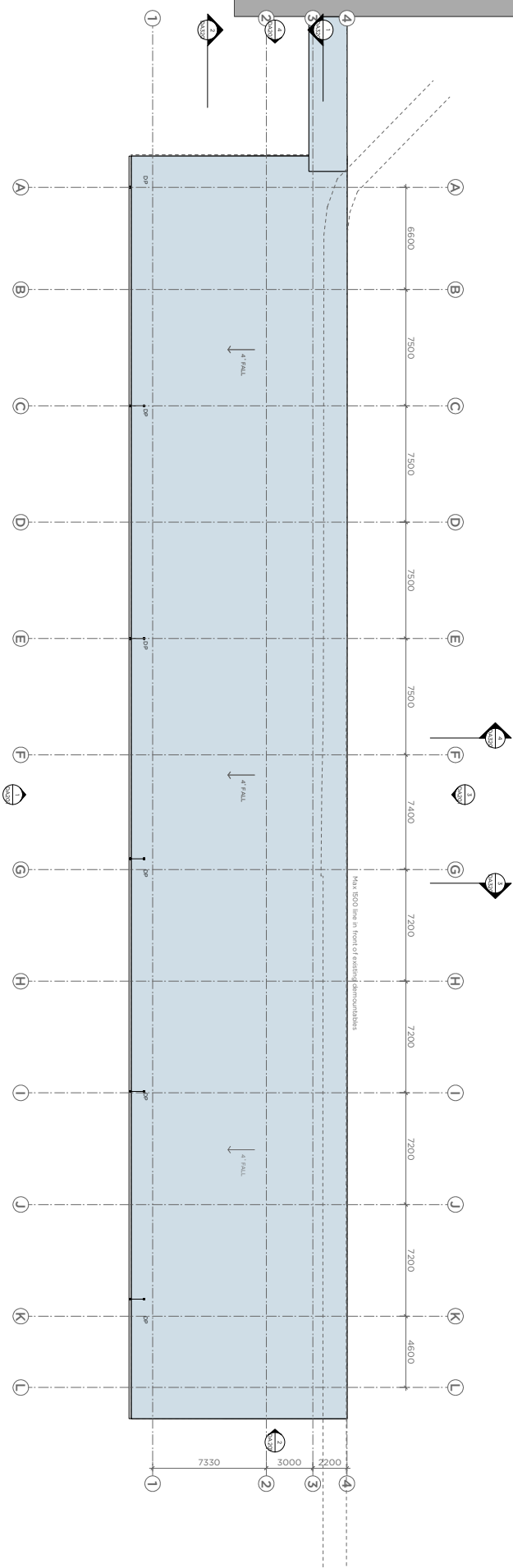
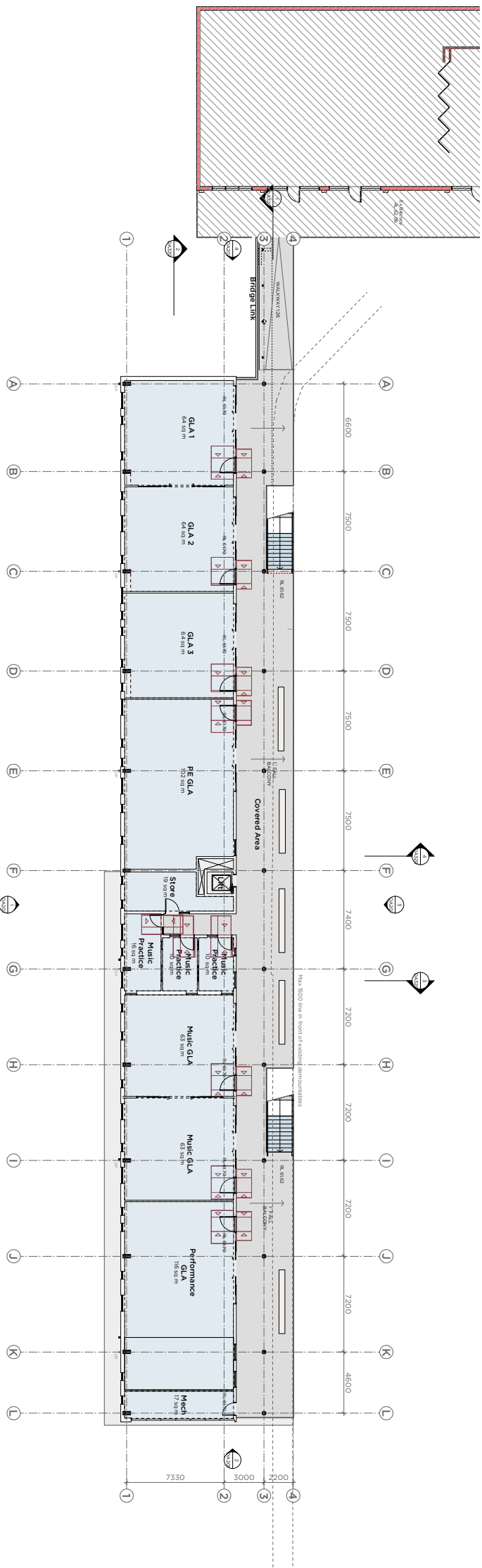
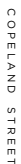




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PROJ. ARCHITECTURE + DESIGN PTY LTD ABN 56 002 986 317				
PROJECT				
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CLIENT				
St. Dominic's College				
DRAWING				
Block E - Elevations 01				
DRAWING				
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CLIENT'S CONTACT				
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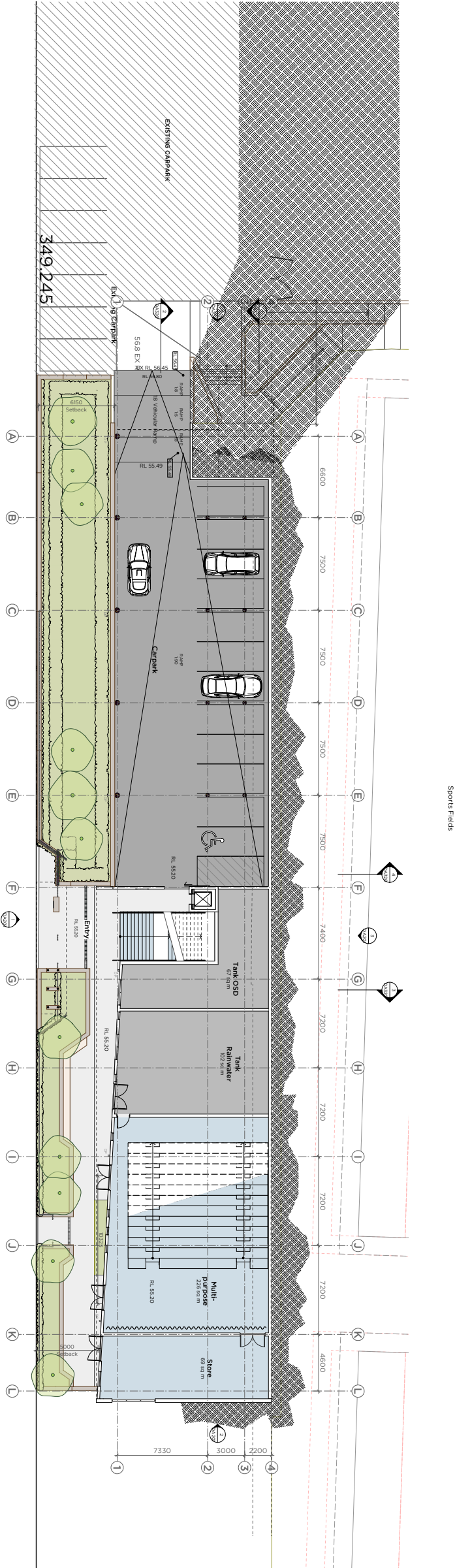
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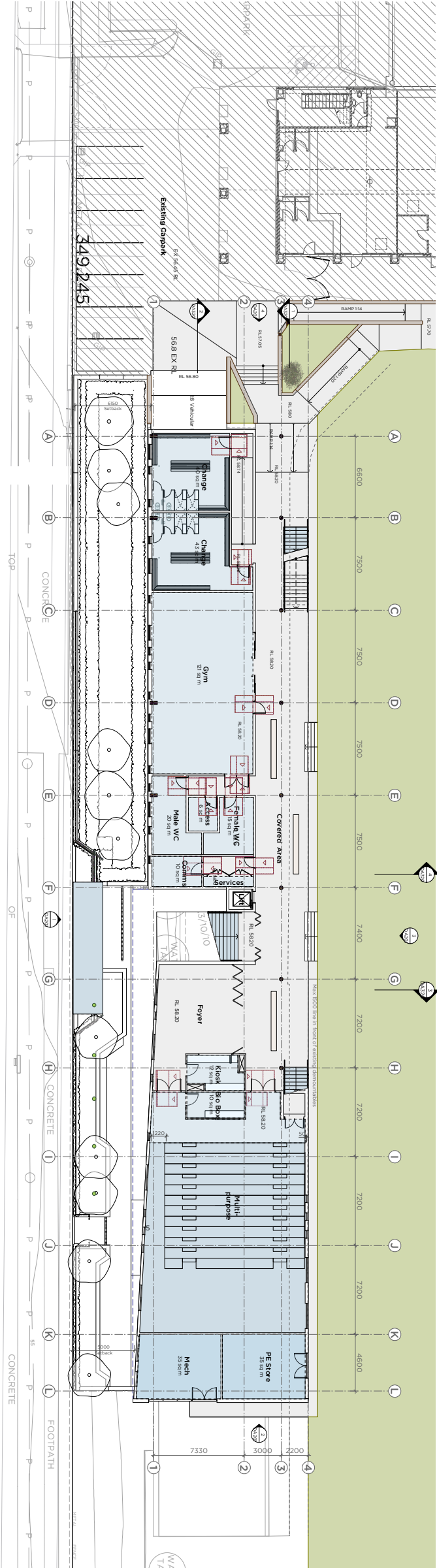
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-  OUT OF SCOPE (shown grey)
 Existing Wall/Structure
 New Wall/Structure
 Proposed works

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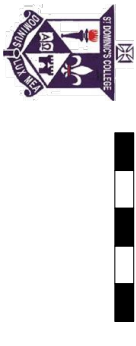


