

**Project No.: 63407**

**March 15, 2018**

**STRUCTURAL CONCEPT PROPOSAL**

**FOR**

**MAJOR ALTERATIONS AND ADDITIONS**

**STEVENSON LIBRARY UPGRADE**

**SSD 8922**

**THE SCOTS COLLEGE**

**29-53 VICTORIA ROAD**

**BELLEVUE HILL**

**MARCH 15, 2018**

STRUCTURAL  
CIVIL  
AND  
WATERPROOFING  
ENGINEERS

This document has been prepared as part of the submission to Department of Planning for Consent Approval  
and does not form part of the Approved For Construction documentation

# **CONTENTS**

- 1- Structural concept proposal**
- 2- Survey Details**
- 3- Proposed works**

# **1- Structural Concept Proposal**

Project No.: 63407

March 10, 2018

**STRUCTURAL CONCEPT PROPOSAL  
STEVENSON LIBRARY  
SCOTS COLLEGE  
29-53 VICTORIA ROAD  
BELLEVUE HILL**

**Project Description:**

The Scots College are preparing a submission to the Department of Planning for proposed works major alterations and additions to the Stevenson Library.

In support of the submission it is required to provide a Structural Concept Proposal to confirm new shoring requirements and construction work to interface between the new and the existing buildings.

**Site Description:**

The Scots College School site where the Stevenson Library is located lies to the east of Victoria Rd, the north of Cranbrook Rd and on the western side of Cranbrook Lane. This portion of the school site has a total area of 44,730 m<sup>2</sup>.

The site survey confirms the site area and that the site slopes approx. 2.2% from southwest to northeast of the site. The site contains the Middle School Building and Oval. The average ground level of the oval varies between RL54.9 and RL52.2.

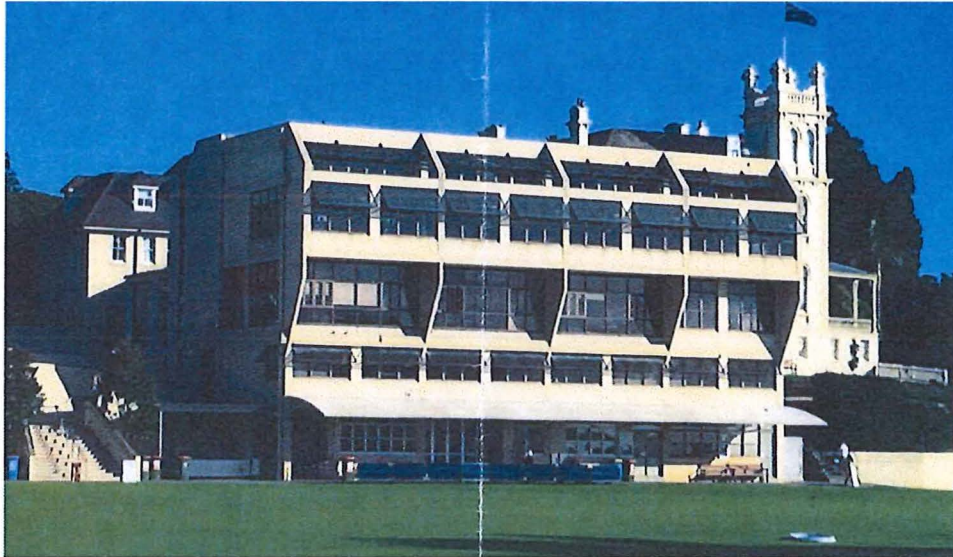
Along Victoria Road on the western boundary the site has been excavated into a rocky outcrop with rock exposed at the ground surface.

**Existing building:**

The existing building is a solid 5 storey concrete framed building with concrete columns, beams and slabs. Each floor level carries the weight of the floor elements with no load bearing walls other than the stair shafts at the northern and southern ends of the building.

All of the Architectural features, which are non-structural are made of masonry.

The building contains a services element situated below ground, under the quadrangle, to the south of the main library building.

