Structural Schematic Design Report

Meriden – Senior School Campus
New Centre for Music and Drama

Allen Jack + Cottier / May 2019

Rev 1

181478

Structural
Civil
Traffic
Facade
Consulting Engineers

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Contents

1.0 Introduction

The proposed new Centre for Music and Drama is located at the Meriden School, Senior School Campus at 3-13 Margaret Street, Strathfield.

Figure 1: Existing Site

The project broadly involves the demolition of the existing music building and construction of a new 3-storey structure with two levels of basement. The building is within the Senior School campus and is boarded by the Wallis Building to the North, the Hope Turner Building to the East, Margaret Street to the South and 15 Margaret Street to the West.

The proposed building will house a new music academy, drama facilities, music teaching rooms and staff facilities, whilst the basement will house additional functions including; practice rooms, recording studio, instrument storage, staff room and a drama performance space.

The figure below illustrates the proposed footprint for the new building.

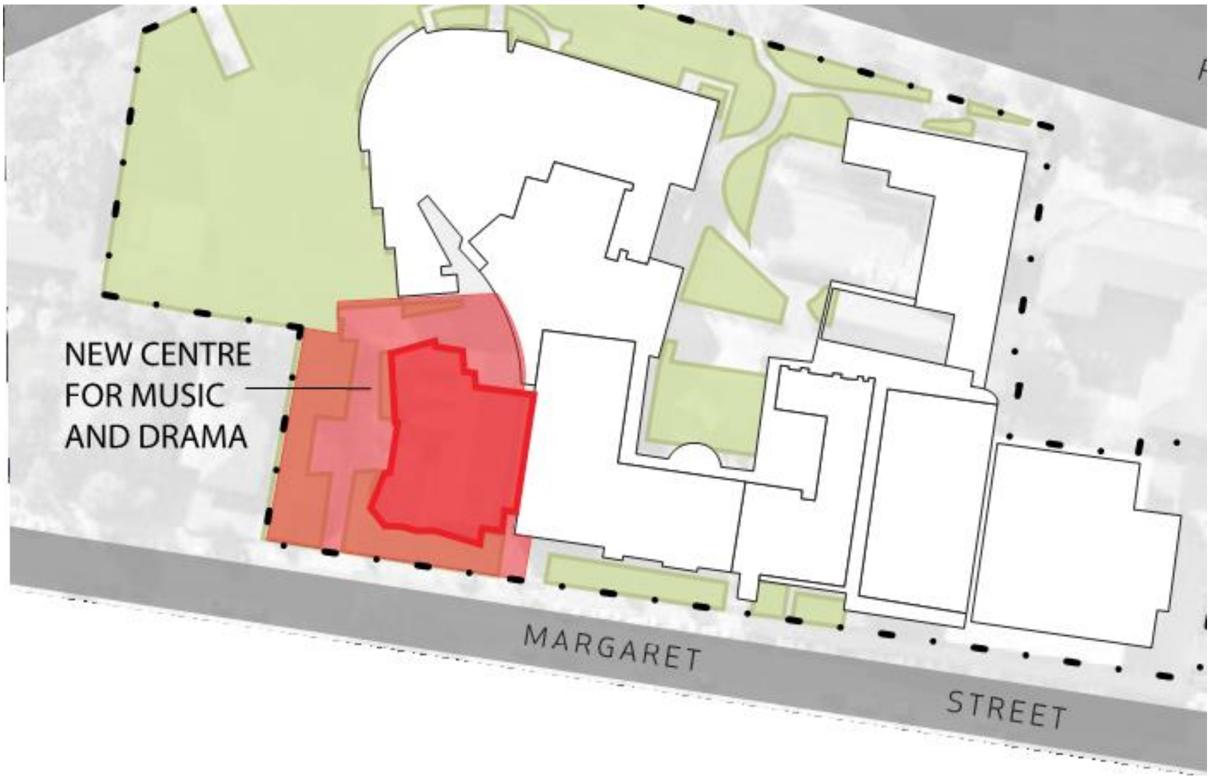

Figure 2: Proposed building

2.0 Site Overview

2.1 Existing Structures

The proposed location of the new Centre for Music and Drama is located at the site of the existing music building which is to be demolished in it's entirety, including footings, prior to the construction of the new building.

Wallis Building

Adjacent to the Northern/North-East edge of the proposed basement is the existing Wallis Building. The most adjacent portion of the structure dates from circa 2016 and comprises a two storey concrete and steel building. The building is shown to be founded on piles, has a suspended reinforced concrete slab and footing beams at ground floor. Vertical structure comprises load bearing masonry and concrete columns from ground to level 1, and level 1 to roof. Level 1 comprises a reinforced concrete slab, whilst the roof is lightweight, with steel beams and lightgauge purlins.

Hope Turner Building

To the East of the proposed building is the existing Hope Turner Building. From a visual inspection, the building appears to be a two storey masonry structure and from drawings relating to the adjacent Wallis Building works, there appears to be load bearing masonry with a concrete slab at level 1 and a tile clad timber framed roof.

A trial pit undertaken as part of the geotechnical report (TP108A) identified a shallow concrete strip footing beneath a brick footing founded on sandy gravel fill over stiff silty clay, with an assessed allowable bearing pressure of 100kPa.

2.2 Site Conditions and Geological and Subsurface Conditions

Douglas Partners undertook a geotechnical engineering investigation on the site in November 2018 (report number 86568.00) which summarised;

The location of the new building is a roughly rectangular-shaped area of about 920 m^2, with surface levels observed to be gradually dipping gently to the north from RL 18.8m AHD to RL 17.1m AHD.

Based on preliminary inspection, both the external brickwork of the existing building and the existing pavements at the site appeared to be in a relatively good condition.

The Geological survey of NSW 1:100,000 Series Sheet 9130 for Sydney indicates that the site is underlain by Ashfield Shale which typically comprises black to dark grey shale and laminite.

The site investigation included five boreholes and 5 trial pits adjacent to existing footings.