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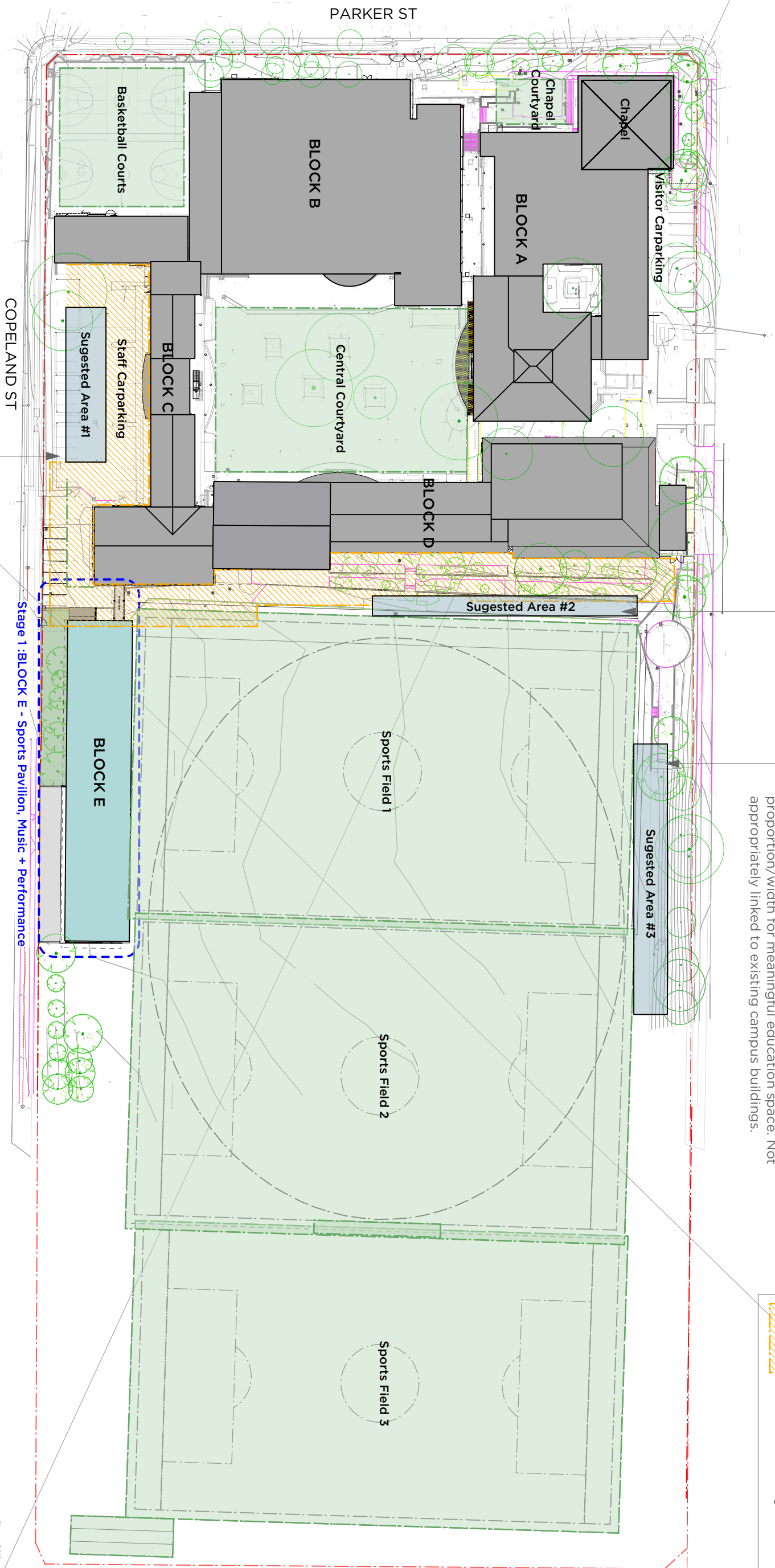


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- LEGEND:
- OUT OF SCOPE (shown grey)
 - Existing Wall/Structure
 - New Wall/Structure
 - Proposed works



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12/01/2019	99	FOR DEVELOPMENT APPLICATION
12/01/2019	100	FOR DEVELOPMENT APPLICATION



Available area #2= 4m x 61m after NCC amenity offset from Block D. Not sufficient proportion/width for meaningful education facility/space. Interferes with College future landscaping masterplan.

Available area #3= 6m x 60m after offset from existing rainwater tank and Council Boundary Offset. Not sufficient proportion/width for meaningful education space. Not appropriately linked to existing campus buildings.

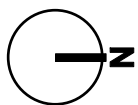
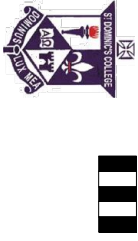
LEGEND - SUGGESTED LOCATION ANALYSIS MAP

- | | |
|---|--|
|  | Existing two storey buildings |
|  | DA Proposal Block E |
|  | Council suggested alternative locations for Block E building |
|  | 10m min. building offsets for outdoor spaces |

SITE MASTER PLAN

Scale: 1:1000

Available area #1= 35m x 9m after Council boundry and NCC amenity offset. Not sufficient accomodation for College educational requirements. Increases load on street parking by 30+ car spaces given carpark would no longer be operational (vehicular and pedestrian traffic safety risk).



PMDL ARCHITECTURE
INTERIOR DESIGN
MASTERPLANNING

For Development Application
PI 9.8.19
SSE AIRPORT
DATE
LOCAL DEVELOPER'S OWN BRIDGE AND PAVEMENT FOR CONSTRUCTION
0mm 50mm 100mm

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NAIN NOMINATED ARCHITECTS: ANDREW BENDER SS17 DAVID MORRIS SS05 PETER DODDRELL SS15
 PHIL ARCHITECTURE + DESIGN HK (LIMITED)
 PHIL ARCHITECTURE + DESIGN PVT LTD AINM SS 002 990 317
 PROJECT

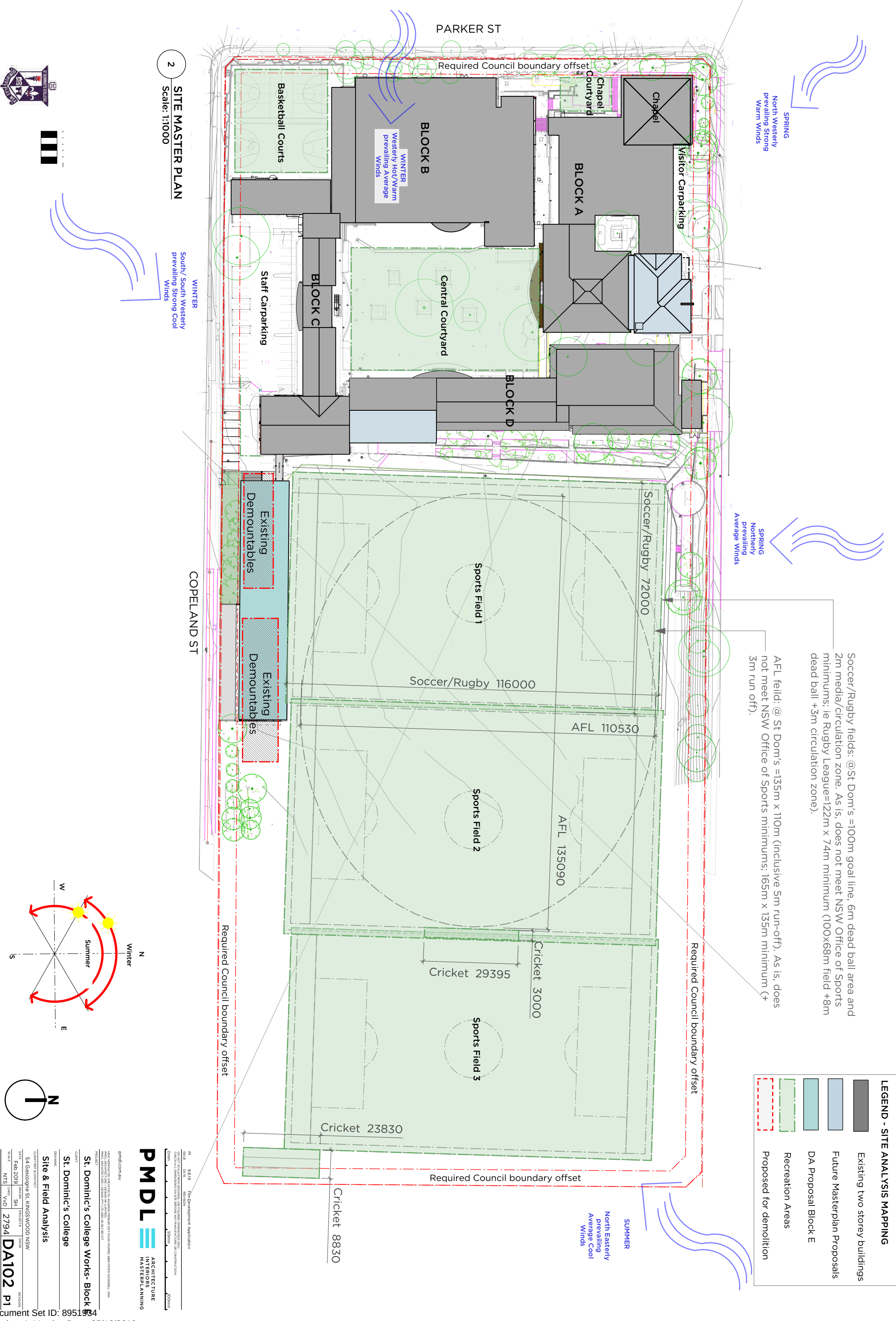
St. Dominic's College Works-Block

St. Dominic's College

Block E Location Analysis

54 Gascoigne St, KINGSWOOD NSW

DATE	DATA WY	PROJECT #	UNID	REL VS
Feb 2019	SH			
SCALE	CHKD			
NTS	VVD	2794	DA103	P1



2 SITE MASTER PLAN
Scale: 1:1000

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prevailing Strong Cool
Winds

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St Dominic's College

54 Gascoigne St, Kingswood NSW

Development Application



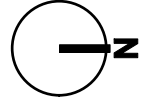
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NTS

LOCATION PLAN

Architectural Drawing List	
DA001	Cover Sheet & Site Location
DA020	Perspectives 01
DA021	Perspectives 02
DA101	Site Master Plan
DA102	Site & Field Analysis Plan
DA103	Block E Location Analysis
DA111	BLOCK E - Demolition Plan
DA120	BLOCK E - Plans L0, L1
DA121	BLOCK E - Plans L2, Roof
DA200	BLOCK E Copeland St Elevations
DA201	BLOCK E - Elevations 01
DA320	BLOCK E - Sections
DA410	BLOCK E Shadow Diagram 01
DA411	BLOCK E Shadow Diagram 02
DA412	BLOCK E Shadow Diagram 03
DA500	Block E - Materials/Finishes Schedule

Architect	PMDL
	Sydney Level 8, 28 Clarke Street Crows Nest NSW 2065 Phone +61 2 8458 5500 Email: sydney@pmdl.com.au
	Andrew Pender 5317 / David Morris 5865 / Vicki van Dijk 9476
Planning	DFF Planning Pty Ltd
	PO Box 230, Thornleigh NSW 2120 Phone +61 2 9980 6933 Email: searp@dffplanning.com.au
BCA	AED Group
	Suite 3.04, 55 Miller Street, Pyrmont NSW 2009 Phone +61 2 9571 8433 Email: kelly@aedconsulting.com.au
Landscape * Arborist	Arterra
	Suite 602, 51 Rawson Street, Epping NSW 2121 Phone +61 2 9957 2466 Email: cbarrow@arterra.com.au
Structural	Geoff Nines, Fong + Partners
	Level 1, 68-70 Crown Street Woolloomooloo NSW 2011 Phone +61 2 9532 5100 Email: brad@gnfp.com.au
Services	JHA Consulting
	Level 23 101 Miller Street North Sydney 2060 NSW Phone +61 9437 1000 Email: Samuel.Tong@jhaengineers.com.au