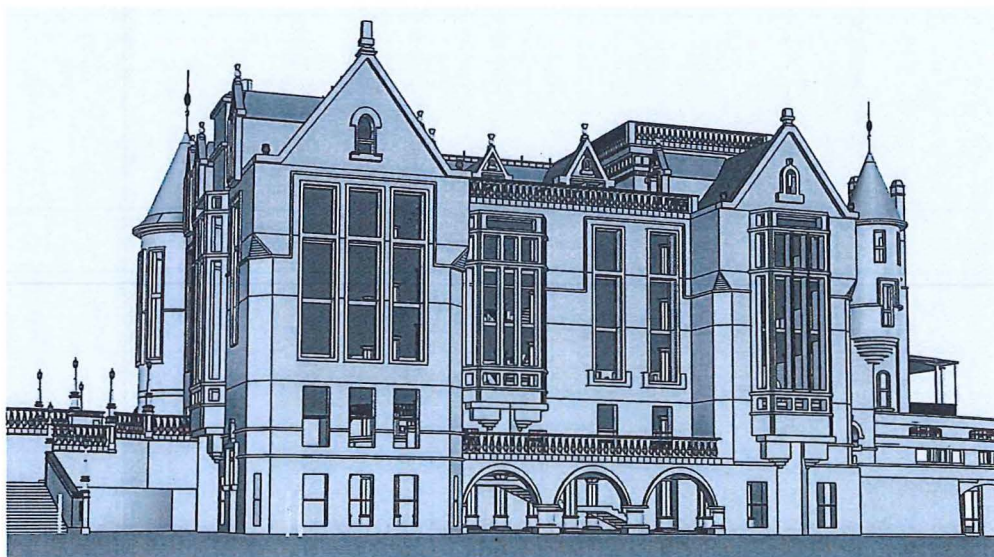


**The existing current concrete framed building to be enveloped by the new building design**

The School is in the process of obtaining the original drawings submitted to Woollahra Council for construction.

**Proposed building:**

The proposed building, while radically opposed in appearance to the existing, will enhance the appearance of the Scots College site by enveloping the existing building within the envelope of the new building.

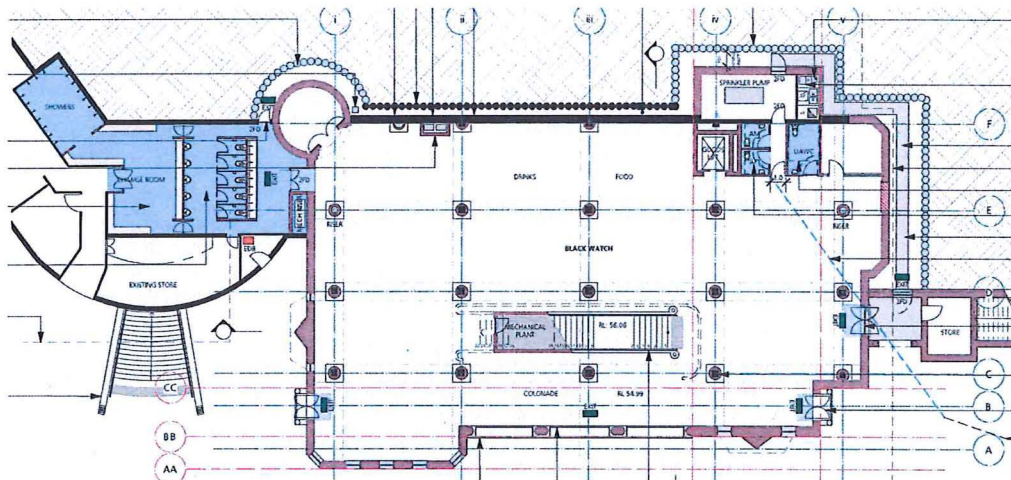


**The existing concrete framed building to be encapsulated by the new building design**



The proposed building will extend the footprint of the building by around 1,500mm to the north and south and around 4,000mm to the east. The western side will only be extended in the location of new services and lift within the existing shaft. The services section below ground to the south will also be extended.

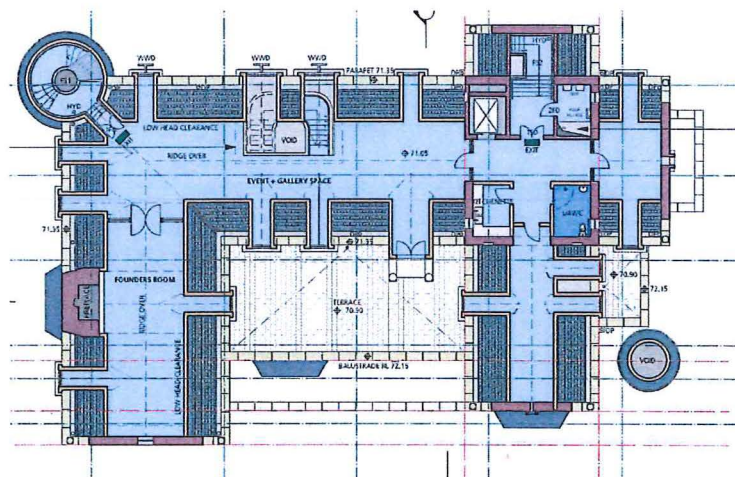
The additional new building area will add 1,642m<sup>2</sup> to the existing floor area