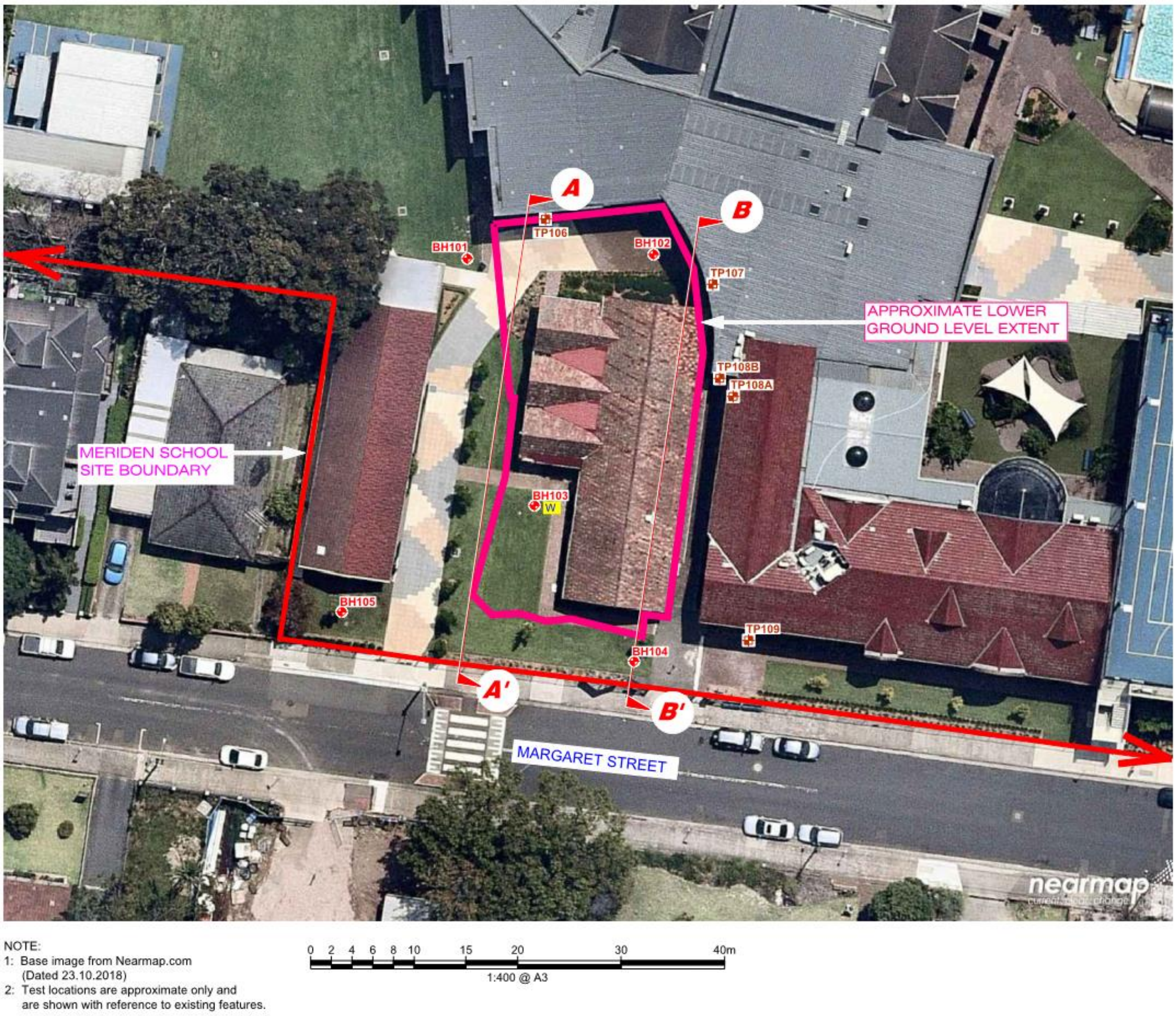

Figure 3: Bore Hole and Trial Pit Locations

The ground conditions were found to comprise filling over residual soils, over class V laminite (between 1.2m and 2.6m from ground), over class IV laminite over class III/II laminite (between 2.6m and 4.2m below ground).

One water level monitoring well was installed in BH103, and a measurement taken on 8/10/18 indicated a water level of RL 14.7m (3.4m below ground). The report goes on to summarise that groundwater seepage into the basement is expected to be controlled perimeter and subfloor drainage connected to a sump-and-pump system and that the basement can be designed and detailed as a drained basement.

The below table summarises the recommended foundation design parameters;

Table 12: Recommended Design Parameters for Foundation Design

Unit	Foundation Stratum	Maximum Allowable Pressure (Serviceability)		Maximum Ultimate Pressure (Ultimate)		Young's Modulus, E (MPa)
		End Bearing (kPa)	Shaft Adhesion (Compression) (kPa)	End Bearing (kPa)	Shaft Adhesion (Compression) (kPa)	
2	Residual Soil Stiff to Very Stiff Clay or Stronger	150	-	450	-	25
3	Class V Laminite	700	70	3,000	100	70
4	Class IV Laminite	1,000	100	4,000	200	100
5	Class III / II Laminite	3,500	350	30,000	600	700

Figure 4: Recommended foundation design parameters

2.3 Existing Services

All existing in ground services are to be removed and rediverted prior to excavation for the proposed building.

3.0 New Development

The proposed structure is a three storey concrete framed building with two levels of basement.

3.1.1 Foundations and shoring

The basement is expected to comprise of a concrete soldier piled wall with shotcrete infill panels, which will provide retention in the temporary and permanent condition around the full perimeter of the basement.

Excavations of upto 6m are proposed for the northern half of the basement and 3.5m to the southern portion. Temporary ground anchors are anticipated, especially to the northern portion of the basement.

Spacing of the soldier piles will be reduced along the northern and eastern perimeters of the basement due to the proximity of the adjacent buildings.

Based on the findings of the geotechnical report, the northern portion of basement excavation is expected to be in to the class III/II laminite, whilst the southern portion is expected to be at the interface between the class V and class III/II laminite. To ensure uniform bearing strata, it is proposed to adopted pad footings for the internal columns founded on the class III/II laminate. Locally increased excavation may be required to the southern portion of the site to achieve the uniform bearing strata.

3.1.2 Stability and vertical structure

Global stability will be derived from the centrally located reinforced concrete lift shaft and concrete walls around the stair core/adjacent amenities in the south-east corner of the building.

The vertical load bearing structural will generally comprise reinforced concrete columns.

3.1.3 Floor structures

The basement slab will be a conventional slab on ground, with drainage provided beneath in accordance with the recommendations of the geotechnical repot, details by the hydraulic engineer. The basement is a split level, and the change in level will be provisioned through the presence of a permanent batter internal to the building.

The suspended levels to part of level -1, ground floor, level 1, level 2 and the plant slab area at level 3 will be a combination of areas of concrete flat slab and concrete banded slabs. Post tensioning will be adopted where appropriate to achieve the spans required.

3.1.4 Roof and awning structures

The roof at level 3, the northern entry canopy roof and the entry canopy in the south-eastern entry awning roof will be lightweight clad, steel framed structures.

Steel framing will also be utilised to provide framing to the mansard type roof/walling around the top lift of the south-east stair shaft.

3.1.5 Alterations to existing structures

At ground floor within the Northern Courtyard, it is proposed to lower the existing levels of the slab on ground between the Wallis and Hope Buildings to tie in with the proposed building. Geotechnical trial pits have shown that the existing top of footing levels are immediately below the current external finishes. As a result, the tops of footings will be exposed by the new works, and they will require concealment in the landscape treatment (seating or similar).

To facilitate detailing of the interface between the proposed Centre for Music and Drama and the existing Hope Turner building, it is proposed to raise the western eaves levels of the existing roof. To facilitate these modifications, opening up works and an on site investigation to determine the sizing and grading of the existing timbers is required.

It is envisaged that secondary roof timbers will be constructed over the top of the existing with a lightweight stud wall built from the top of the existing western wall.

To ensure independence of the the existing Hope Building from the new adjacent structure, the connecting roof structure will be detailed such as to facilitate a sliding movement between the two structures.

3.1.6 Additional notable design elements

The central circulation stair located adjacent to the lift shaft comprises a reinforced concrete scissor stair, supported at each of the floor plates at the top/bottom of the stair flights, with an unsupported mid landing.

The northern east entry lobby is a triple height void space with a triple height glazed façade to the Northern side. Vertically spanning structural steel RHS sections are proposed to provide the lateral support for the glass.

The building is typically clad in masonry, which will be supported, via shelf angles. at each level from the slab edge/edge beams. Deflection limits of these supporting elements will be tightened up in accordance with the design parameters noted in section 0.

At level 2 there are two areas of landscape planting, the southern terrace is to receive shallow soil ‘extensive’ green roof buildup, whilst the northern terrace supports a planter box with deeper soil planting.

4.0 Design Parameters

4.1 Design Life

The design life for all new structural elements is to be 50 years.

4.2 Structural Importance Level

The structure is viewed as being a secondary school building with expected population exceeding 250, thus the adopted Importance Level = 3.

This importance level will be used in determining the wind and seismic loads on the structure.

4.3 Design Loadings

In general, all loads and load combinations shall comply with AS/NZS 1170 Parts 0 to 4 Structural Design Actions. Live load reductions will be applied as permitted by AS/NZS 1170.1. Generally, the floor design loads are:

4.3.1 Permanent Actions – Dead and Superimposed Dead Loads

Dead load shall be considered as the self-weight of the structure plus an allowance for services, walls and ceilings which vary significantly throughout the building. In general, 1kPa superimposed dead load would be included in the design.

4.3.2 Imposed Actions – Live Loads

Generally for the Centre for Music and Drama, the floor design live loads and superimposed dead loads are:

Occupancy Type	Live Load (kPa)	SDL (kPa)
General	5.0	1.5
Ground floor external courtyard	5.0	6.0 (TBC on determination of finishes and levels etc)
Northern External terrace at L2 (deck)	5.0	2.5
Northern External terrace at L2 (planter)	1.5	14.8 – (including 650 soil)
Southern External terrace at L2 (non trafficable roof)	1.5	10.8 – (including 450 soil)
Roof Plant room	5.0	2.5
Stairs	4.0	0.5
Structural Steel roof	0.25	0.5

Specific theatre rigging loads will be additional to the above loads. A theatre loading specification is to be provided by the theatre consultant prior to commencement on the next project stage.