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DATE	PROVISION	
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0.00m	1.00m	2.00m

PMDL ARCHITECTURE
INTERIORS
MASTERPLANNING

pmdl.com.au

NSW REGISTERED ARCHITECTS: ANDREW PENDER 1397, DAVID MORRIS 5865, PETER COOKEWELL 1554

PHOTO: ARCHITECTURE + DESIGN PHOTOGRAPHY LTD, 2020, 36.0x21.0m 3:1

PROJECT

St. Dominic's College Works- Block E

CLIENT

St. Dominic's College

DRAWING

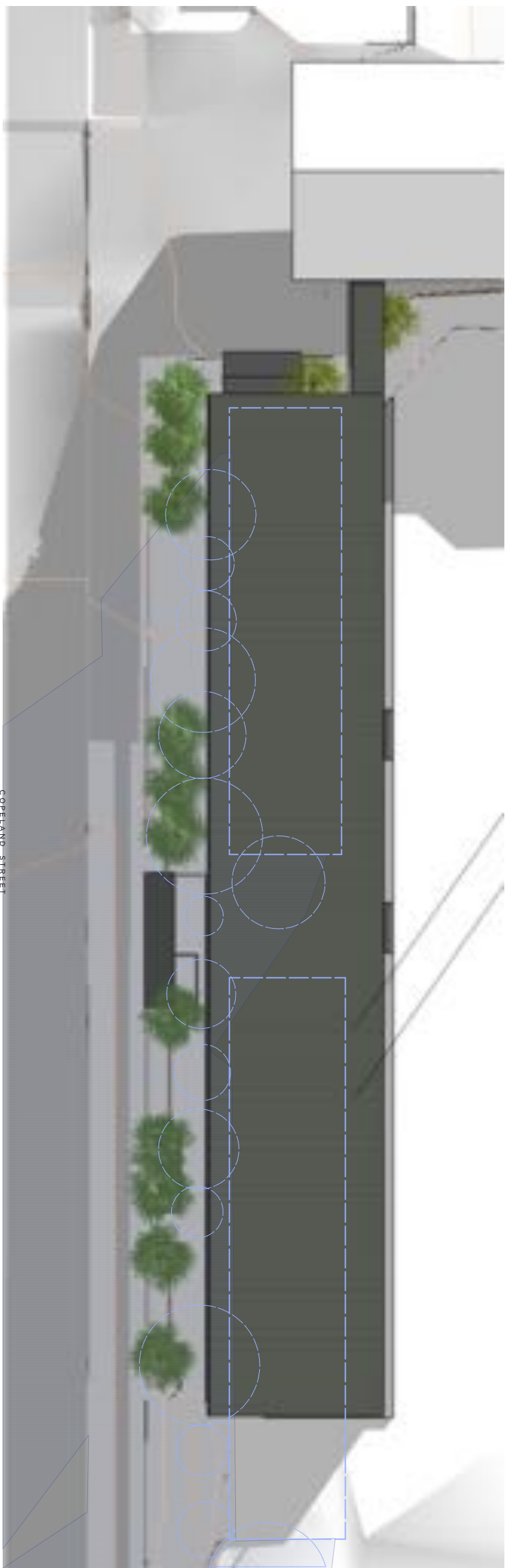
Cover Sheet & Site Location

CLIENT REF & CONTACT

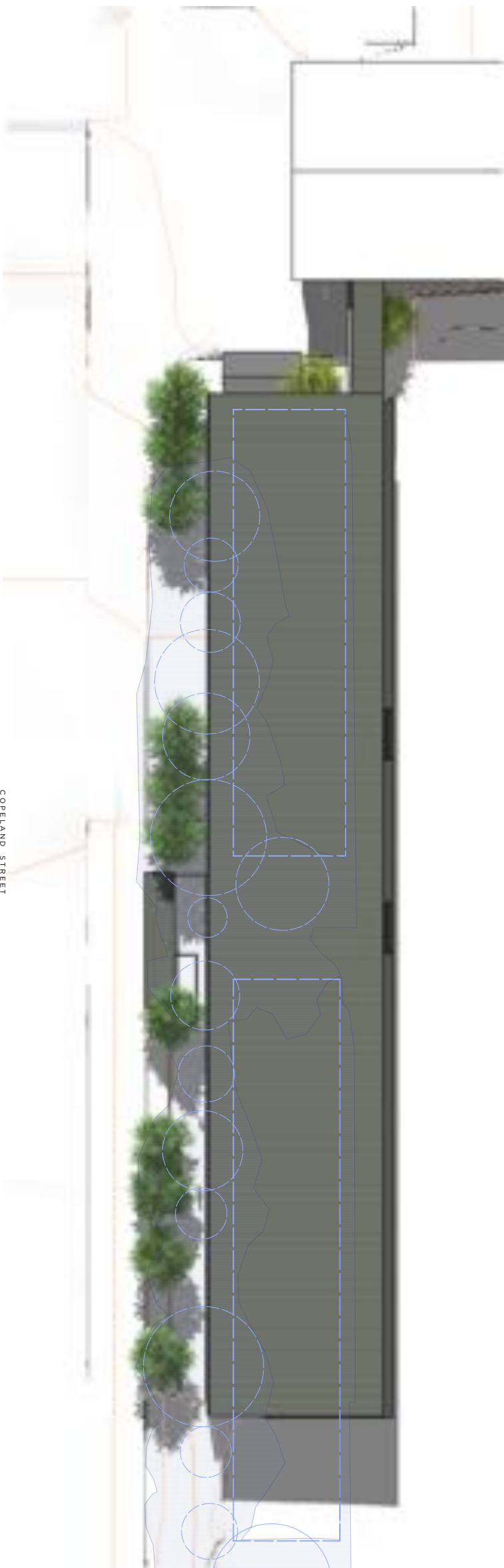
54 Gascoigne St, KINGSWOOD NSW

DATE	PROJECT	PROJECT	REVISION
FEB 2019	SH	SH	
SCALE	CAD	VDO	2794
NTS			DA001 P1

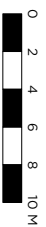




1 PLAN - Shadow Study [Jun 21, 3pm]
Scale: 1:200



2 PLAN - Shadow Study [Dec 22, 3pm]
Scale: 1:200



2 PLAN - SH
Scale: 1:200



LEGEND:

- Proposed Shadow
- Proposed for demolition Block E
(Demountables, COLA & Trees)
- Existing Block E Shadows
(Cast by Demountables, COLA & Trees)

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NEW NOMADIA ARCHITECTS AND BEN PENDER 331 DAVID MORRIS 5895 PETER DODDRELL 519
PMD ARCHITECTURE DESIGN INC (LIMITED)
PMD ARCHITECTURE • DESIGN PTY LTD ABN 56 062 961 317

St. Dominic's College Works-Block

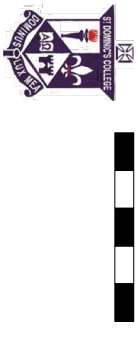
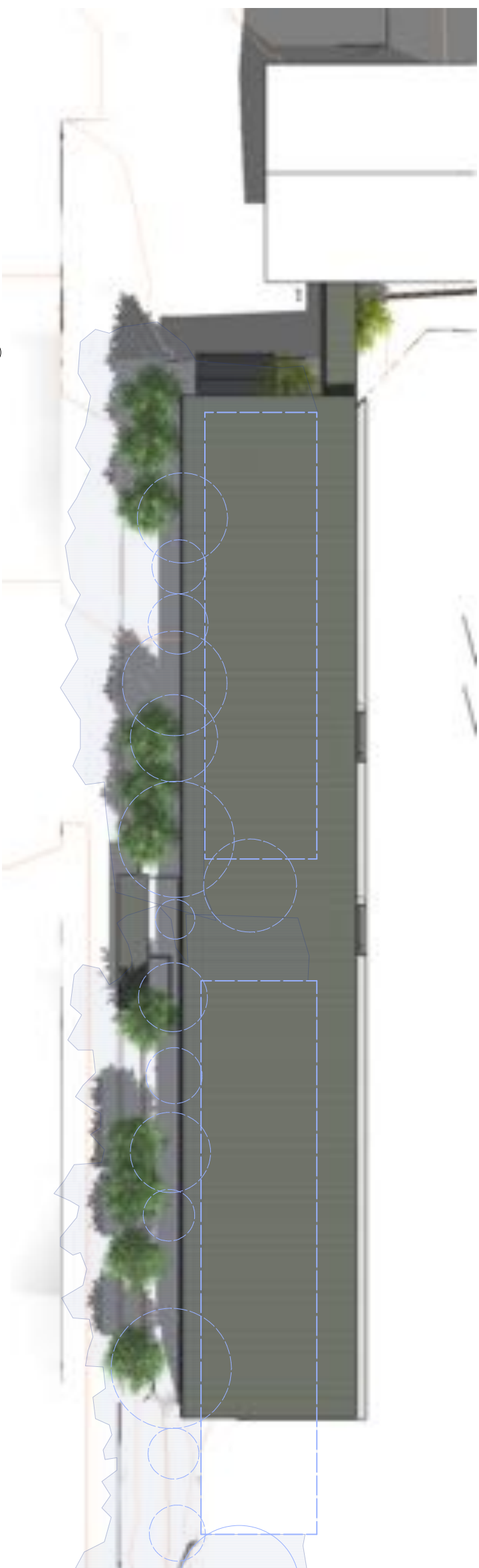
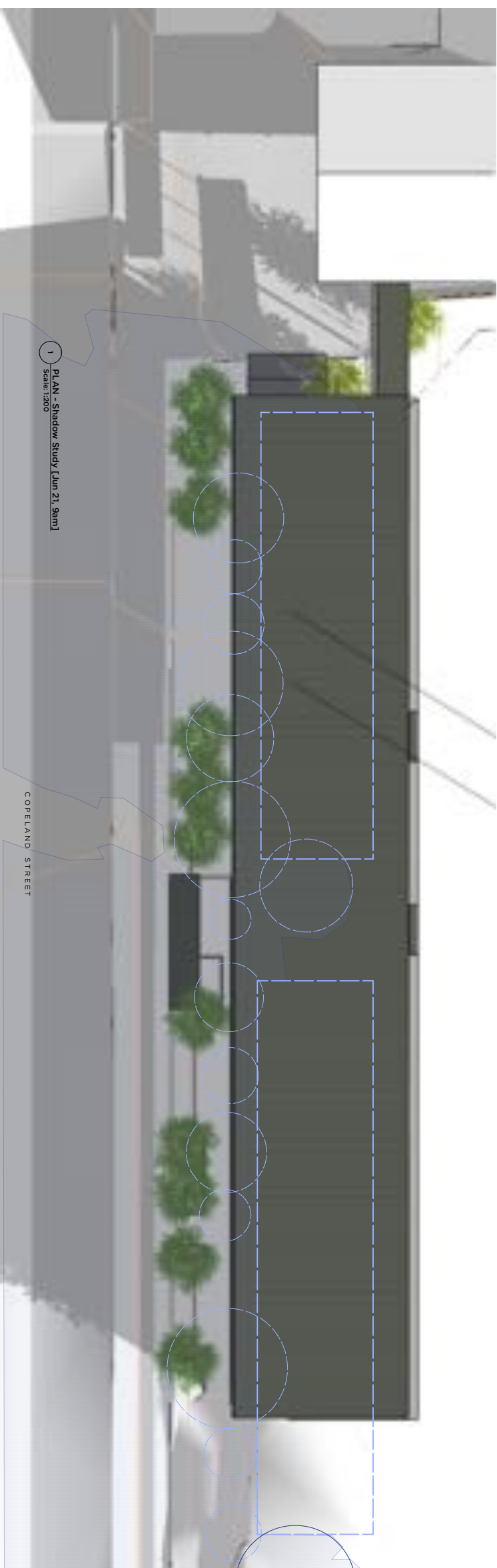
St. Dominic's College