**New building plan shows new piles for shoring, demolished plan area and new below ground toilets**

As can be seen from the plan the western side of the existing building will require continuous concrete piles to support the ground behind the new services section requirements including lifts, toilets and sprinkler rooms

Atop the existing structure will be added a new concrete framed slab element suitable for the use as attic accommodation within the roof space

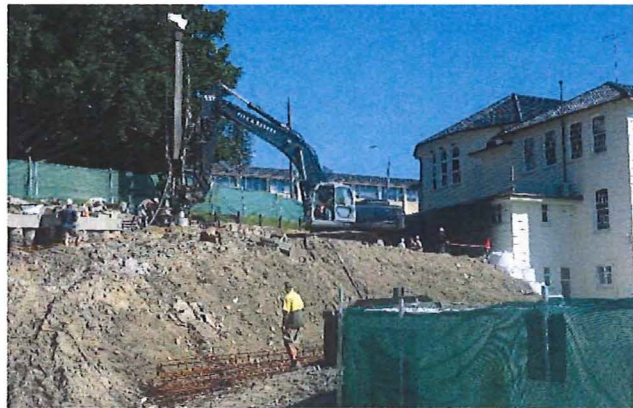


**New roof slab with attic accommodation within the roof space**

## **Construction elements**

### **Shoring:**

The site shoring for this project will be difficult for terrain and access. For the new Business Studies Centre, the School utilized the experience of a local piling contractor Pile & Bucket to install a shoring wall 10m high without tieback anchors.



We could utilize a similar contractor to this time provide a Tied Back Contiguous Concrete Pile shoring wall in the locations shown in green on the new building plan above. These new piles will compliment the existing piles shown adjacent.

### **Demolition:**

Naturally all demolition works will be compliant with the requirements of WorkCover and the Australian Standard AS2601 for Demolition Of Structures.

The demolition contract will not be extensive as the majority of the building remains intact with the removal of the facades when being enclosed by the new works outside the perimeter of the existing. At the rear where the loadbearing stair walls are to be demolished and the adjacent subsequently unsupported slab will require careful propping and demolition with small mechanical machines placed on the slabs to remain

### **Footings**

All new load bearing walls or column frames will be supported on concrete footings or pads piled down to the bedrock. The new façade will be supported on footing beams piled to rock. This will replicate and complement the footing system of the existing building.

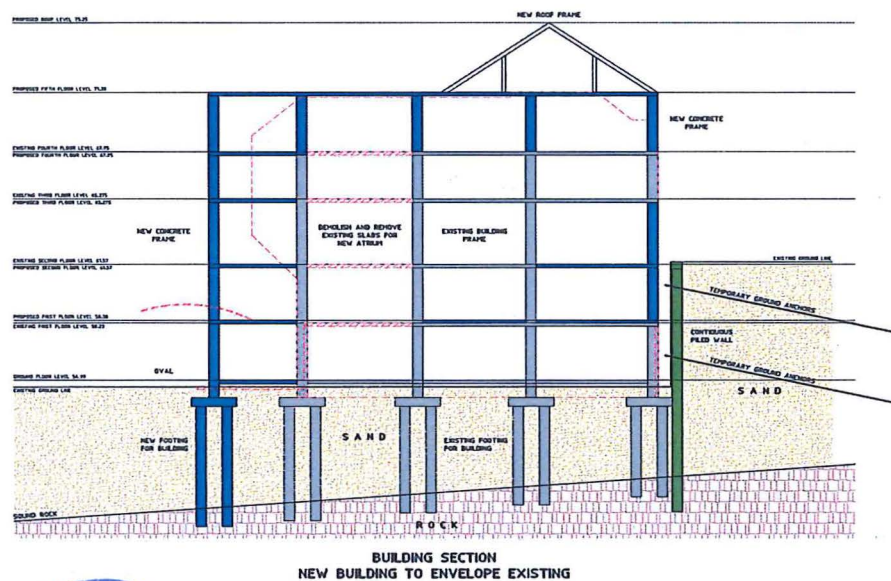
### **New Major Building Works**

The new building will be similarly concrete framed with load bearing concrete walls and column and slab frames.