4.3.3 Barriers

Barriers including parapets, balustrades and railings are to be designed in accordance with Table 3.3 of AS/NZS 1170.1.

4.3.4 Wind Loads

Wind loads are in accordance with AS1170.2 and based on the following parameters:

Region	A2
Importance Level (BCA Table B1.2a)	3
Annual probability of exceedance (BCA Table B1.2b):	1000 years
Regional Wind Speed	46 m/s
Terrain Category (all directions):	3

4.3.5 Earthquake Loads

Earthquake loadings shall be in accordance with AS1170.4 – 2007 (Earthquake actions in Australia) and AS/NZS1170.0 – 2002.

Hazard Factor (Z):	0.08
Site Sub-Soil Class:	Ce
Importance Level (BCA Table B1.2a)	3
Annual probability of exceedance (BCA Table B1.2b):	1000
Earthquake Design Category:	II
Probability Factor (Kp)	1.3

4.3.6 Load Combinations

The basic combinations for the ultimate limit states used in checking strength are as follows. These are based upon AS1170.0 section 4.

LOAD COMBINATION	G	Q	W_u	E_u
1	1.2	1.5		
2	1.2	Ψ_c	1.0	
3	1.0	Ψ_c		1.0
4	1.2	$1.5\Psi_l$		
5	1.35			
6	0.9		1.0 up	

The basic combinations for the serviceability limit states used in checking service are as follows. They are based upon AS1170.0 section 4.

LOAD COMBINATION	G	Q	W_s	E_s
7	1.0			
8		Ψ_s		
9		Ψ_l		
10			1.0	
11				1.0

G : structure self weight plus superimposed dead loads
Q : imposed action
W_u : ultimate wind action
W_s : serviceability wind action
E_u : ultimate earthquake action
E_s : serviceability earthquake action
Ψ_c : combination factor for imposed action
Ψ_s : short-term factor
Ψ_l : long-term factor

Load Duration Factors	Ψ_s	Ψ_l	Ψ_c
Distributed Actions - Floors	0.7	0.4	0.4
Distributed Actions – Roofs (concrete)	0.7	0.4	0.4
Distributed Actions – Roofs (steel)	0.7	0.0	0.4
Concentrated Actions - Floors	1.0	0.6	0.4
Concentrated Actions – Roofs (concrete)	1.0	0.6	0.4
Concentrated Actions – Roofs (steel)	1.0	0.0	0.0

4.3.7 Design Standards

The structural design will be in accordance with the latest revision of all relevant Australian Design Standards, Codes and other statutory requirements. As a minimum requirement, the design shall be based on, but not limited to;

Number	Edition	Title
AS/NZS 1170.0	2002	Structural design actions Part 0: General Principles
AS/NZS 1170.1	2002	Structural design actions Part 1: Permanent, imposed & other actions
AS/NZS 1170.2	2002	Structural design actions Part 2: Wind actions
AS 1170.4	2007	Structural design actions Part 4: Earthquake loads
AS 2159	2009	Piling – Design and installation
AS 3600	2009	Concrete Structures[*1]
AS 3700	2001	Masonry Structures
AS 4100	1998	Steel Structures
AS 2870	2011	Residential Slabs and Footings

[*1] – Certifier to review and advise as to which version of the concrete code the project is to be designed and certified.

4.4 SERVICEABILITY

4.4.1 Deflection Limits

Deflection limits for the concrete structures are generally as follows;

Maximum Floor Deflection Limit				
Element	**Dead**	**Incremental**	**Live**	**DL + LL**
Elements supporting masonry walls	Span/500	Span/750 [1.]	Span/500	Span/300 25mm max.
Other floor areas	Span/360 (25mm max)	N/A	Span/500	Span/300 30mm max.

1. Areas supporting normal weight masonry partitions. Masonry to be articulated.

Deflection limits for the steel roof structure are generally as follows;

Steel Rafter Deflection Limit				
Element	**Dead**	**Live**	**Wind**	**DL + LL**
Lightweight roof supporting set plasterboard ceiling	Span/500 (25mm max)	Span/600	Span/600	
Lightweight roof supporting timber / FC soffits	Span/500 (25mm max)	Span/300	Span/250	Span/250

4.4.2 Durability

For concrete elements this will be achieved by specifying all elements in accordance with section 4 of AS 3600 which sets out requirements for plain, reinforced and post tensioned concrete structures and members with a design life of 40 to 60 years. Exposure classifications are as follows.

Exposure Classification	Elements
A2	Internal
B1	External

Protective coatings to structural steel elements shall comply with AS/NZS 2312 and ISO 2063 for the long-term protection category.

4.4.3 Crack Control

Crack propagation in concrete elements due to shrinkage and temperature effects will be controlled by providing reinforcement quantities sufficient for a 'strong' degree of crack control where concrete slabs or soffits are to remain exposed.

Internally, where slabs are concealed, reinforcement quantities will be provided sufficient for a 'moderate' degree of crack control.

4.4.4 Fire Resistance Levels

Fire Resistance Levels (FRL) for the structural elements is to be in accordance with Specification C1.1 of the BCA. Note the FRL requirement for columns are the same as the level they are supporting.

Typically, the FRL (minutes) for structural elements is generally 120/120/120 where required by the BCA.

There is a concession in the BCA that no FRL is required for the roof steelwork. This will need to be reviewed if different fire compartments are required.

Based on the BCA report, it is expected that a fire engineered alternative solution will be produced relating to the fire separating performance of the existing wall to the Hope Turner Building.

5.0 Risks & Opportunities

Risk/Opportunity	Description
Impact to School Operation	Construction projects around operating facilities are always complex in their execution. There are a number of aspects of the project which will have an ongoing interaction with the School during decanting, construction and operation. It is important that these impacts are relayed to the stakeholders in the project once a more developed series of construction methodology are available.
Construction risks	The proposed structure is located adjacent to two existing buildings. One is supported on shallow footings and the other on piles. Monitoring during construction is recommended especially of vibration and shoring displacement during the basement excavation.
Theatre loading	Risk - structure does not have sufficient capacity for proposed theatre rigging requirements. Solution - Brief to be provided from theatre consultant prior to commencing next project stage and sufficient capacity provided in the as constructed building.

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Appendix A

Preliminary structural sketches

TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01

Member schedule

Columns (1% reinforcement + f'c = 40MPa UNO)

C1 = 600x350 - 50MPa
C2 = 600x400 - 50MPa
C3 = 600x300
C4 = 350x350
C5 = 500 dia
C6 = TBC
C7 = TBC
C8 = 400x400

Walls

200thk RC UNO (200 kg/m³ reo rate)

Slabs, beams and bands

Refer to the plans for dimensions of critical members
Reinforcement rate for PT elements for DA cost plan = 50kg/m³
PT rate for PT elements for DA cost plan = 6kg/m²
Reinforcement rate for RC Beams for DA cost plan = 220kg/m³

Stairs

Feature stairs in northern lobby - 250 throat + landing (300 kg/m³ reo rate)
Typical fire stairs - 180 throat + landing (180 kg/m³ reo rate)
Ground floor - where integral with the slab, throat thickness to be as per slab thickness

Footings

Pad footings founded in class III/IV laminite typical

PF1 under all columns - 1000x1000x600 deep

Shoring walls

Soldier piled wall with shotcrete infill panel typical

SW1 - 600 dia piles at 1500 c/cs + 1 row of temporary ground anchors
SW2 - 600 dia piles at 2000 c/cs + 1 row of temporary ground anchors

Pile socket, 1200 below bulk excavation level typical

Capping beam - allow for 750w x 600dp typical

Steel roofs

Rafter sizes TBC, initially allow for xx kg/m² on plan for structural steel.

