Flood Risk Management Plan
Alterations and Additions to Existing School
Good Samaritan Catholic College, Hinchinbrook
17150 – October 2017

siteplus

planning . engineering . landscape . design . management

FLOOD STUDY AND FLOOD RISK MANAGEMENT STUDY

GOOD SAMARITAN CATHOLIC COLLEGE

PREPARED FOR

JHD Architects Pty Ltd

c/- Good Samaritan Catholic College

PREPARED BY

Site Plus Pty Ltd
(Siteplus)

Head Office: **345 Keira Street WOLLONGONG NSW 2520**
Telephone: (02) 4227 4233
Fax: (02) 4227 4133
E-mail: info@siteplus.com.au

Camden Office: **12 View Street, CAMDEN NSW 2570**
Telephone: (02) 4655 5877
Fax: (02) 4655 5024
E-mail: camden@siteplus.com.au

Site Plus Pty. Ltd.
(Incorporated in NSW)
ACN 104 315 095

Document Tracking

Document Status		Report					
File Location		\\MAIN-SERVER\General Store\Projects\17150 Good Samaritan College Hinchinbrook					
Project No.		17150			Date	October 2017	
Rev No	Issue	Author			Approved		
		Name	Signature	Date	Name	Signature	Date
1	Final	M.S.			Ken Rootsey		
2							
3							

TABLE OF CONTENTS **Page No.**

APPENDICES

LIST OF FIGURES

EXECUTIVE SUMMARY

On behalf of JHD Architects, Site Plus has prepared a flood risk management plan for the proposed Alteration and Additions at Good Samaritan Catholic College, Hinchinbrook.

The proposed development consists of vertically extending and refurbishing an existing building (the TAS building) to create a second storey. Also proposed is the construction of a skywalk linking the new floor to the existing first floor of an adjacent building. The proposed works also includes a covered walkway joining the Trade Training Centre and Good Samaritan Catholic College. Architectural plans for the proposed development can be found in Appendix A.

The north east corner of the College borders the Hinchinbrook Creek, hence some areas of the school grounds have been identified as 'Low Flood Risk' and 'Medium Flood Risk'. The subject building is located in an area typified by low grades.

Values for the flood levels have been adopted from the November 2008 Flood Study on the property by Bewsher Consulting Pty Ltd and the Section 149(2) Certificate which is derived from the September 2011 Cabramatta Creek Flood Study and Basin Strategy Review. These can be found in Appendix B and Appendix C respectively.

The results indicate the following:

- The proposal is within the extents of the existing building and second storey reduces flood risk to occupants.
- The proposed second storey of the TAS building and adjoining skywalk will be above the PMF flood level.
- The proposed covered walkway between the College and the Trade Training Centre will be within the extents of the 1% AEP, however the open structure will have a negligible impact on floodwater.
- The subfloor of the TAS building and the covered walkway is to be constructed of flood compatible materials to withstand the forces of floodwater, debris and buoyancy up to and including the PMF level.
- The proposed development will not negatively impact current flooding conditions.

1. INTRODUCTION

1.1. Preliminary

1.1.1. Siteplus Engagement

Site Plus has been commissioned by JHD Architects to prepare a flood risk management study for the proposed Alterations and Additions at Good Samaritan Catholic College Hinchinbrook.

1.1.2. Scope of Work

Siteplus determined the following investigations were required to complete a thorough flood risk management study of the site:

- Analyse the significance of the proposed construction with reference to an existing flood study on the College by Bewsher Consulting Pty Ltd (Nov, 2008) and the Section 149(2) Certificate (Jan, 2017).
- Evaluate the site in terms of Liverpool Council's DCP 'Section 9.0 - Flooding Risk'; and
- Prepare a report which summarising the findings of the analysis.

1.2. Subject Land

The subject site sits above the banks of Hinchinbrook Creek and just south of the M7 Motorway. The site is typified by low grades falling towards Hinchinbrook Creek on the northern and eastern boundaries. The College grounds currently contain several existing school buildings, grassed playing fields, car parking areas and paved playing areas.

Figure 1 illustrates the proposed development site in relation to the surrounding area.

1.3. Existing Watercourses

Hinchinbrook Creek is the primary watercourse and flood risk for the site.

Figure 1: Site location. Source: Nearmap, 2017

Figure 2: Proposed development. Source: JDH Architects' masterplan presentation set.