Block E - Shadow Diagram 03

54 Gascoigne St

DATE	DRAWN
Jan 2019	

SCALE	CHD	
1.200@A1	VVD	2794
		DA412 P1



- Proposed Shadow
- Proposed for demolition Block E (Demountables, COLA & Trees)
- Existing Block E Shadows (Cast by Demountables, COLA & Trees)

LEGEND:

PI	9.8.19	For Development Application
ISSUE	DATE	REVISION
DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY. CHECK ALL DIMENSIONS ON SITE BEFORE ANY MANUFACTURE OR CONSTRUCTION.		
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NSW NOMINATED ARCHITECTS: ANDREW PENDER 5317 DAVID MORRIS 5605 PETER DODDRELL 5154
PMD, ARCHITECTURE + DESIGN HK (LIMITED)
PMD, ARCHITECTURE + DESIGN PTY LTD AIN 56 062 9011 317

PROJECT

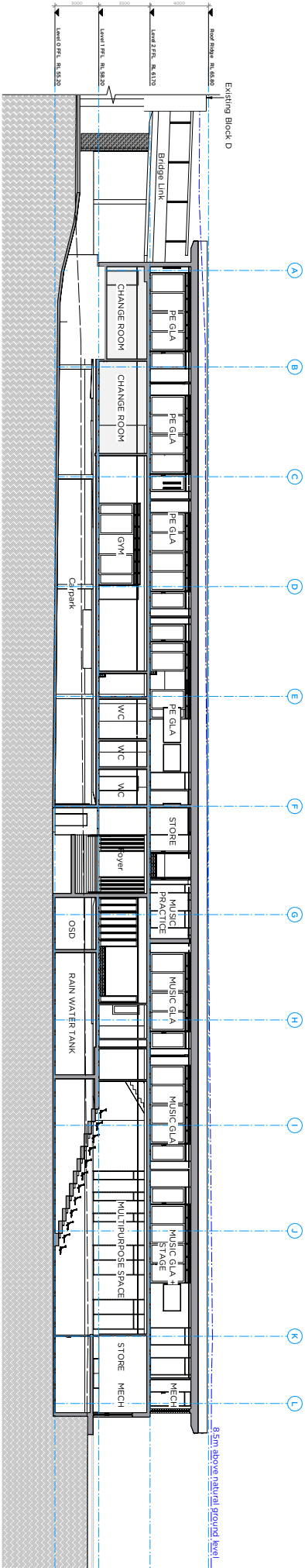
St. Dominic's College Works-Block

St. Dominic's College

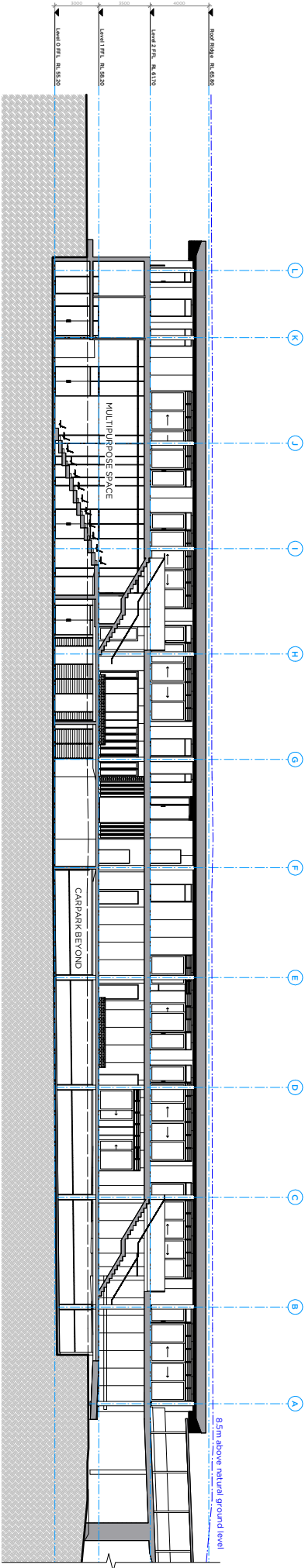
Block E - Shadow Diagram 01

54 Gascoigne St

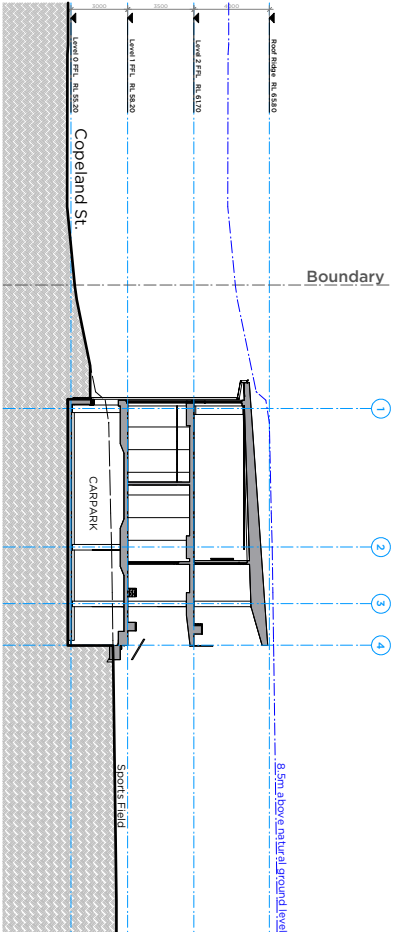
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Jan 2019	SH			
SCALE	CHD			
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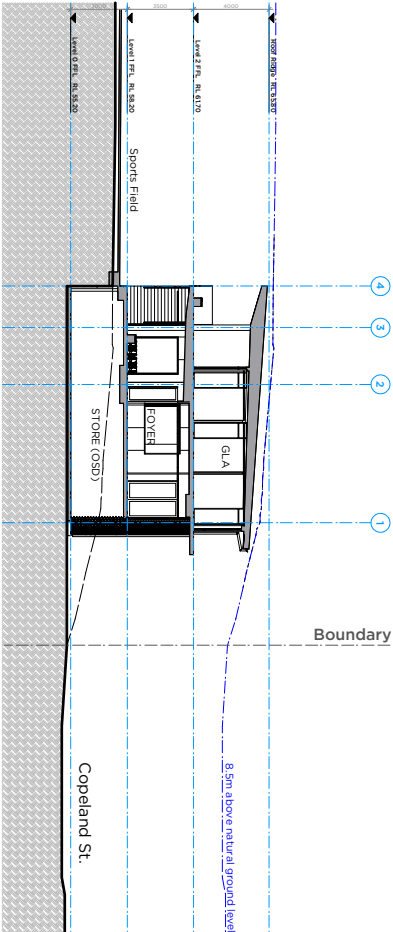
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Block E
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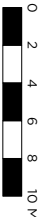
01 SECTION
Block E
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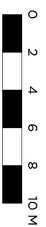
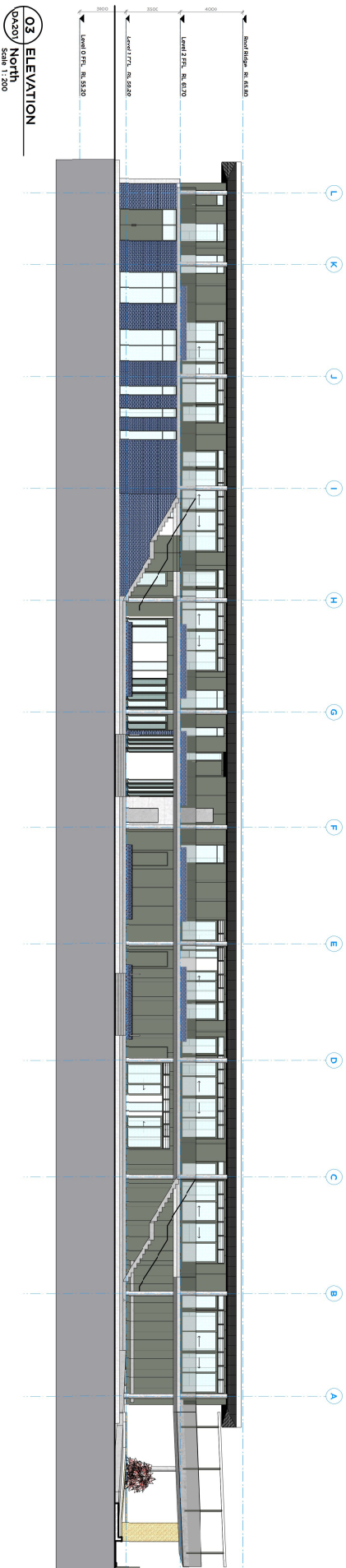
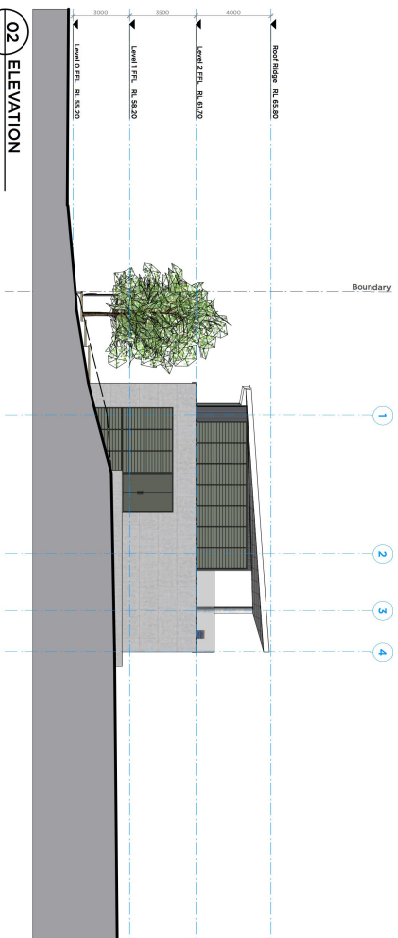
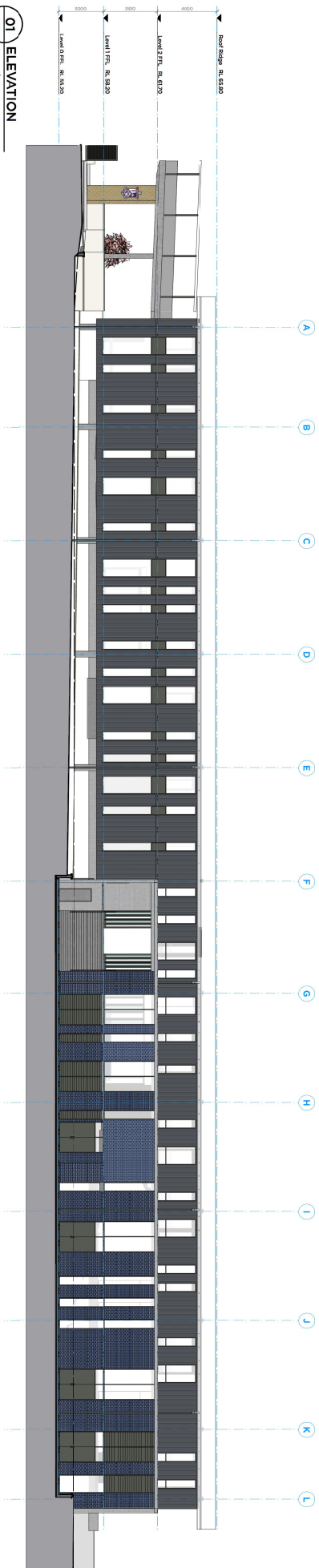
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Block E
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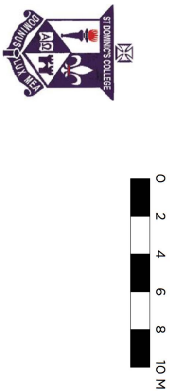
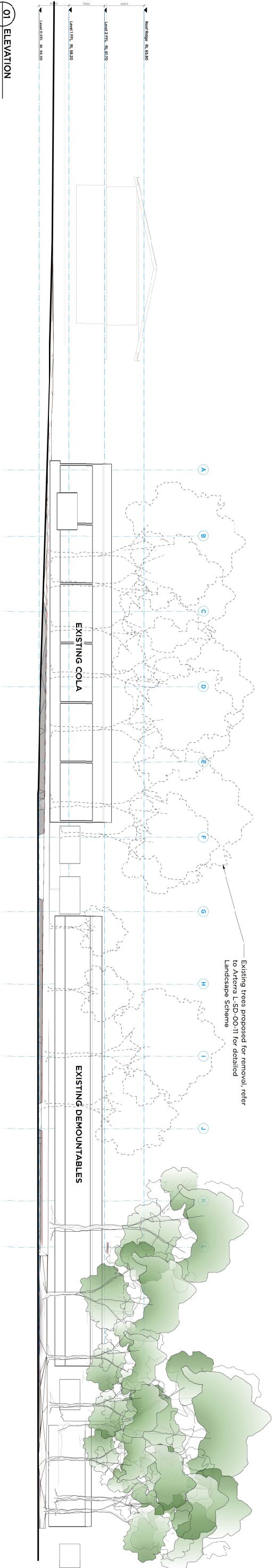