25.3.19
SW3 - 600 dia at 700 c/cs, anchors tbc

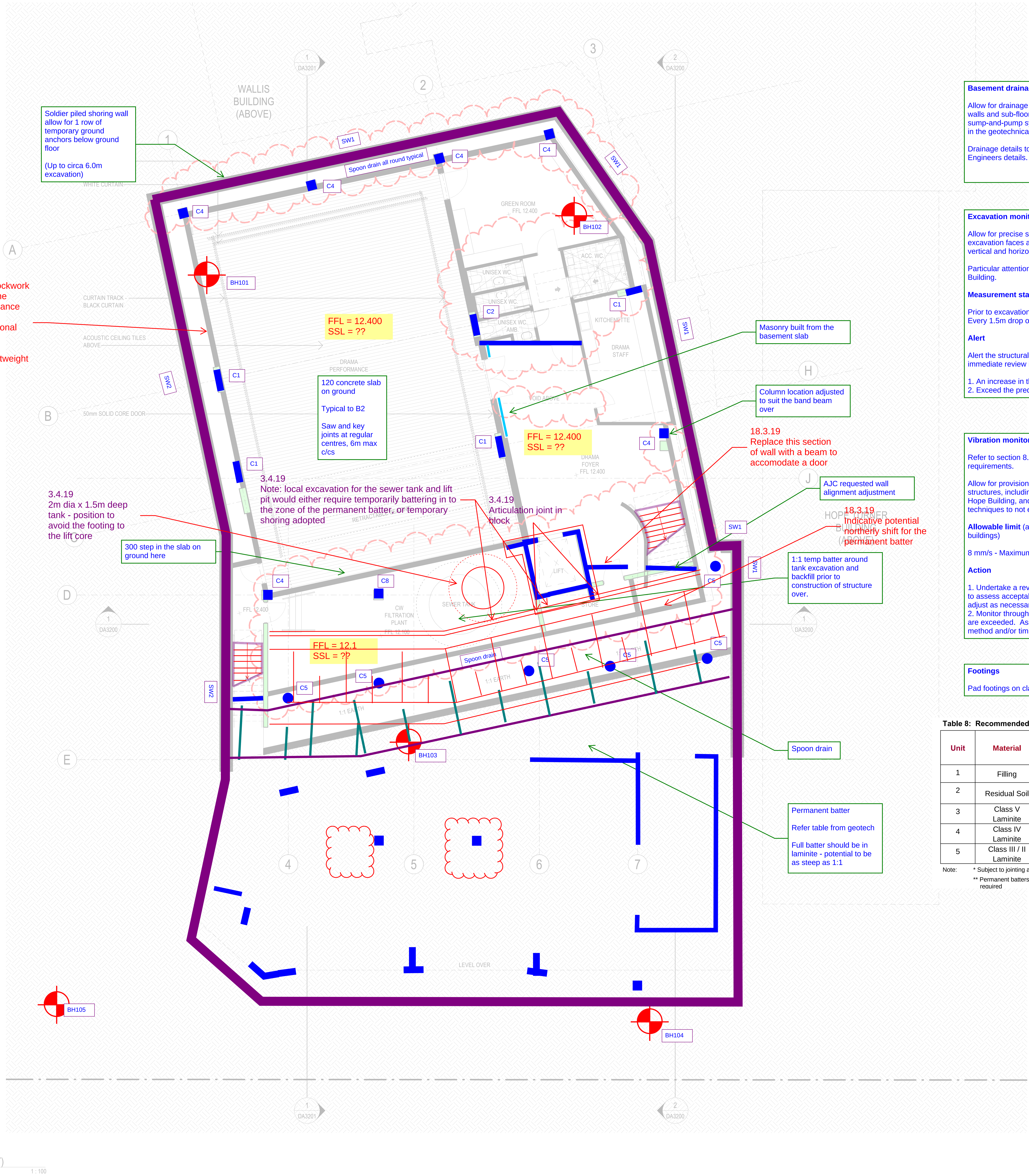
18.3.19
Likely to be blockwork walls around the drama performance

Allow for additional stiffeners

Might be a lightweight system

18/3/19

Phone discussion notes from chat with Josh marked up in red on the sketches



Basement drainage

Allow for drainage to the shoring walls and sub-floor connected to a sump-and-pump system as noted in the geotechnical report.

Drainage details to Hydraulic Engineers details.

Excavation monitoring

Allow for precise survey and/or inclinometer monitoring of excavation faces and nearby buildings/structures, to assess vertical and horizontal movements during excavation.

Particular attention to be made to the Wallis Building and Hope Building.

Measurement stages

Prior to excavation - Baseline measurements
Every 1.5m drop of excavation

Alert

Alert the structural and geotechnical engineer to allow for immediate review if the measurements show;

1. An increase in the rate of movement
2. Exceed the predicted movement values

Vibration monitoring

Refer to section 8.3 of the Geotechnical report for full requirements.

Allow for provision of vibration monitoring to adjacent existing structures, including but not limited to the Wallis Building and Hope Building, and to select excavation machinery and techniques to not exceed the advised allowable vibration limits.

Allowable limit (applicable at the foundation level of existing buildings)

8 mm/s - Maximum VSPPV (vector sum peak particle velocity)

Action

1. Undertake a review at the commencement of rock excavation to assess acceptability of proposed excavation methodology - adjust as necessary
2. Monitor throughout the works - cease works if vibration limits are exceeded. Assess required alternatives to excavation method and/or timing

Footings

Pad footings on class III/II laminite

Table 8: Recommended Batter Slopes for Exposed Material

Unit	Material	Excavation Height (m)	Maximum Temporary Batter Slope (H : V)	Maximum Permanent Batter Slope (H : V)
1	Filling	<4 m	1.5 : 1	2.5 : 1**
2	Residual Soil	<4 m	1 : 1	2 : 1**
3	Class V Laminite	<4 m	0.75 : 1	1 : 1*
4	Class IV Laminite	<4 m	0.75 : 1	1 : 1*
5	Class III / II Laminite	<4 m	0.75 : 1	1 : 1*

Note: * Subject to jointing assessment by experienced Geotechnical Engineer/Engineering Geologist
** Permanent batters in soil may need to be reduced to 3H: 1V to facilitate maintenance of grassed slopes, if required

Drawing Status
NOT FOR CONSTRUCTION

1	11.09.18	PRELIMINARY FOR INFORMATION	JG	IH
2	19.11.18	PRELIMINARY FOR INFORMATION	JW	AD
3	23.11.18	PRELIMINARY FOR INFORMATION	JW	AD

MERIDEN
AN ANGLICAN SCHOOL FOR GIRLS

Architect
AJ+C

Project
MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET, STRATHFIELD NSW 2135

Proj No. 18019

Drawing Title
FLOOR Level -2 (BASEMENT)