To match the support of the existing building the new bay of columns and slabs, facing the oval to the east, will be added with the building supported on piles taken to the rock below

Additionally, new columns and slabs will extend over the full footprint of the building atop the current roof providing access for attic accommodation within the new roof form plus access to rooftop services

The new façade will replicate a traditional Scottish Manor House with the façade built of traditional rendered stone and brickwork



New roof slab with attic accommodation built atop the existing structure with a new facade element to the eastern side facing the oval and a new services section to the west accessed by the installation of a new shoring wall from the existing courtyard level

Yours faithfully,

Paul Bekker BE, M IEAust, CP Eng, M ACEA IPENZ  
BEKKER ENGINEERING DESIGN BURO PTY LTD



## **2 – Survey Details**



# **EASEMENTS:**

- (B) EASEMENT FOR ELECTRICITY AND OTHER PURPOSES 2.05 WIDE VIDE A83975
- (C) RIGHT OF WAY AND EASEMENT FOR ELECTRICITY PURPOSES 3.61 WIDE & VARIABLE WIDTH & LEASE TO ENERGY AUSTRALIA OF SUBSTATION PREMISES VIDE 9156955
- (D) EASEMENTS AFFECTING THE LAND ALONG & WITHIN THE SOUTH WESTERN BOUNDARY OF LOT 1 DP 929570 VIDE D258527
- (E) SITE OF PROPOSED EASEMENT FOR EMBANKMENT SUPPORT 1.22 WIDE AND VARIABLE WIDTH
- (F) SITE OF PROPOSED POSITIVE COVENANT 0.8 WIDE

## **LEGEND:**

- BW BOTTOM OF WALL
- ELP ELECTRIC LIGHT POLE
- PH FIRE HYDRANT
- FLR FLOOR LEVEL
- RIG RIDGE
- RR ROOF RIDGE
- TC TOP OF CHIMNEY
- TG TOP OF GUTTER
- TK TOP OF KERB
- TGS TOP OF GRATE
- TR TOP OF ROCK
- TW TOP OF WALL
- UAC UNIDENTIFIED ACCESS CHAMBER
- US UNDERSIDE OF GUTTER
- U/S UNDERSIDE OF FLOOR

## **NOTES:**

- THE PURPOSE OF THIS SURVEY WAS TO OBTAIN TOPOGRAPHICAL DETAIL AS REPRESENTED ON THIS PLAN
- BOUNDARIES HAVE BEEN SURVEYED BASED ON PUBLIC RECORDS. PRIOR TO CONSTRUCTION CORNERS SHOULD BE MARKED
- LEVELS SHOWN HEREON ARE RELATED TO AUSTRALIAN HEIGHT DATUM (A.H.D.)
- TREE CANOPIES AND HEIGHTS ARE APPROXIMATE ONLY AND SHOULD BE VERIFIED BY DETAILED SURVEY IF CRITICAL TO DESIGN
- SERVICES AND PIT INFORMATION SHOWN RELATES TO VISIBLE DATA AT GROUND SURFACE AND DOES NOT INDICATE SIZE OR POSITION OF BELOW SURFACE FEATURES. SYMBOLS SHOWN ON PLAN MAY NOT BE ACTUAL DIMENSIONS
- CONTRACTORS SHOULD CONSULT WITH SERVICE AUTHORITIES (DBYD) PRIOR TO ANY WORKS AT SITE
- THIS PLAN MUST NOT BE ALTERED IN SCALE

CAD REFERENCE: 1601403\_160123.DWG

VER	BY	AMENDMENTS	DATE
B	J.E.	BUSINESS TWO STOREY BUILDING ABOVE DEYAN UPDATED IN ASPHALT, PRIORITY, ROOF DETAIL UPDATED ON BUILDING WEST OF DINING HALL	19/12/18

SURVEYOR: D.G.W. DRAWING: D.A.	CHECKED: D.G.W.	DATUM: A.H.D.
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SURVEYORS REF.  
**1601403**  
VERSION 8  
24 JULY 2009  
SHEET 1 OF 2

ORIGINAL SCALE 1:500	SHEET SIZE A1
LENGTHS ARE IN METRES	

**BW** Beveridge Williams  
Incorporating Dunlop Thorpe  
Sydney ph: 02 9283 6677  
www.beveridgewilliams.com.au

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CLIENT: THE SCOTS COLLEGE  
c/o JCA ARCHITECTS  
VICTORIA ROAD  
BELLEVUE HILL  
FEATURE & LEVEL SURVEY

TITLE: PLAN OF THE SCOTS COLLEGE  
VICTORIA ROAD  
AT BELLEVUE HILL  
L.G.A. WOOLLAHRA

### **3 - Proposed works**



**GENERAL NOTES**

- Consult with ALL relevant authorities prior to commencing work.
- (1/100) Scale: All dimensions are nominal - should be confirmed on site prior to construction.
- Obtain all relevant information from relevant parties to construction.
- Bring discrepancies to the immediate attention of the Architect.
- If any aspect of the work is not shown, the Architect shall be responsible for the design.
- All drawings must be used in conjunction with the current contract, specifications, schedule of materials, and any other documents issued by the Architect.
- This contract / work is protected by copyright.