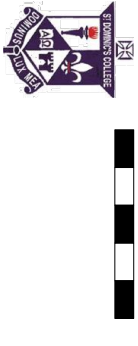
03 SECTION
Block E
Scale 1:200



P1		9.8.19	For Development Application
DATE	REVISION		
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PMDL ARCHITECTURE INTERIORS MASTERPLANNING			
PMDL.COM.AU			
FROM: NARRABURRA TIDAL RIVER CATCHMENT, ARABIAN RIVER, 331 TAVAKI HIGHWAY, 3668 PETER'S COOKSWELL, NSW			
PROJECT: ST. DOMINIC'S COLLEGE WORKS - BLOCK E			
CLIENT: St. Dominic's College			
DRAWING: Block E - Sections			
DRAWN: SA GARCOURT, ST. KINGSWOOD, NSW			
DATE: Jan 2019	SH	PROJECTS	REVISIONS
SCALE: @A1	CHD	VLD	2794
DA320 P1			

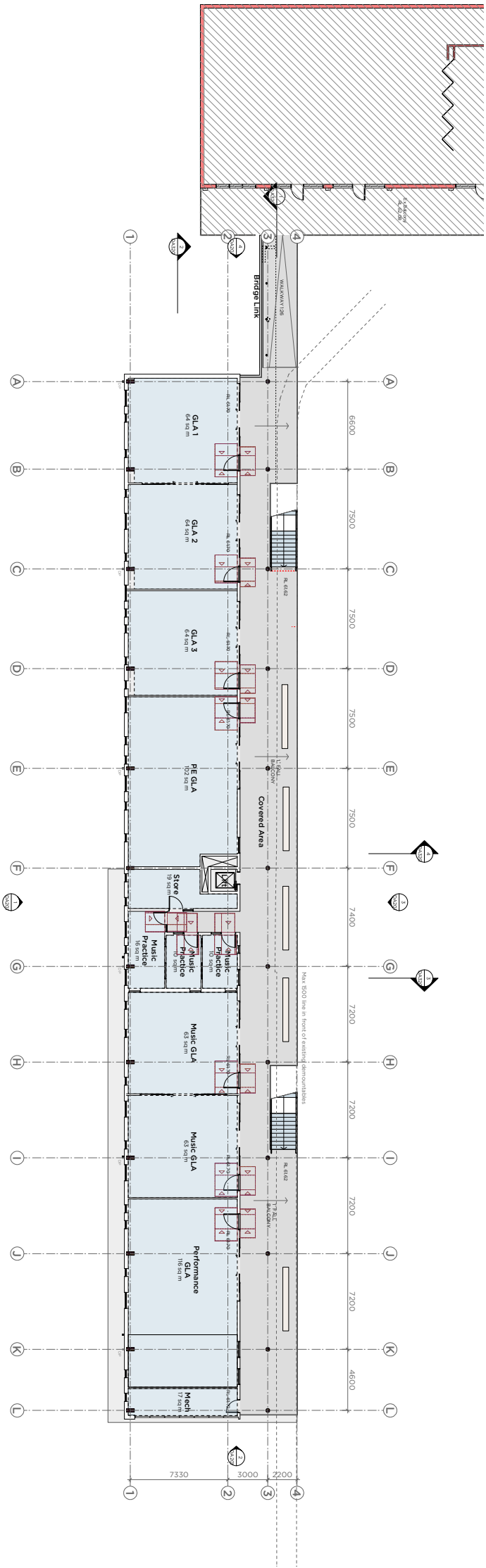




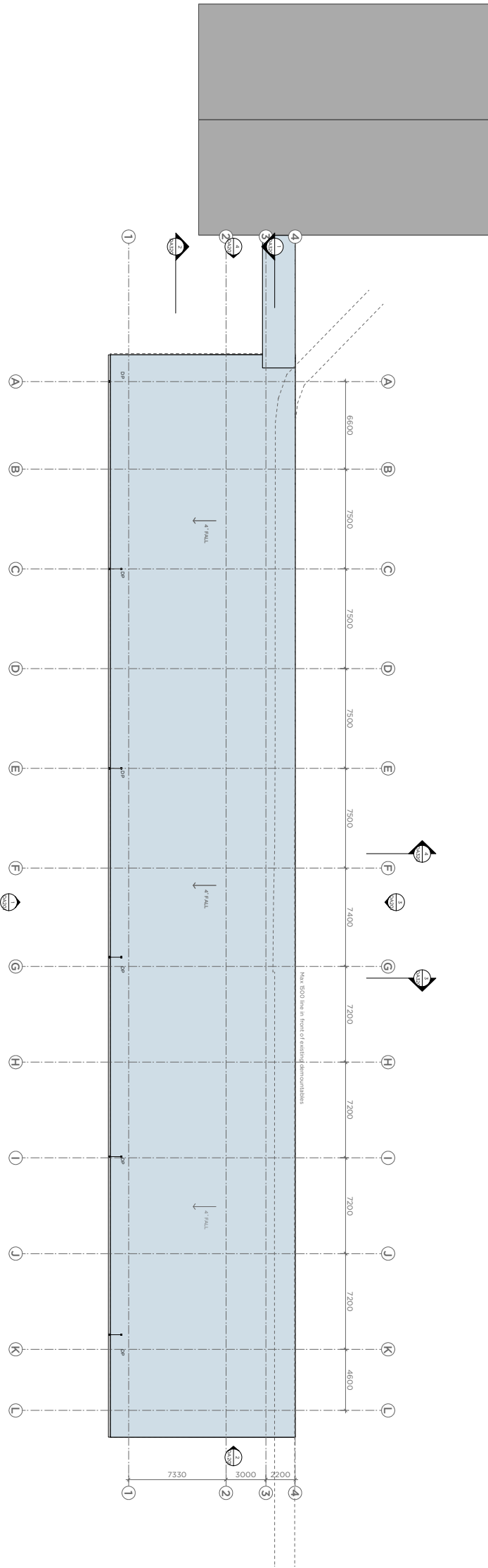


1 PLAN - Level 2
Scale 1:200

C O P E L A N D S T R E E T



2 PLAN - Roof
Scale 1:200



- LEGEND:
- OUT OF SCOPE (shown grey)
 - Existing Wall/Structure
 - New Wall/Structure
 - Proposed works

PMDCOM AU

FROM NARRAN TID ARCHITECTS, ARCHITECTS, 331 STAVAN MOORE, 5065 PETER DOONELL, 514
ARCHITECTS, 1000 PETER DOONELL, 514
ARCHITECTS, 1000 PETER DOONELL, 514
ARCHITECTS, 1000 PETER DOONELL, 514

PROJECT

St. Dominic's College Works- Block E

CLIENT

St. Dominic's College

DRAWING

Block E - Proposed Plans L2, Roof

DATE

Jan 2019

SCALE

1:200 @ A1

PROJECT #

2794

PROJECT #

DA121

PROJECT #

P1

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ARCHITECTURE
INTERIORS
MASTERPLANNING