Scale: As indicated @A1
Drawing No.: DA2000
Issue: 9

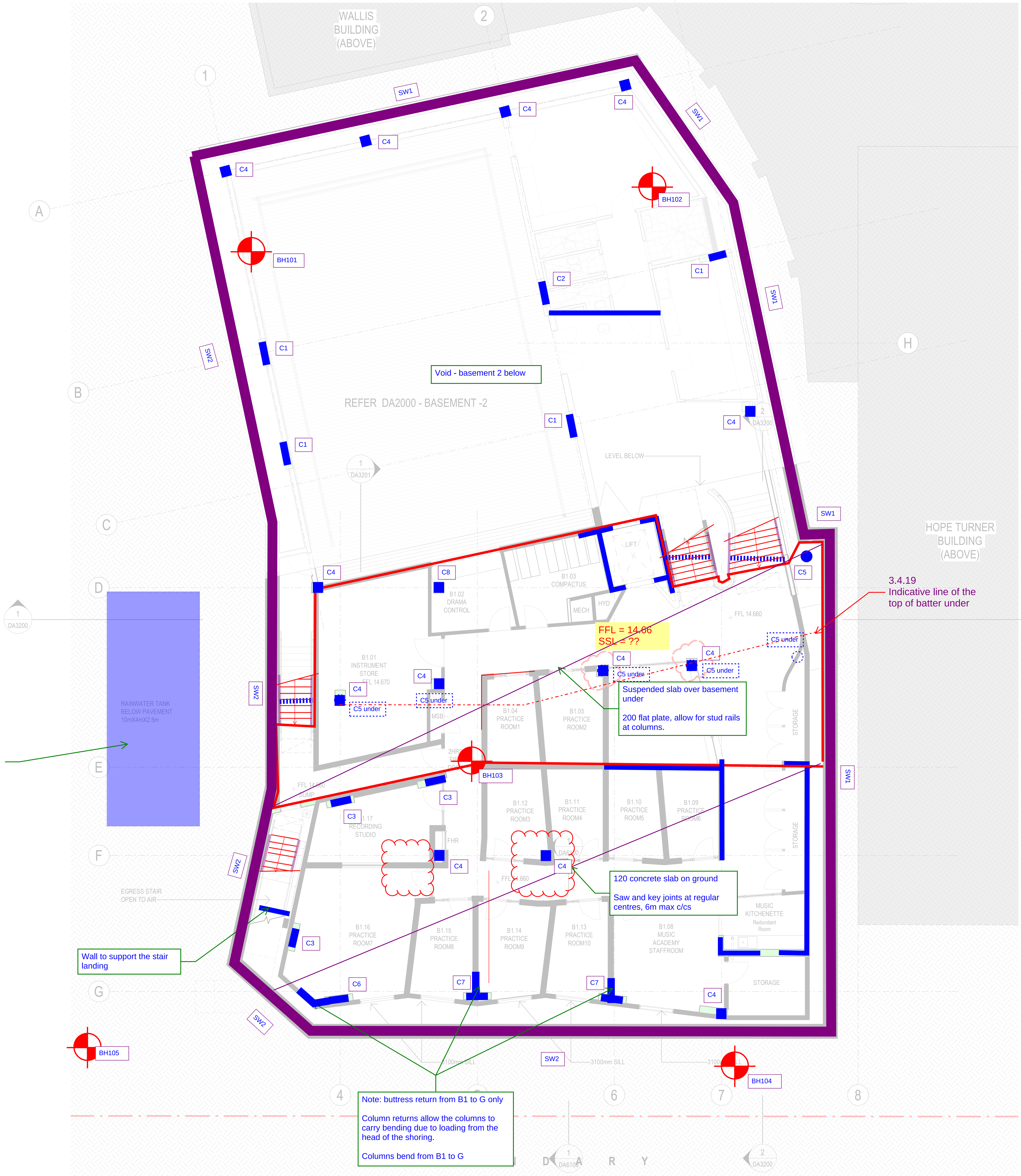
TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01

Member schedule

Refer to Basement -2 for global member schedule

Tank base on grade -

Wall to support the stair landing



Basement drainage

Allow for drainage to the shoring walls and sub-floor connected to a sump-and-pump system as noted in the geotechnical report.

Drainage details to Hydraulic Engineers details.

Excavation monitoring

Allow for precise survey and/or inclinometer monitoring of excavation faces and nearby buildings/structures, to assess vertical and horizontal movements during excavation.

Particular attention to be made to the Wallis Building and Hope Building.

Measurement stages

Prior to excavation - Baseline measurements
Every 1.5m drop of excavation

Alert

Alert the structural and geotechnical engineer to allow for immediate review if the measurements show;

1. An increase in the rate of movement
2. Exceed the predicted movement values

Vibration monitoring

Refer to section 8.3 of the Geotechnical report for full requirements.

Allow for provision of vibration monitoring to adjacent existing structures, including but not limited to the Wallis Building and Hope Building, and to select excavation machinery and techniques to not exceed the advised allowable vibration limits.

Allowable limit (applicable at the foundation level of existing buildings)

8 mm/s - Maximum VSPPV (vector sum peak particle velocity)

Action

1. Undertake a review at the commencement of rock excavation to assess acceptability of proposed excavation methodology - adjust as necessary
2. Monitor throughout the works - cease works if vibration limits are exceeded. Assess required alternatives to excavation method and/or timing

Footings

Pad footings on class III/II laminite

At bulk excavation level the interface between the class V and class III/II laminite is expected to be encountered. To ensure uniform bearing with the pads in the north portion of the building, allow to over excavate the pads and found on class III/II laminite

NOTE:

ALL DIMENSIONS AND EQUIPMENT POSITIONS SHOWN IN THE TECHNICAL DRAWINGS ARE INDICATIVE AND SUBJECT TO CHANGE DURING DETAILED DESIGN STAGE.

Drawing Status
NOT FOR CONSTRUCTION

Client
MERIDEN
AN ANGLICAN SCHOOL FOR GIRLS

Architect
AJ+C

Project
MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET,
STRATHFIELD NSW 2135

Proj No. 18019

Drawing Title
FLOOR Level -1
(BASEMENT)