**CONSULTANTS**

Quantity Surveyor:  
BEC  
Planning Consultant:  
BEC  
Mechanical Engineer:  
BEC  
Architectural Consultant:  
BEC  
Structural Engineer:  
BEC  
Civil Engineer:  
BEC  
Electrical Engineer:  
BEC



**CLIENT**  
STEVEN ADAMS  
THE SCOTS COLLEGE

**PROJECT**  
PROPOSED REFURBISHMENT OF  
THE STEVENSON LIBRARY

**ADDRESS**  
29-33 Victoria Rd  
Belconnen Hills, NSW

**DRAWING TITLE**  
Proposed Elevation + Context

**DRAWN BY**  
JC, CF, JW

**SCALE**  
1:200 @ A3

**ISSUE**  
PRELIMINARY

**REVISION**  
P7

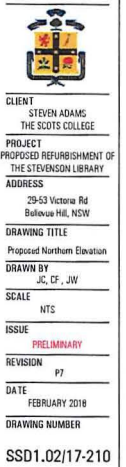
**DATE**  
FEBRUARY 2018

**DRAWING NUMBER**  
SSD1.02/17-212














1 Proposed Eastern Elevation + Context  
Scale: 1:200





SSD1.02/17-210

**LEGEND**

	Exg floor area		Entry matt
	Exg structure		Wet area
	Additional floor area		HYD Fire hydrant
	New masonry - 120/120/120 FRL construction of load bearing walls		1FD 1hr fire door set
	Render / Sandstone capping		2FD 2hr fire door set
	New concrete		

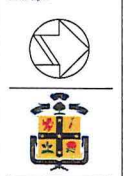


**GENERAL NOTES**

- Consult with RL relevant authorities prior to construction.
- All dimensions are in metres unless otherwise stated.
- All dimensions are to be confirmed on site prior to commencement.
- Clean setting out information from architect prior to commencement.
- Being discrepancies in the immediate vicinity of the Architect.
- If there is any aspect of the work, post instruction from the Architect before proceeding.
- All dimensions must be read in conjunction with the current contract, specifications, schedule, site rules & instructions issued by the Architect.
- This material / work is protected by Copyright.

**CONSULTANTS**

PHC Quantity Surveyors  
 HEC Planning Consultant  
 ACV Mechanical Engineer  
 BCA Assess Structural, calculation  
 FSL Structural Engineer  
 HEC HEC Consultant  
 JLS Hydraulic Engineer  
 Ray Ma Fire Consultant  
 LEC Fire Engineer  
 LPLS Electrical Engineer