PROJECT #

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PROJECT #

DA121

PROJECT #

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PROJECT #

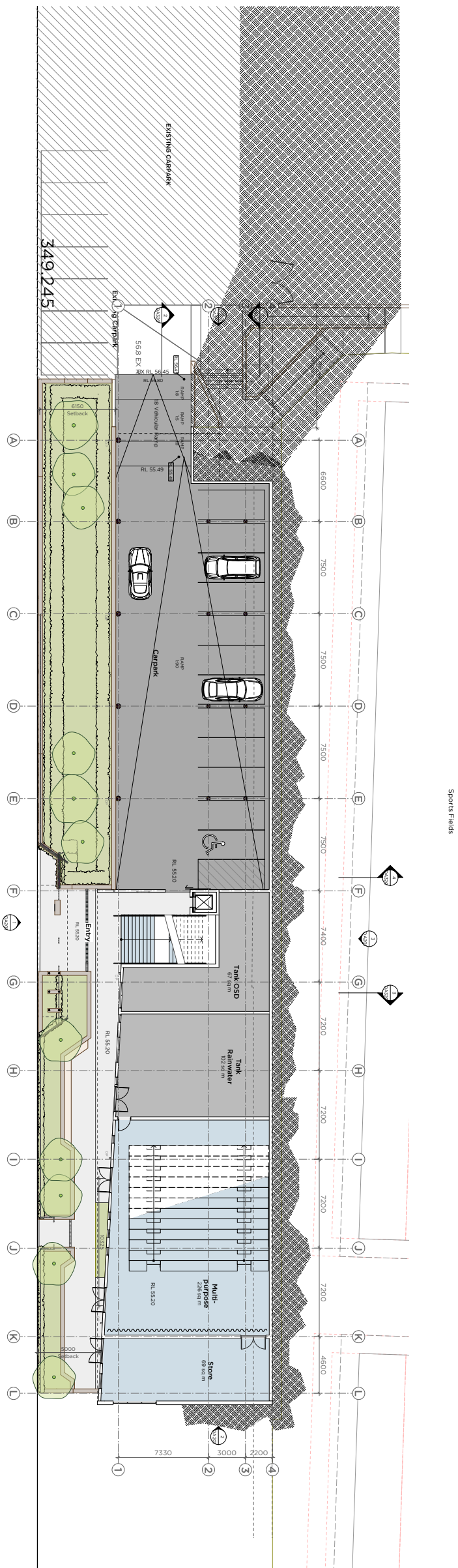
2794

PROJECT #

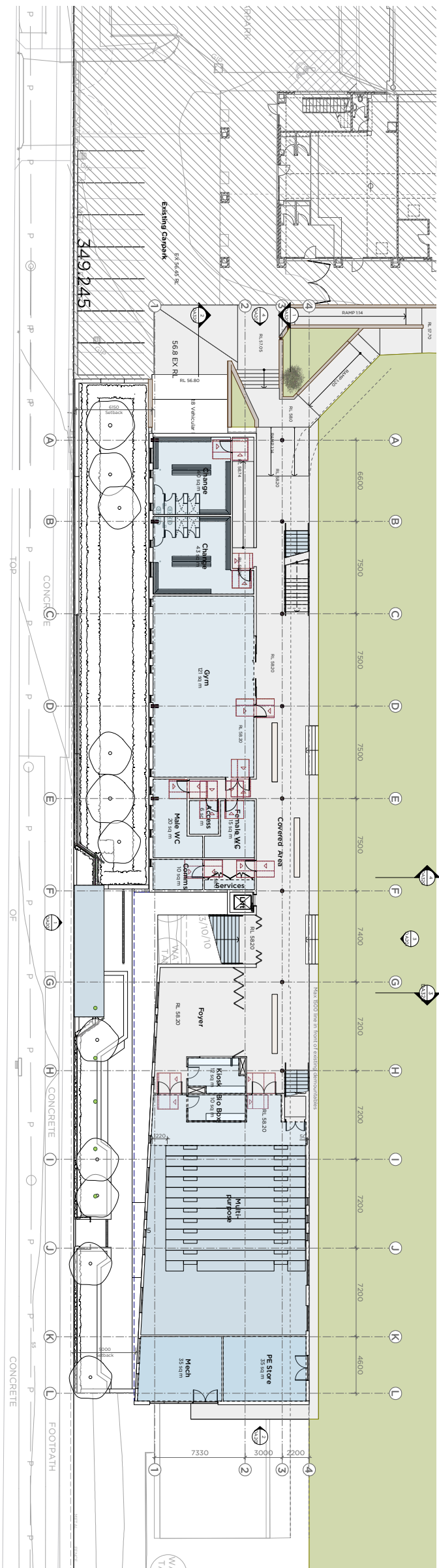
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PROJECT #

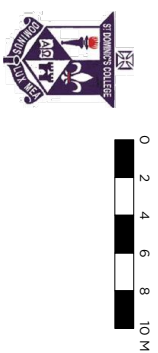
P1



1 PLAN - Level 0
Scale: 1:200



2 PLAN - Level 1
Scale: 1:200



- LEGEND:**
-  OUT OF SCOPE (shown grey)
 -  Existing Wall/Structure
 -  New Wall/Structure
 -  Proposed works

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NEW NOMINATED ARCHITECTS: ANDREW PENDER 5317 DAVID MORRIS 5665 PETER DODDRELL 5154
 (NAME A PROJECT AND ONE OFFICIAL OF A COMMITTEE)

PROJECT

St. Dominic's College Works-Block

CLIENT

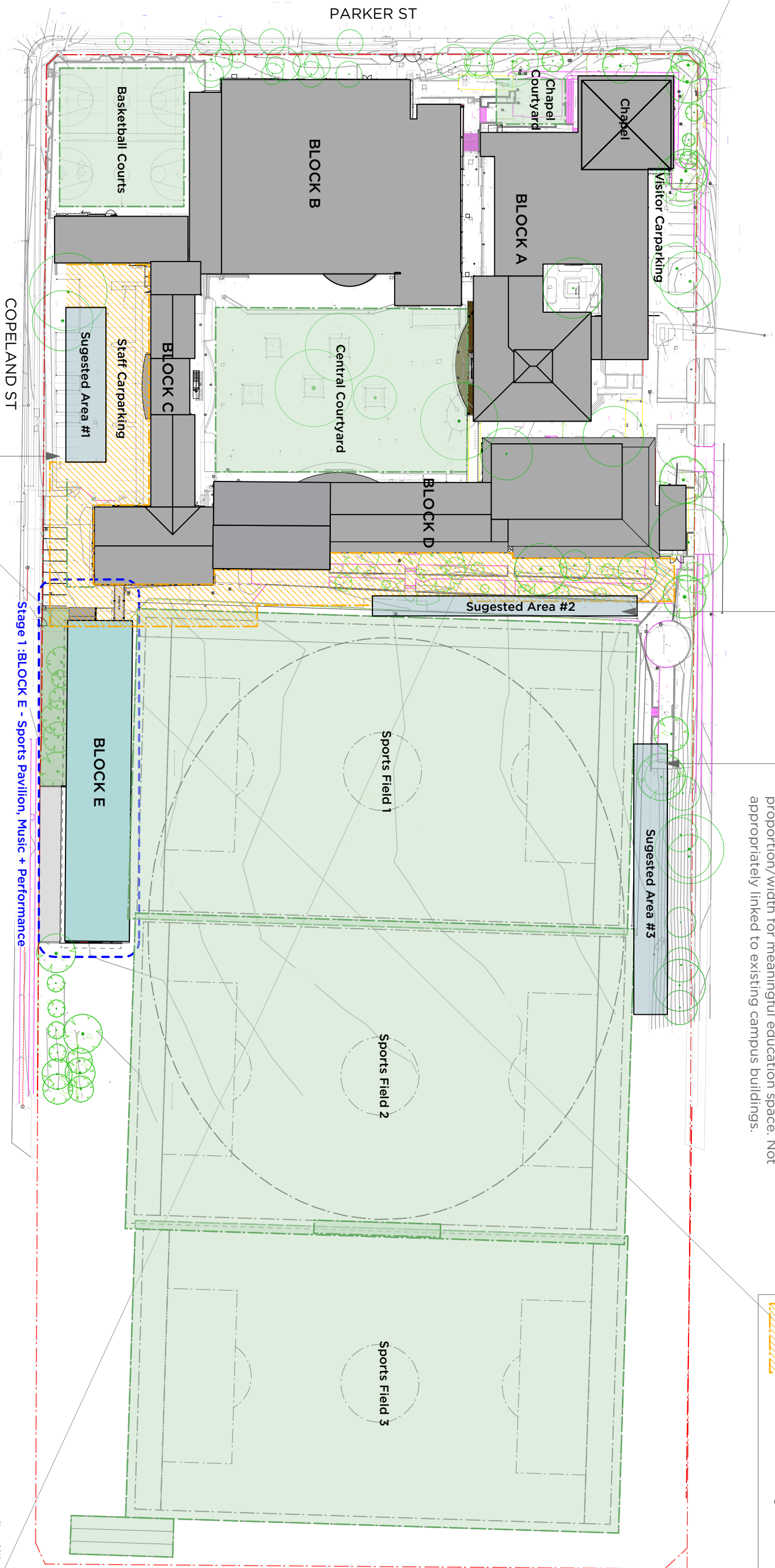
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Block E - Proposed Plans L0, L1

CLIENT REF. & CONTACT

DATE	DRAWN
------	-------

DA120 B1
SCALE CHKD 2704



Available area #2= 4m x 6m after NCC amenity offset from Block D. Not sufficient proportion/width for meaningful education facility/space. Interferes with College future landscaping masterplan.

Available area #3= 6m x 60m after offset from existing rainwater tank and Council Boundary Offset. Not sufficient proportion/width for meaningful education space. Not appropriately linked to existing campus buildings.

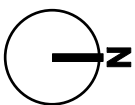
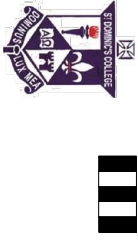
LEGEND - SUGGESTED LOCATION ANALYSIS MAP

- | | |
|---|--|
|  | Existing two storey buildings |
|  | DA Proposal Block E |
|  | Council suggested alternative locations for Block E building |
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SITE MASTER PLAN

Scale: 1:1000

Available area #1= 35m x 9m after Council boundry and NCC amenity offset. Not sufficient accomodation for College educational requirements. Increases load on street parking by 30+ car spaces given carpark would no longer be operational (vehicular and pedestrian traffic safety risk).