Scale	Drawing No.	Issue
As indicated @A1	DA2001	11

TTW structural overlay
Preliminary information and queries
181478
SK190314.02
SK190403.01
Member schedule
Refer to Basement -2 for global member schedule
Extract from geotech report - TP106
Overlay of geotech BH markup - scaled at 385% rotated at 262 degrees
Locate by overlaying the BH marks
Temporary sliding joint at top of shoring (typical all round). Vertical dowel in grout tube.
Grout tube to be grouted 56 days after stressing of ground floor.
Temporary ground anchors not to be released until after the capping beam dowels are grouted
Hung lighting and theatre loads under?
Confirm the provisions at early stage
Masonry sat on ground floor slab shown thus
Min thickness to suit acoustic requirements TBC in conjunction with selected ceiling buildup under
Floating slab is not being provided in G 01
Lightweight framed raised floor
Note: footing in trial pit shown to stick out by 300mm and is 300mm below the current finishes RLs [DIFFERENT TO SHOWN HERE ON PLANS]
Landscaping provision TBC
Confirm on site the as-built pile toe RLs prior to commencement of basement excavation.
Adopt DMG methodology, or similar approved.
Civil slab on ground to be dowelled to side of suspended slab. Express joint in paving over
Extracts from Acor drawings
Job number - SY13 0331
WB S2.01 and S2.02
Planter box - 1m deep soil total. Top of wall 450mm above FFL
Locate outside of the band beam.
Provide trimming bands either side of planter box
Note: top of concrete is only 60mm below the existing finished levels
Existing slab to be demolished and levels lowered.
Seating to be introduced to conceal exposed footings.
Sloping soffit to follow general fall in top of slab
Top hung door
Assuming 300 step here.
Review at start of next phase to suit final civil levels
SSL varies
Steel column
Due to proximity to existing building and proposed shoring piles, an independent pile under this column in not possible
Thickened portion of slab under
Note: top of concrete is only 140mm below the existing finished levels
Existing slab to be demolished and levels lowered.
Seating to be introduced to conceal exposed footings.
Shelf angle for this length where masonry runs down through void
FFL = 17.630
SSL = 17.620
FFL = 17.620
SSL = 17.620
Topping or polished slab?
Lintel over door to be supported on steel column.
Lintel to continue and be connected to lift shaft
Soffit to follow throat of stair
If stair not poured with the slab, temporary prop along line of stair edge until stair gains strength
Slab to crank and span through stair throat
Requirement for beam TBC
FFL = 18.600
SSL = ??
Topping or polished slab?
Landscaping provision TBC
10x4x2.5 tank
Allow for 290 block wall around perimeter, 250 thk tank lid and base.
Assumes light traffic vehicles only.
Tank assumed to be constructed following the removal of the temporary ground anchors to the shoring.
Allow to temporarily batter around the tank.
Tank assumed to be constructed after the demolition of the adjacent existing building. If demolished prior - excavation will need to be shored around, and/or the existing building underpinned adjacent to the excavation
15 MARGARET STREET
Beam and column under the operable door added to limit the slab deflections under the operable door to ensure seal to the door when closed
SSL varies
FFL = TBC
SSL = ??
Site inspection required to determine extent of works associated with this new entry
HOLD - area TBC upon receipt of revision arch drawings
Fold in the slab
Doubles as beam
Allow for stud rails at columns, typical
25.3.19
SW3
Allow for shelf angle to pick up masonry at stair void
No low level windows along this edge
Edge beams typical
FFL = 18.600
SSL = ??
On grade stair to civil details
Note: falls to the south
SSL varies
Shelf angle from upper slab to support brick
Windows between shoring and ground from here around to the SW corner
Slab at low level, run through to the far side of the beam and tie to beam on the column line
RC slab at low level
Thickness TBC
Refer to civil for retaining walls, drainage etc.
Extract from geotechnical report - TP107
Extract from geotechnical report - TP108B
Extract from geotechnical report - TP108A
Extract from geotechnical report - TP109
BH101
BH102
BH103
BH104
BH105
TP107
TP108A
TP109
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Architect
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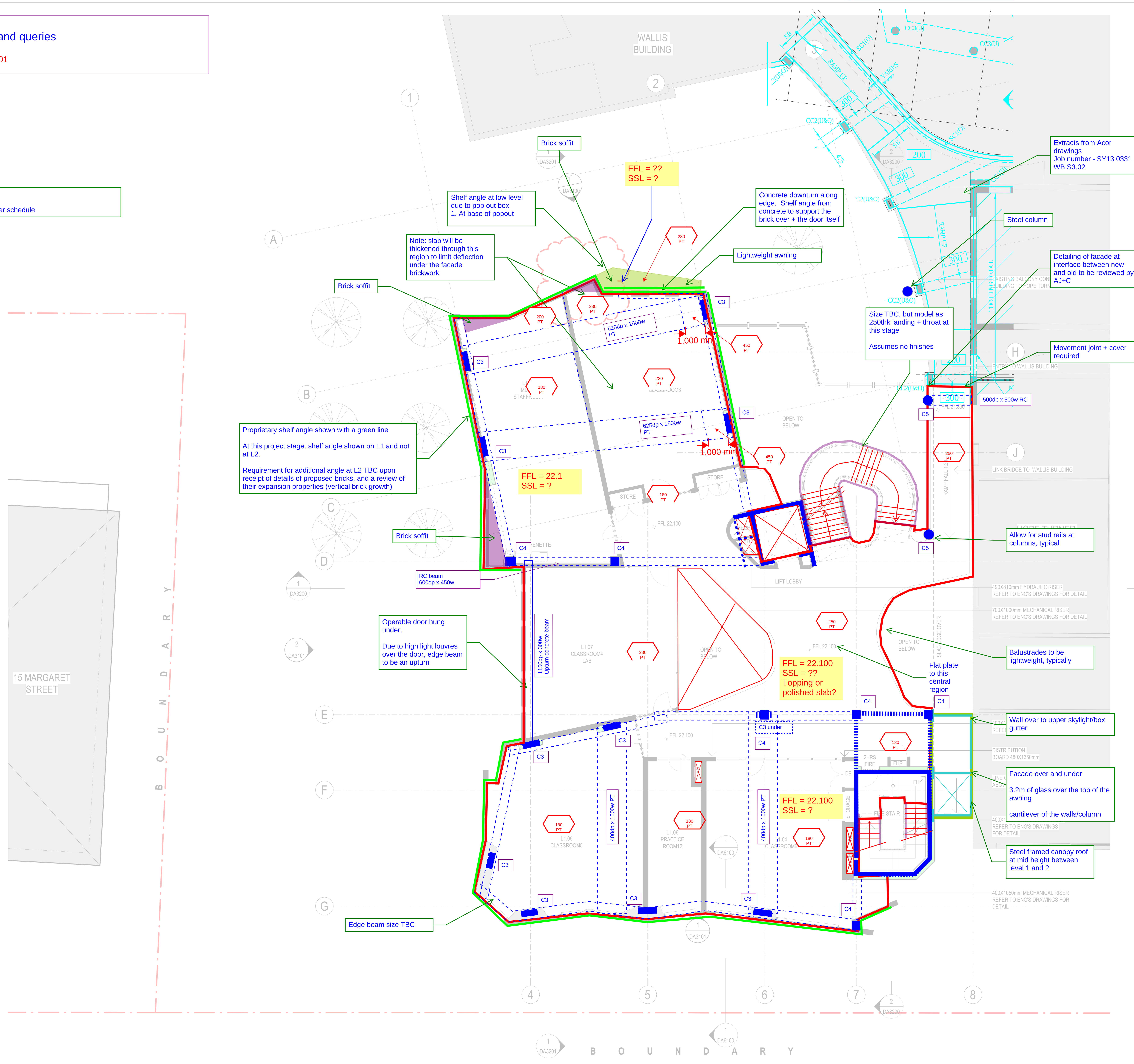
Project
MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET, STRATHFIELD NSW 2135
Proj No. 18019
Drawing Title
FLOOR (GROUND)
Ground
Scale
As indicated @A1
Drawing No.
DA2002
Issue
12

TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01

Member schedule

Refer to Basement -2 for global member schedule



Drawing Status
NOT FOR CONSTRUCTION

MATERIAL - LEGEND	
MATERIAL CODE	MATERIAL DESCRIPTION
	18mm LAMINATE, WHITE - NATURAL FINISH WITH INTEGRAL SPLASHBACK
AL	ALUMINIUM
BLK	CONCRETE BLOCK
BR2	BRICK WORK
BRK1	BRICK WORK
BRK2	BRICK WORK
BWK	BRICK WORK
CFC1	Cement Render
CFC2	METAL CLADDING
CONC-1	CONCRETE FLOOR FINISH--TYPE 1
CONC-2	CONCRETE FLOOR FINISH--TYPE 2
CPT	CARPET
CT	CEILING TILES
FC	FIBER CEMENT
GL1	ALUMINIUM FRAMED GLAZING (CLEAR)
GRASS	
MC	METAL CLADDING
MC1	Paint Finish
MR	METAL ROOF
OFC	OFF-FORM CONCRETE
PB	GYPSUM WALL BOARD
PCONC	POLISHED CONCRETE
PLY	PLYWOOD
TF	TIMBER FLOOR BOARDS
TL	TILE FLOOR
VNL	VINYL FLOOR

NOTE:

ALL DIMENSIONS AND EQUIPMENT POSITIONS SHOWN IN THE TECHNICAL DRAWINGS ARE INDICATIVE AND SUBJECT TO CHANGE DURING DETAILED DESIGN STAGE.

No	Date	Description	Ver	Aprv
1	11.09.18	PRELIMINARY FOR INFORMATION	JG	IH
2	19.11.18	PRELIMINARY FOR INFORMATION	JW	AD
3	23.11.18	PRELIMINARY FOR INFORMATION	JW	AD
4	04.12.18	ISSUE FOR QS	JW	AD
5	14.12.18	ISSUE FOR COORDINATION	JW	AD
6	18.12.18	ISSUE FOR COORDINATION		
7	14.01.19	ISSUE FOR COORDINATION	JW	AD
8	14.02.19	ISSUE FOR COORDINATION	JW	AD
9	06.03.19	ISSUE FOR COORDINATION	JW	AD
10	12.03.19	ISSUE FOR COORDINATION	JW	AD

Revisions

Key

N

Client

MERIDEN
AN ANGLICAN SCHOOL FOR GIRLS

Architect

A J+C
ALLEN JACK+COTTIER

79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
pl +61 2 9311 8222 fx +61 2 9311 8200
ABN 53 003 782 250