**CLIENT**  
 STEVEN ADAMS  
 THE SCOTS COLLEGE

**PROJECT**  
 PROPOSED REFURBISHMENT OF  
 THE STEVENSON LIBRARY

**ADDRESS**  
 79-83 Victoria Rd  
 Ballerup VIC, NSW

**DRAWING TITLE**  
 PROPOSED FIRST FLOOR PLAN

**DRAWN BY**  
 JC, CF, JW

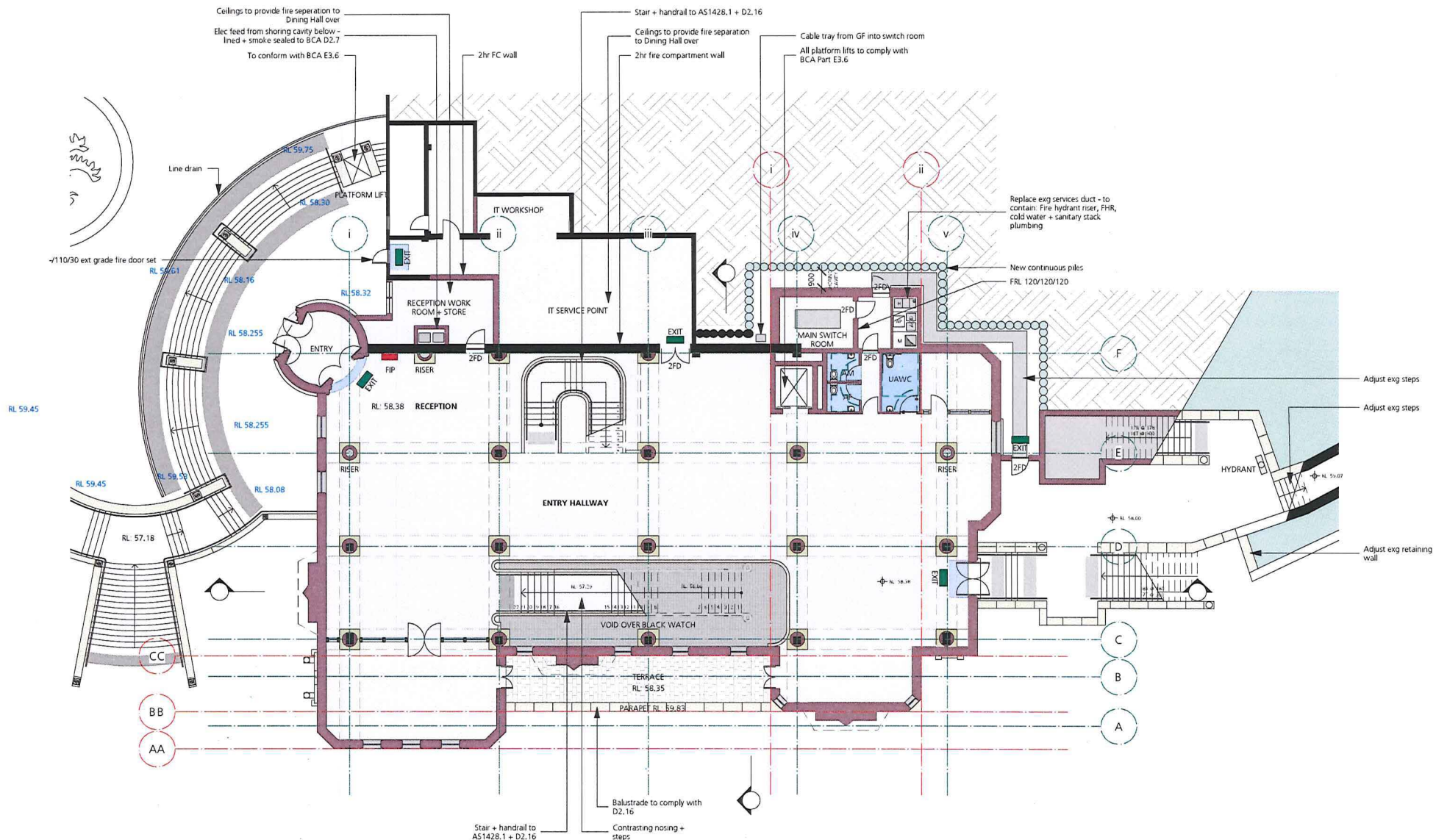
**SCALE**  
 1:200 @ A3

**ISSUE**  
 PRELIMINARY

**REVISION**  
 PB

**DATE**  
 MARCH 2018

**DRAWING NUMBER**  
 SSD1.02/17-202



1 Proposed First Floor Plan RL 58.38  
 Scale: 1:200

GFA: 668m<sup>2</sup>

**LEGEND**

- |  |                       |
|--|-----------------------|
| □ Exg floor area   | ■ Entry matt          |
| ■ Exg structure  | ■ Wet area            |
| □ Additional floor area  | HYD Fire hydrant      |
| ■ New masonry - 120/120/120 FRL construction of load bearing walls | 1FD 1hr fire door set |
| □ Render / Sandstone capping                                       | 2FD 2hr fire door set |
| ■ New concrete   |                       |