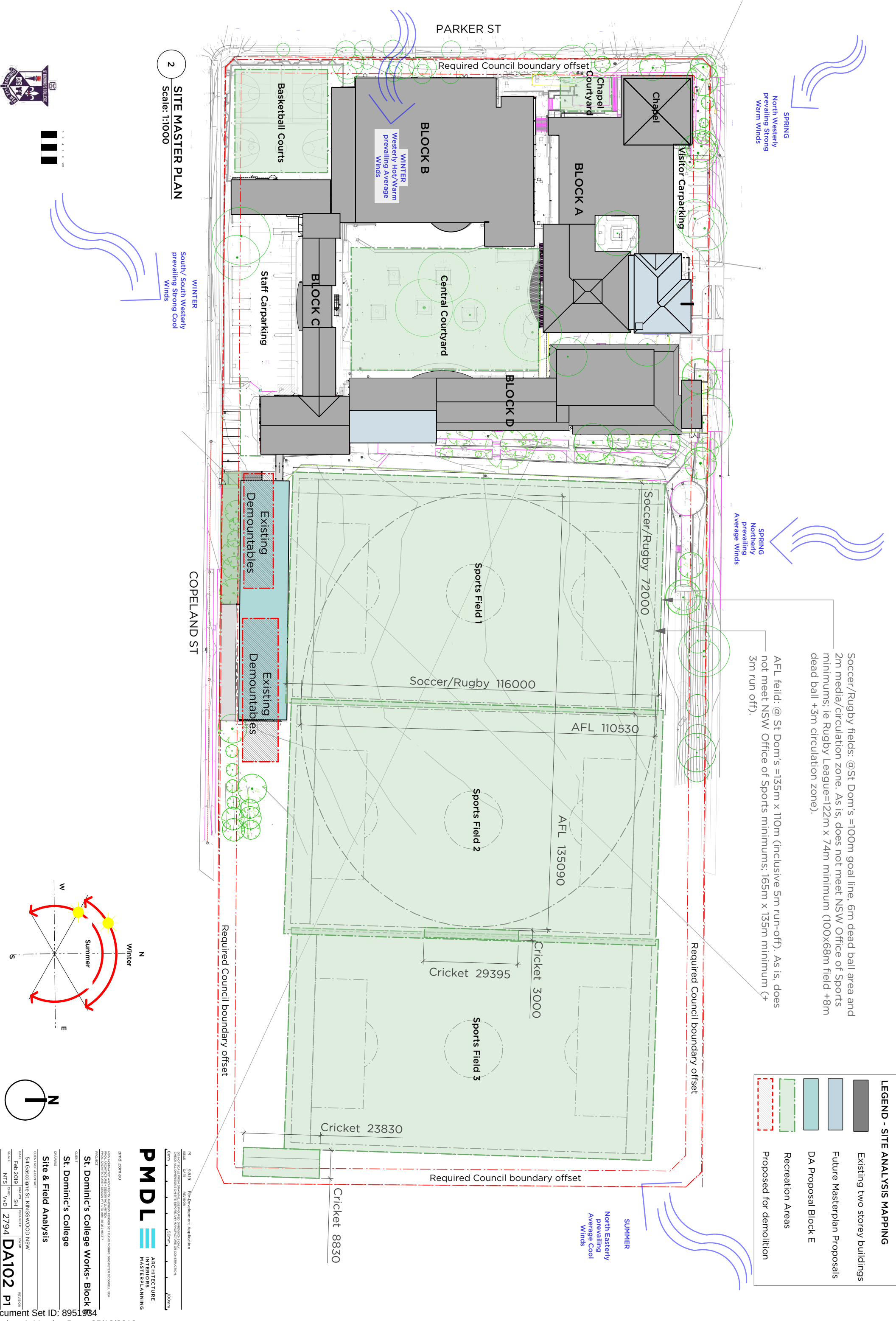
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St. Dominic's College Works-Block

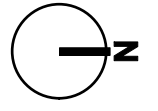
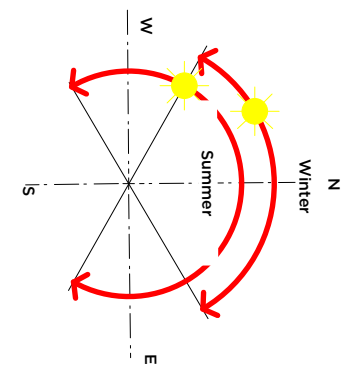
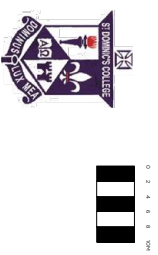
St. Dominic's College

Block E Location Analysis

DATE		DRAWN	PROJECT #	DWG#	REVISION
Feb 2019		SH	2794	DA103	P1
SCALE	CHG#				
NTS	VND				



2 SITE MASTER PLAN
Scale: 1:1000



PI 9.819 For Development Application

DATE 05/12/2019

REVISION 1

CLIENT NAME PMDL ARCHITECTURE INTERIORS MASTERPLANNING

CLIENT REF & CONTACT S4 GASCOIGNS ST, KINGSWOOD NSW

DATE FEB 2019

SCALE NTS VAO 2794 DA102 P1

PROJECT NAME St. Dominic's College Works - Block B

CLIENT NAME St. Dominic's College

DRAWING NAME Site & Field Analysis

CLIENT REF & CONTACT S4 GASCOIGNS ST, KINGSWOOD NSW

DATE FEB 2019

SCALE NTS VAO 2794 DA102 P1

PROJECT NAME St. Dominic's College Works - Block B

CLIENT NAME St. Dominic's College

DRAWING NAME Site & Field Analysis

CLIENT REF & CONTACT S4 GASCOIGNS ST, KINGSWOOD NSW

DATE FEB 2019

SCALE NTS VAO 2794 DA102 P1

PROJECT NAME St. Dominic's College Works - Block B

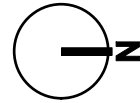
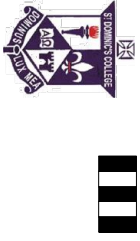
CLIENT NAME St. Dominic's College

DRAWING NAME Site & Field Analysis

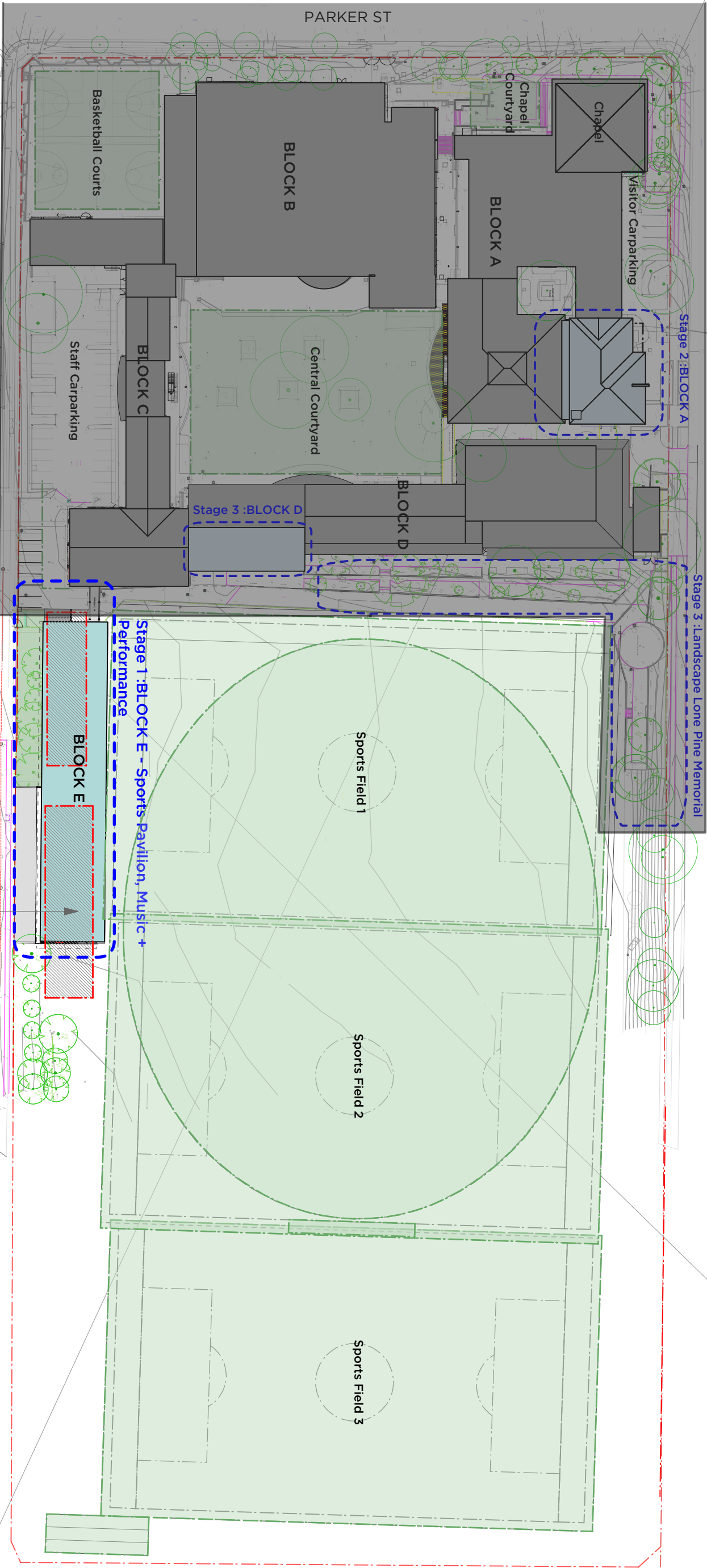
CLIENT REF & CONTACT S4 GASCOIGNS ST, KINGSWOOD NSW