Project

MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET,
STRATHFIELD NSW 2135

Proj No. 18019

Drawing Title

FLOOR Level 1

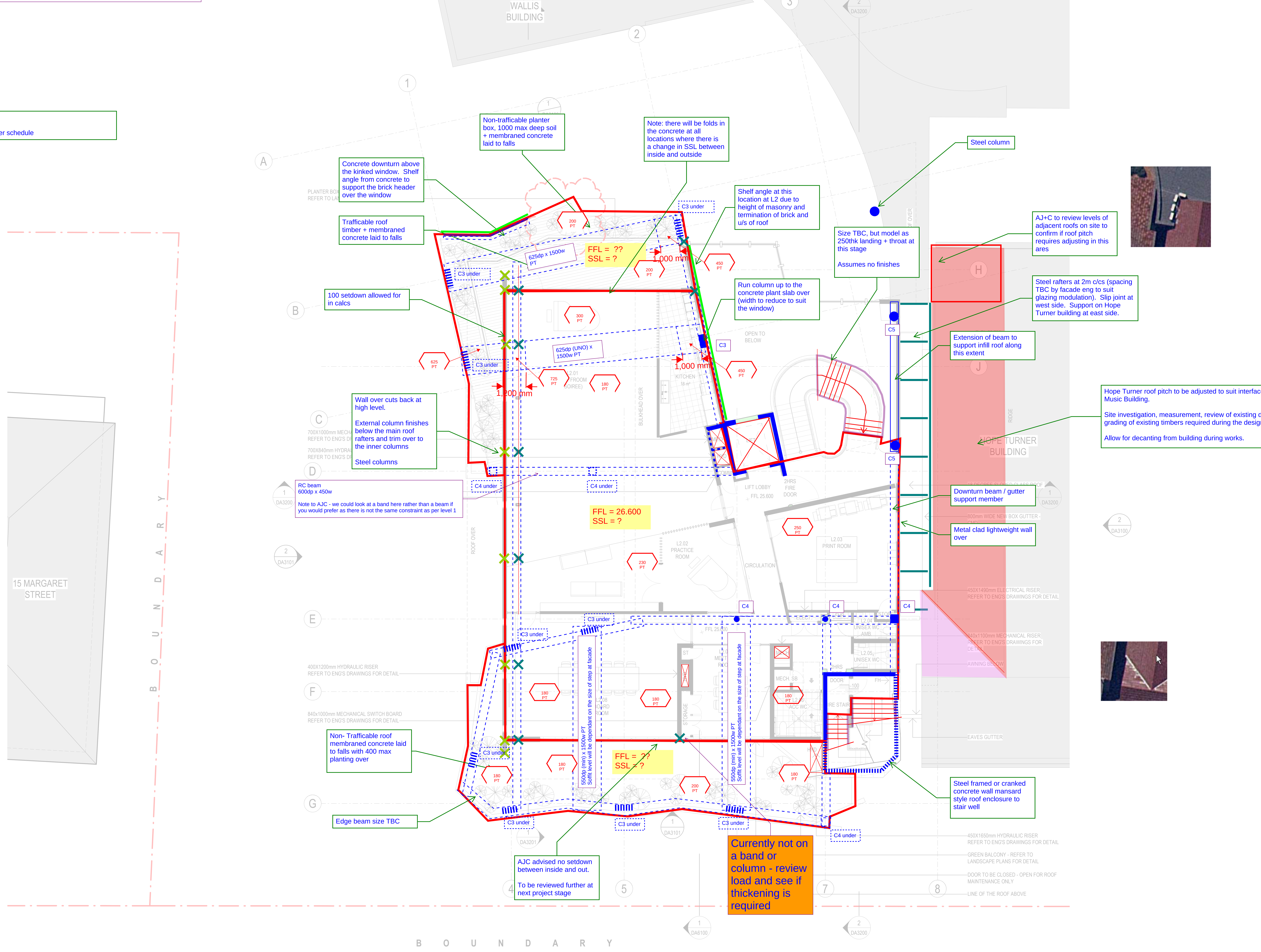
Scale	Drawing No.	Issue
As indicated @A1	DA2003	10

PLOT DATE & TIME: 12/03/2019 9:39:49 AM PLOTTED & CHECKED BY: JG

TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01

Member schedule

Refer to Basement -2 for global member schedule



Drawing Status

NOT FOR CONSTRUCTION

MATERIAL - LEGEND	
MATERIAL CODE	MATERIAL DESCRIPTION
	18mm LAMINATE, WHITE - NATURAL FINISH WITH INTEGRAL SPLASHBACK
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PCONC	POLISHED CONCRETE
PLY	PLYWOOD
TF	TIMBER FLOOR BOARDS
TL	TILE FLOOR
VNL	VINYL FLOOR

NOTE:

ALL DIMENSIONS AND EQUIPMENT POSITIONS SHOWN IN THE TECHNICAL ...NGS ARE INDICATIVE AND ...CT TO CHANGE DURING DETAILED ...N STAGE.

No	Date	Description	Ver	Aprv
1	11.09.18	PRELIMINARY FOR INFORMATION	JG	IH
2	19.11.18	PRELIMINARY FOR INFORMATION	JW	AD
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8	14.02.19	ISSUE FOR COORDINATION	JW	AD
9	06.03.19	ISSUE FOR COORDINATION	JW	AD
10	12.03.19	ISSUE FOR COORDINATION	JW	AD