SSD1.02/17-203

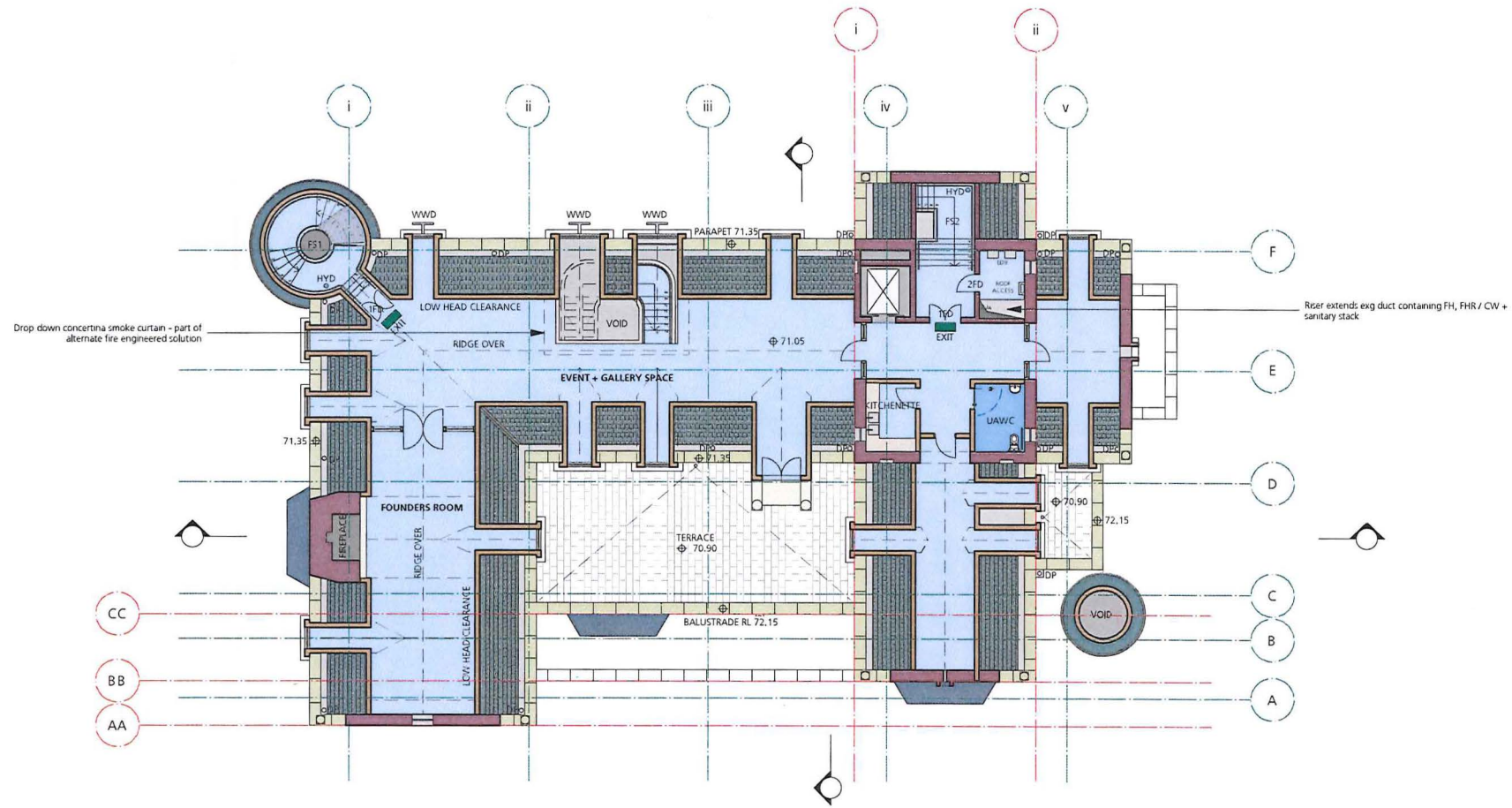


1 Proposed Second Floor Plan RL 61.57  
Scale: 1:200









1 Proposed Fifth Floor Plan RL 71.05  
 Scale: 1:200

GFA: 312m<sup>2</sup>

LEGEND	
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> New flooring	<span style="display:inline-block; width:15px; height:15px; background-color:darkblue; border:1px solid black;"></span> Welsh slate roof
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> Wet area	<span style="display:inline-block; width:15px; height:15px; background-color:darkblue; border:1px solid black;"></span> Roof leadwork
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> Timber frame	HYD Fire hydrant
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> New masonry - 120/120/120 FRL construction of load bearing walls	1FD 1hr fire door set
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> Render / Sandstone capping	2FD 2hr fire door set

**GENERAL NOTES**

- Consult with all relevant authorities prior to commencing works
- All work to be completed in accordance with the relevant codes of practice
- Bring discrepancies to the attention of the Architect
- All drawings must be read in conjunction with the contract documents, specifications, schedules, and notes - instructions issued by the Architect
- This material work is protected by Copyright