DATE FEB 2019

SCALE NTS VAO 2794 DA102 P1



2 SITE MASTER PLAN
Scale: 1:1000



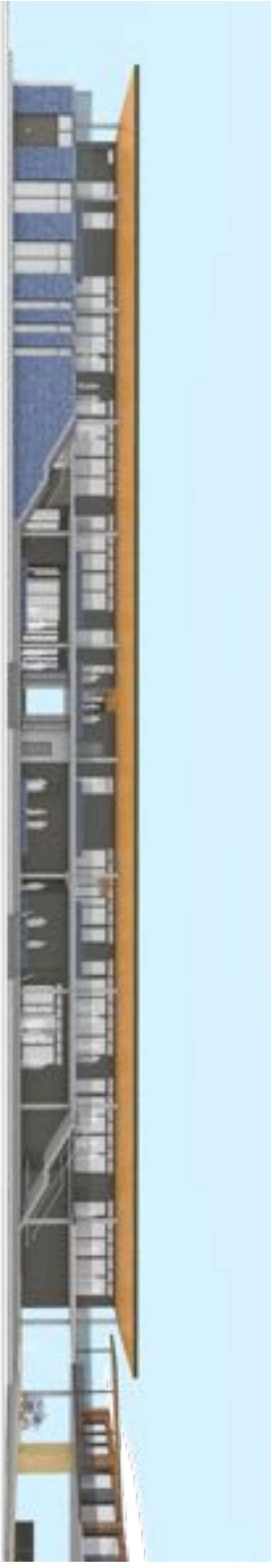
LEGEND - SITE ANALYSIS MAPPING

Existing two storey buildings

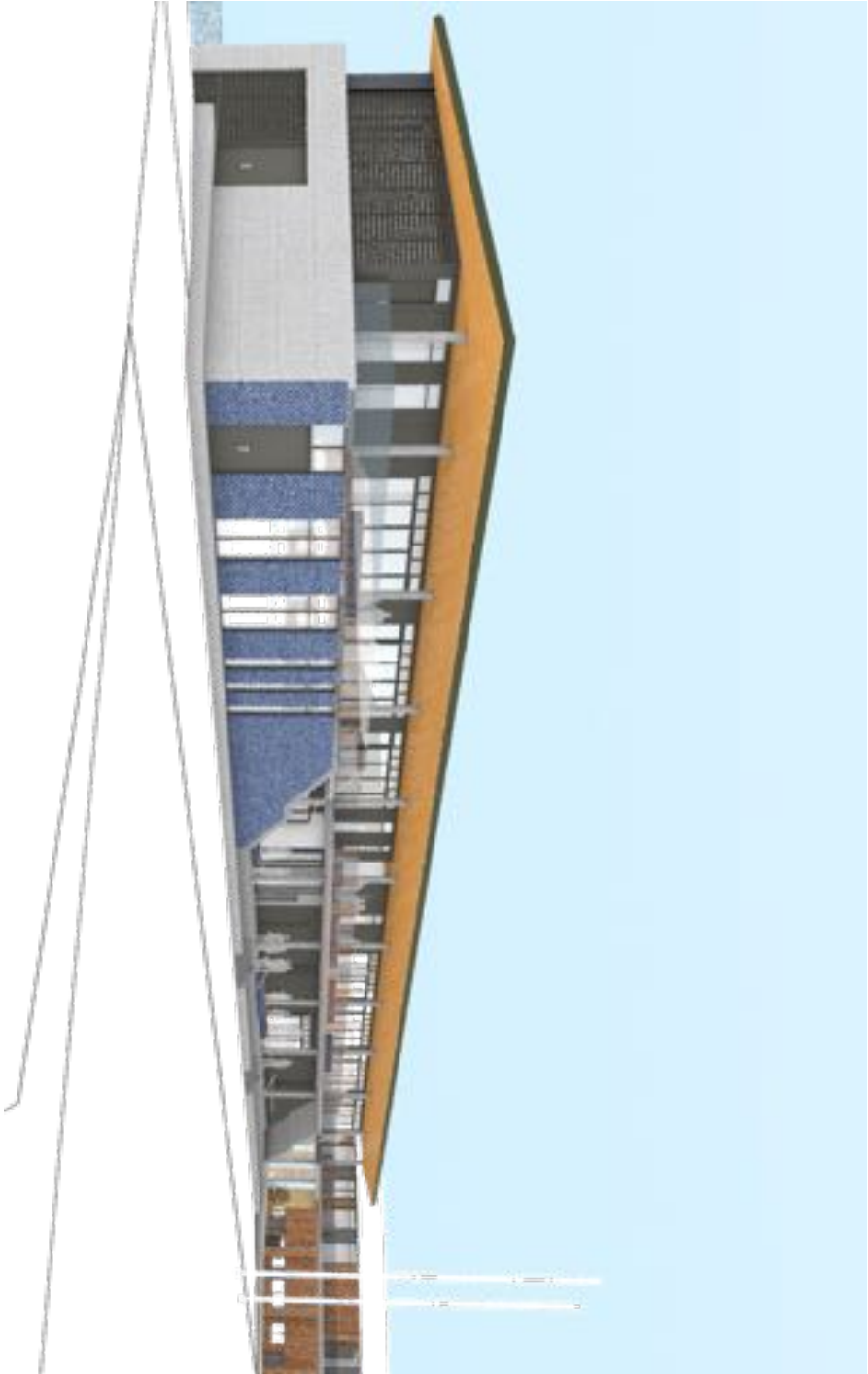
Future Masterplan Proposals

DA Proposal Block E

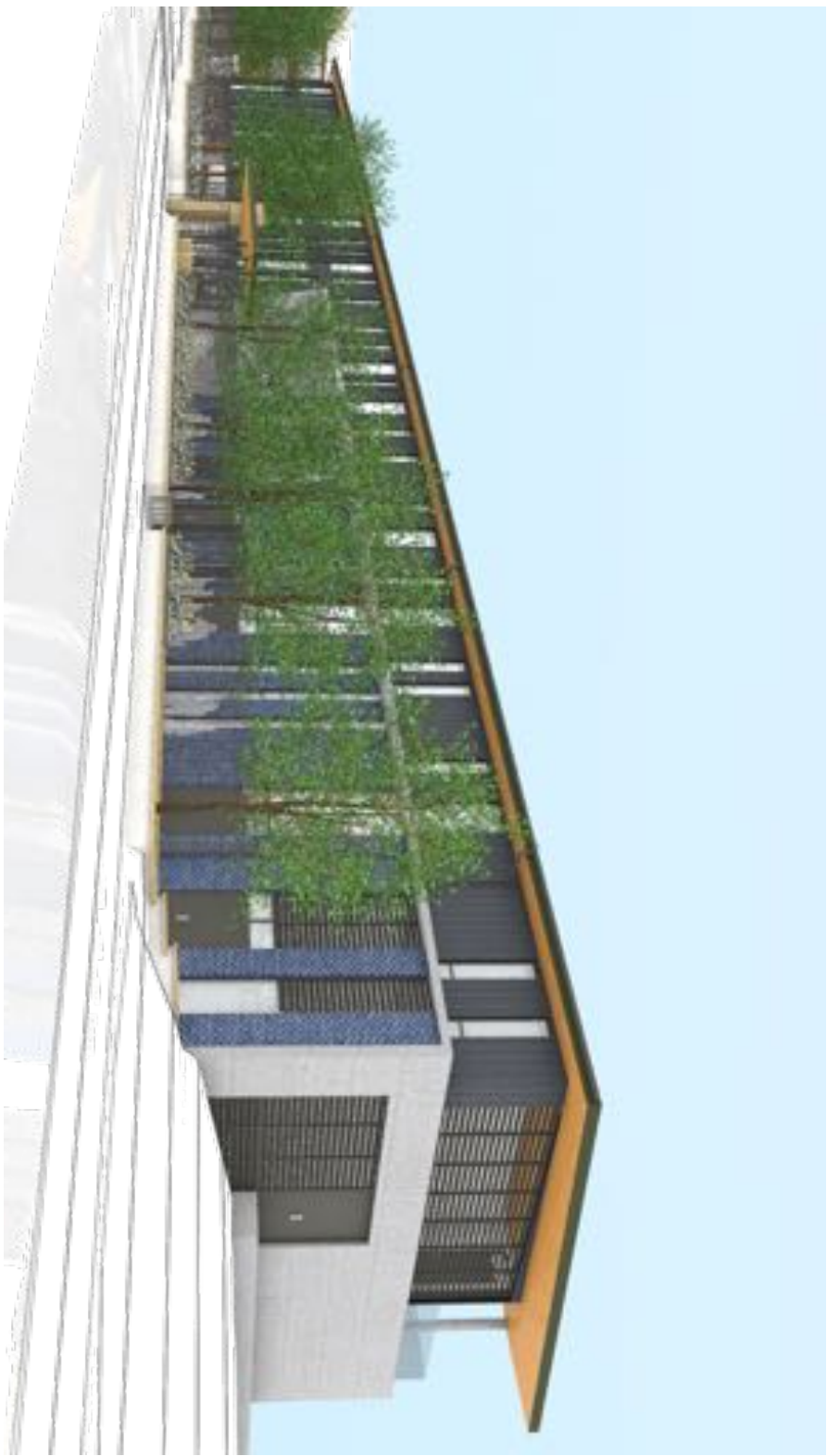
Proposed for demolition



Northern Elevation



North West Perspective



South West Perspective



54 Gascoigne St, Kingswood NSW

Architect

PMDL

Sydney Level 8, 28 Clarke Street Crows Nest NSW 2065
Phone +61 2 8458 5500 Email: sydney@pmdl.com.au

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Planning

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PO Box 230, Thornleigh NSW 2120
Phone +61 2 9980 6933 Email searp@adfplanning.com.au

D Group

j.com.au

Arterra

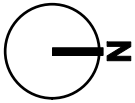
1.com.au

Structural

SW 2011



NTS



APPENDIX C

Important Information about your Environmental Report

Important Information about your Environmental Report

SCOPE OF SERVICES

The environmental report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client and Asset Geotechnical Engineering Pty Ltd ("Asset"), for the specific site investigated. The scope of work may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

The report should not be used if there have been changes to the project, without first consulting with Asset to assess if the report's recommendations are still valid. Asset does not accept responsibility for problems that occur due to project changes if they are not consulted.

RELIANCE ON DATA

Asset has relied on data provided by the Client and other individuals and organizations, to prepare the report. Such data may include surveys, analyses, designs, maps and plans. Asset has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, Asset will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Asset.

LIMITATIONS OF SITE INVESTIGATION

The investigation program undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation program and subsequent laboratory testing are extrapolated across the site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behavior with regard to the proposed development. Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

The engineering logs are the subjective interpretation of subsurface conditions at a particular location and time, made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates.

Therefore, the recommendations in the report can only be regarded as preliminary. Asset should be retained during the project implementation to assess if the report's recommendations are valid and whether or not changes should be considered as the project proceeds.

SUBSURFACE CONDITIONS ARE TIME DEPENDENT

Subsurface conditions can be modified by changing natural forces or man-made influences. The report is based on conditions that existed at the time of subsurface exploration. Construction operations adjacent to the site, and natural events such as floods, or ground water fluctuations, may also affect subsurface conditions, and thus the continuing adequacy of a report. Asset should be kept apprised of any such events, and should be consulted to determine if any additional tests are necessary.

VERIFICATION OF SITE CONDITIONS

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that Asset be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition

of change of soil and rock conditions requires experience and it is recommended that a suitably experienced environmental engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

REPRODUCTION OF REPORTS

This report is the subject of copyright and shall not be reproduced either totally or in part without the express permission of this Company. Where information from the accompanying report is to be included in contract documents or engineering specification for the project, the entire report should be included in order to minimize the likelihood of misinterpretation from logs.

REPORT FOR BENEFIT OF CLIENT

The report has been prepared for the benefit of the Client and no other party. Asset assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of Asset or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

DATA MUST NOT BE SEPARATED FROM THE REPORT

The report as a whole presents the site assessment, and must not be copied in part or altered in any way.

Logs, figures, drawings, test results etc. included in our reports are developed by professionals based on their interpretation of field logs (assembled by field personnel) and laboratory evaluation of field samples. These data should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

PARTIAL USE OF REPORT

Where the recommendations of the report are only partially followed, there may be significant implications for the project and could lead to problems. Consult Asset if you are not intending to follow all of the report recommendations, to assess what the implications could be. Asset does not accept responsibility for problems that develop where the report recommendations have only been partially followed if they have not been consulted.

OTHER LIMITATIONS

Asset will not be liable to update or revise the report to take into account any events or emergent circumstances or fact occurring or becoming apparent after the date of the report.