Revisions

Key

N

Client

MERIDEN
AN ANGLICAN SCHOOL FOR GIRLS

Architect

AJ+C
Allen Jack+Cottier

Project

MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET,
STRATHFIELD NSW 2135

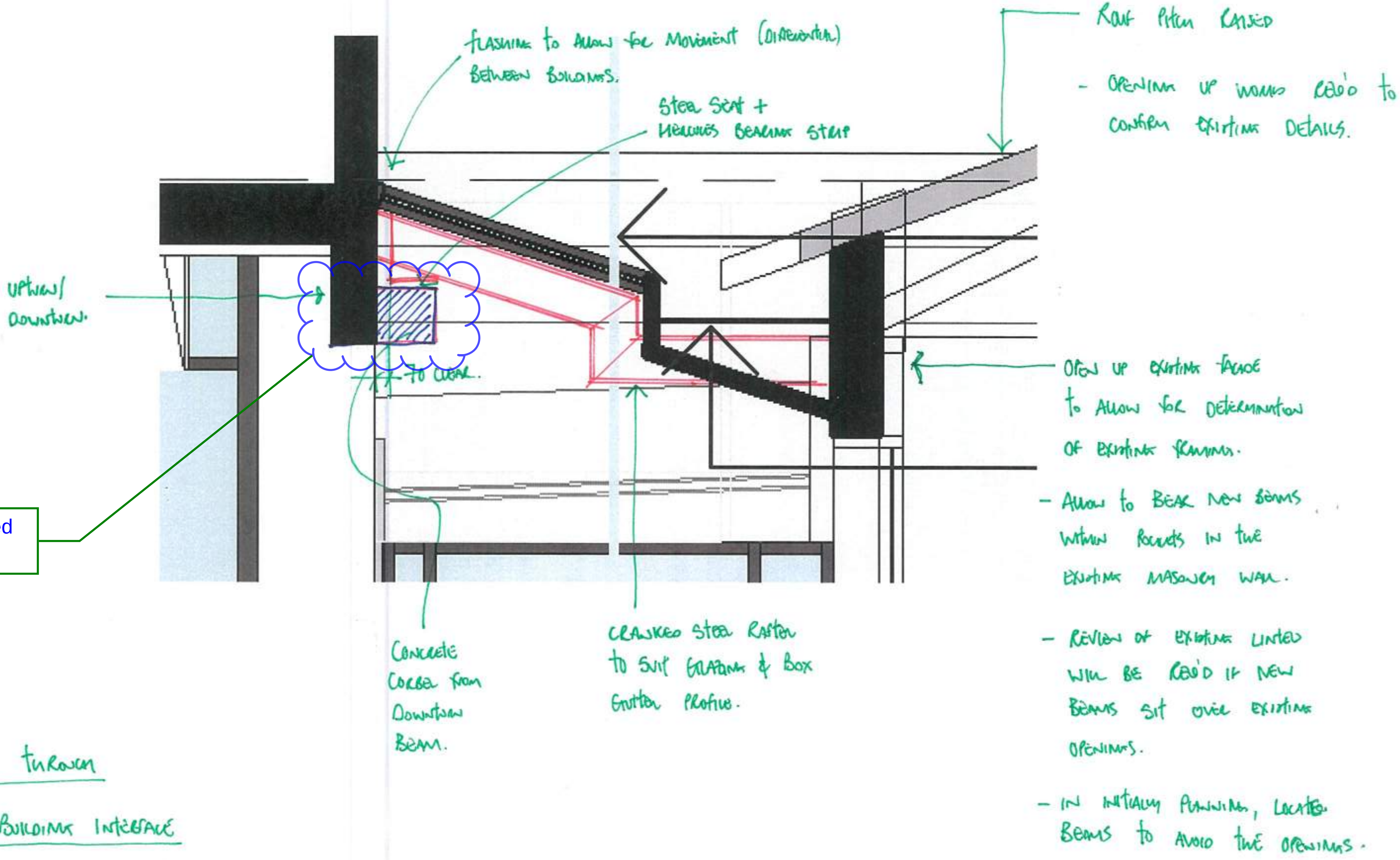
Proj No. 18019

Drawing Title

FLOOR Level 2

Scale	Drawing No.	Issue
As indicated @A1	DA2004	10

TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01



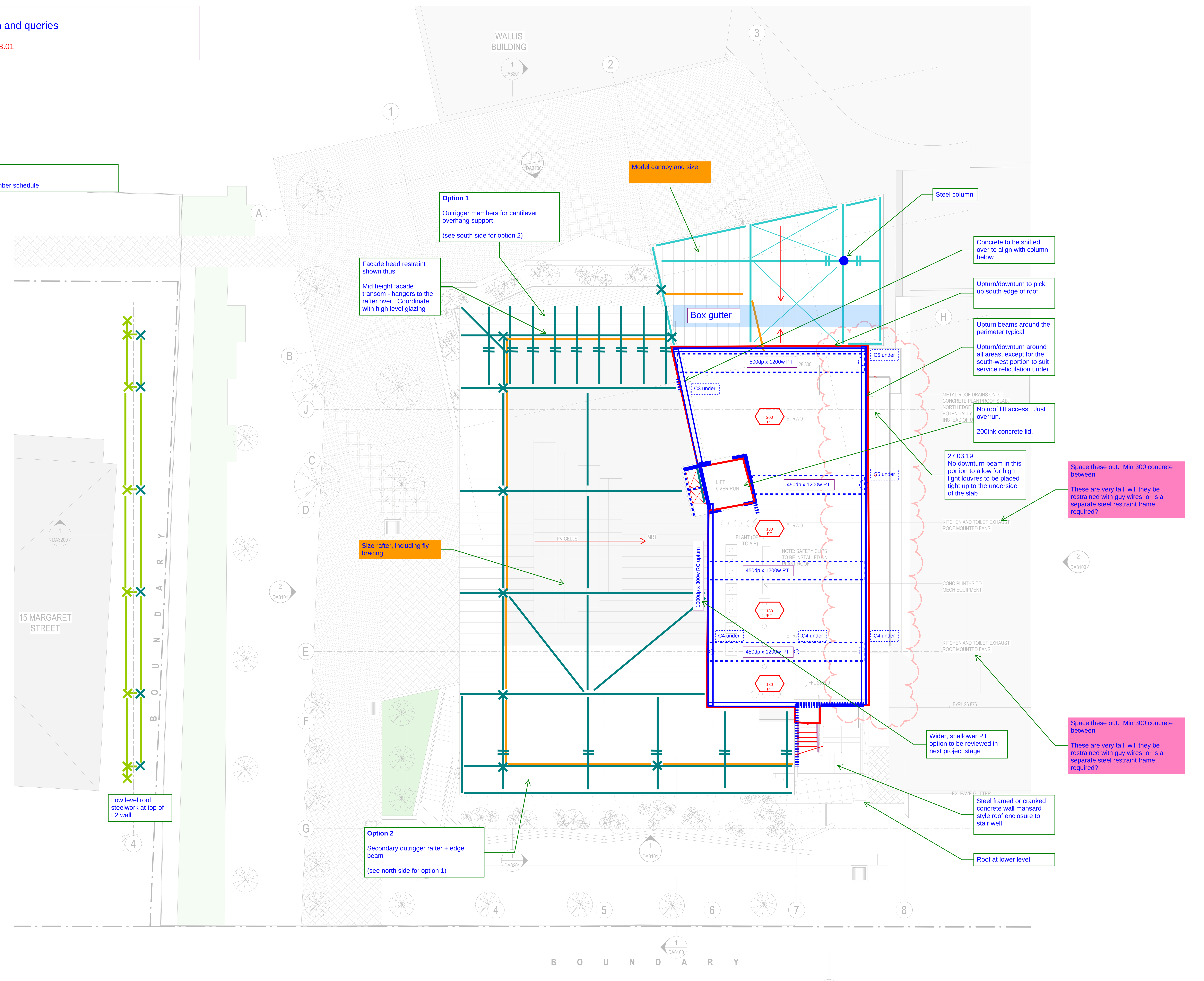
Corbel size to be refined as far as possible

Typical section through CMD / Hope building interface at level 2.

TTW structural overlay
Preliminary information and queries
181478
~~SK190314.02~~ SK190403.01

Member schedule

Refer to Basement -2 for global member schedule



Drawing Status
NOT FOR CONSTRUCTION

NOTE
ALL DIMENSIONS AND EQUIPMENT POSITIONS SHOWN IN THE TECHNICAL DRAWINGS ARE INDICATIVE AND SUBJECT TO CHANGE DURING DETAILED DESIGN STAGE.

Client
MERIDEN
AN ANGLICAN SCHOOL FOR GIRLS

Architect
AJ+C
Allen Jack+Cottier

Project
MERIDEN CENTRE FOR MUSIC
13 MARGARET STREET,
STRATHFIELD NSW 2135

Proj No. 18019

Drawing Title
PLANT Level 3/roof

Scale
As indicated @A1

Drawing No.
DA2005

Issue
9

SDA

SDA Structures Pty Ltd ABN 36 149 969 915
Consulting Engineers

Studio 2, 61 Victoria Road
Rozelle, NSW 2039

Telephone 02 9810 6911
Email sda@sdastructures.com.au
www.sdastructures.com.au

Tuesday, May 6, 2019

Project Number: 18339

Allen Jack + Cottier
79 Myrtle Street
Chippendale NSW 2008
Att: Giselle Moore,

Dear Giselle,

Meriden School - Junior School – New Landscaped Playground – Sufficiency of Structural Design

We certify that we have prepared the structural design of the works at Junior School – New Landscaped Playground, as indicated on drawings produced by OCULUS Landscape architecture, 4 Vernon street concept package dated 25/1/19, in accordance with the relevant structural clauses of the current NCC BCA *(Vol 2*) and the following SAA Codes of Practice:

AS 1720.1 - 2010 Timber Structures Code
AS 3600 - 2009 Concrete Structures Code
AS 3700 - 2011 Masonry Structures Code
AS 4100 - 1998 Steel Structures Code

and the new structure, is sufficient to carry the relevant loads specified in:

AS 1170.0 – 2002 – Structural Design Actions – General Principles
AS 1170.1 – 2002 - Structural Design Actions – Permanent, Imposed and Other Actions
AS 1170.2 – 2011 - Structural Design Actions – Wind Actions

Yours sincerely,

Kevin Mongey
CPEng MIEAust NER (Number-3016075)
SDA Structures Pty Ltd

SDA

SDA Structures Pty Ltd ABN 36 149 969 915
Consulting Engineers
Studio 2, 61 Victoria Road
Rozelle, NSW 2039
Telephone 02 9810 6911
Email sda@sdastructures.com.au
www.sdastructures.com.au

Monday, May 6, 2019

Project Number: 18339

Allen Jack + Cottier
79 Myrtle Street
Chippendale NSW 2008
Att: Giselle Moore,

Dear Giselle,

Meriden School - Lingwood Prep School – New Administration and Student Centre – Sufficiency of Structural Design

We certify that we have prepared the structural design of the works at Lingwood Prep School – New Administration and Student Centre, as indicated on drawings produced by Allen Jack + Cottier Architects Development Application dated 23/4/19 (Drawing list: DA0000, DA1000, DA1001, DA1100, DA2100, DA2101, DA2102, DA3100, DA3200, DA3201, DA3300, DA4100, DA5100, DA5101, DA5102, DA5103, DA5105, DA5106, DA9600), in accordance with the relevant structural clauses of the current NCC BCA *(Vol 1*) and the following SAA Codes of Practice:

AS 1720.1 - 2010 Timber Structures Code
AS 2159 - 2009 Piling Code
AS 3600 - 2009 Concrete Structures Code
AS 3700 - 2011 Masonry Structures Code
AS 4100 - 1998 Steel Structures Code

and the new structure, is sufficient to carry the relevant loads specified in:

AS 1170.0 – 2002 – Structural Design Actions – General Principles
AS 1170.1 – 2002 - Structural Design Actions – Permanent, Imposed and Other Actions
AS 1170.2 – 2011 - Structural Design Actions – Wind Actions
AS 1170.4 – 2007 - Structural Design Actions – Earthquake Actions

Yours sincerely,

Kevin Mongey
CPEng MIEAust NER (Number-3016075)
SDA Structures Pty Ltd