**CONSULTANTS**

TRG  
 Quantity Surveyors

BEC  
 Planning Consultant

ALV  
 Mechanical Engineer

SEA  
 Accountancy Consultant

PSG  
 Structural Engineer

SLG  
 SEA Consultant

AL  
 Planning Engineer

MBB  
 Fire Consultant

WED  
 Fire Engineer

SPR  
 Electrical Engineer



**CLIENT**  
 STEVEN ADAMS  
 THE SCOTS COLLEGE

**PROJECT**  
 PROPOSED REBURNISHMENT OF THE STEVENSON LIBRARY

**ADDRESS**  
 29-53 Victoria Rd  
 Balmain NSW

**DRAWING TITLE**  
 PROPOSED FIFTH FLOOR PLAN

**DRAWN BY**  
 JAC, CF, JW

**SCALE**  
 1:200 @ A3

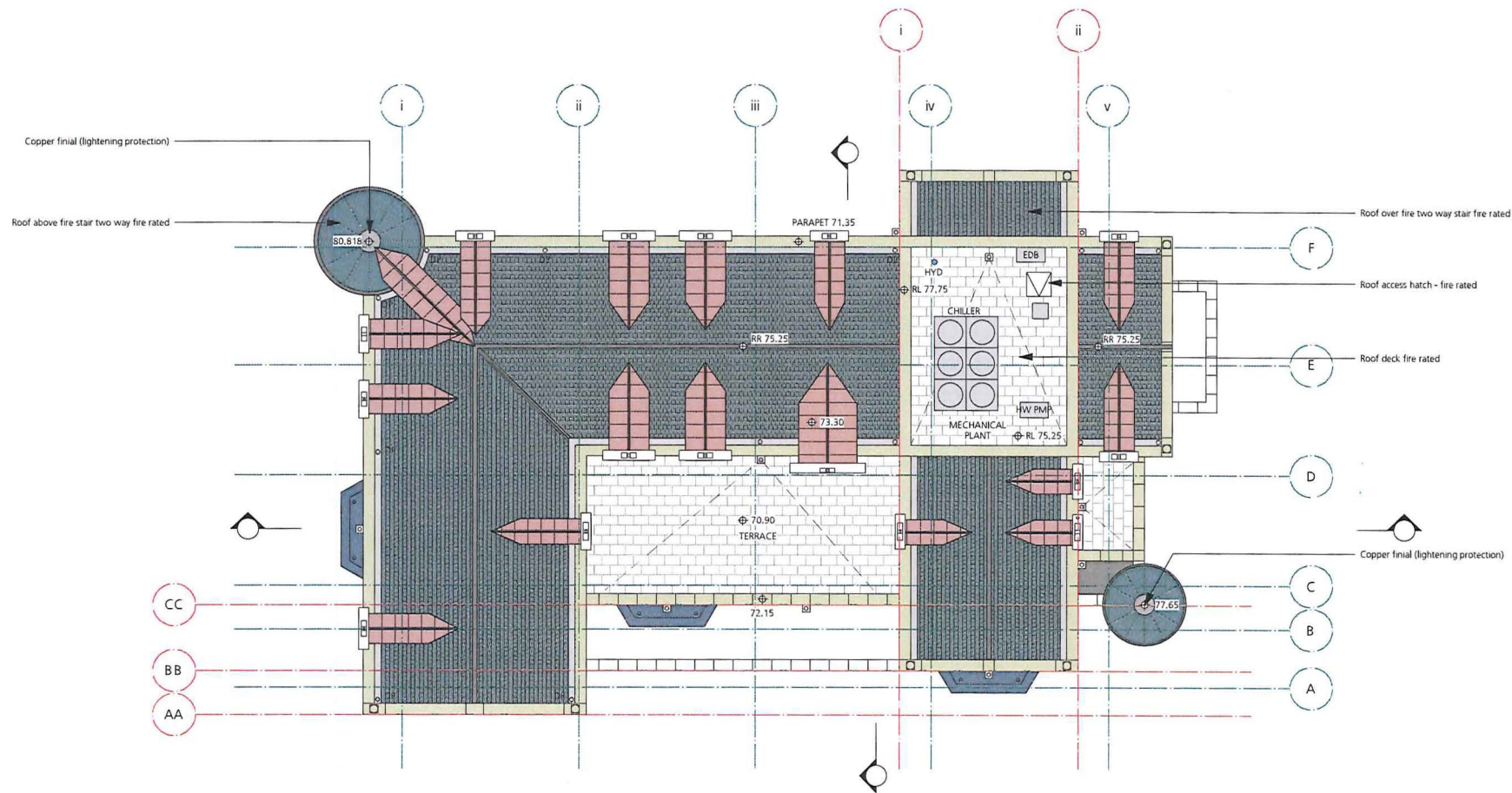
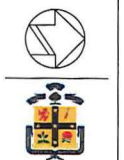
**ISSUE**  
 PRELIMINARY

**REVISION**  
 P5

**DATE**  
 FEBRUARY 2018

**DRAWING NUMBER**  
 SSD1.02/17-206





1 Proposed Roof Plan RL 75.25  
 Scale: 1:200

**LEGEND**

- Welsh slate
- Roof leadwork
- Standing seam copper
- Sandstone capping
- Pavers
- HYD Fire hydrant