2. COUNCIL FLOOD STUDY RESULTS

2.1. Bewsher Flood Study Results (2008)

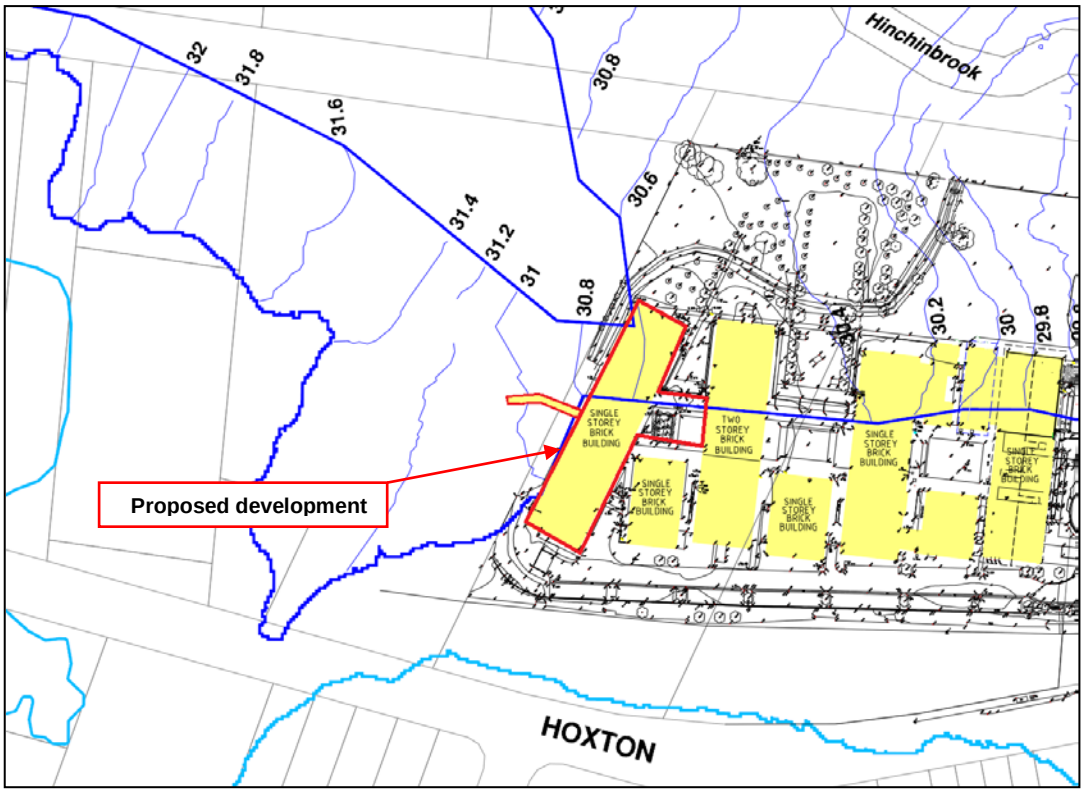
Figure 3 illustrates the water level contours across the flood plain for the 1% AEP (100 year) flood event and the Probable Maximum Flood (PMF).

The proposed second story of the TAS building and skywalk will have a negligible impact on the existing flood condition as it will be constructed above the existing building's footprint and above the PMF level.

The covered walkway joining the Trade Training Centre and Good Samaritan Catholic College is deemed to have a negligible impact on the existing flood condition as it will be an open structure and only spaced steel columns interfering with potential flood waters.

The flood mapping from Bewsher's 2008 Flood Study and proposed development is shown below in Figure 3.

Figure 4: Existing flood conditions from the Bewsher Flood Study and the proposed construction. Source: Bewsher Consulting Pty Ltd Flood Assessment, November, 2008.



3. SECTION 9 DCP Requirements

Using “Section 9 – Flooding Risk” from Liverpool Council’s DCP, the following standard requirements must be addressed when considering development of the site. As per council’s definitions of land use category, Good Samaritan College falls under ‘Sensitive Uses and Facilities’.

The school is located on land that is classified as either ‘Medium Flood Risk’ or ‘Low Flood Risk’. As 40% of the TAS building falls in medium flood risk zone, it would considered a medium flood risk and this would prevent any kind of development for Sensitive Uses and Facilities. However, given that the proposed new floor for the TAS building is situated above approved development and will not increase the developed area by more than 10% then the development is likely allowed as ‘Concessional Development’. Consequentially, the floor level of the new development should be no lower than the existing ground floor level and as close to the PMF level (i.e. at 31.8m AHD) as possible.

As per the Flood Certificate Section 149(5) Issue No:2027155, provided on 13/01/2017, the maximum calculated level of the 1% AEP and PMF in the vicinity of the property is 30.2m and 31.8m AHD respectively.

3.1.1. Floor Level

Given that the proposed floor level of the new development will be at least 3m above the existing floor level (30.7m AHD), it will be beyond the reach of a PMF event (31.8m AHD). That is, the floor level of the second storey will be a minimum of 1.2m above the PMF level. However, it is recommended that the ground floor section of the building is assessed in relation to the flood compatibility of the building components and structural soundness as discussed below.

3.1.2. Building Components

All building components below the 1% AEP flood level plus 0.5m freeboard need to be flood compatible. The proposed additions to the TAS building must ensure that the subfloor structures are to be reinforced concrete and masonry walls flood proofing the building during a 1% AEP or PMF event.

The covered walkway will be an open structure to convey floodwater and have a steel construction where below the 1% AEP plus 0.5m freeboard level to withstand the forces associated with floodwaters.

3.1.3. Structural Soundness

The subfloor of the extension and the covered walkway will be structurally sound to withstand the forces of floodwater, debris and buoyancy up to and including a PMF.

3.1.4. Flood Effects

The proposed construction will require no net filling of the floodplain (below the 100 year flood level) and consequently the total volume of flood storage on the site will not be reduced.

Given that the extension of the TAS building will be above the reaches of floodwaters it has no potential to alter flood conveyance. The proposed covered walkway is within the 1% AEP flood level, however the open structure will have a negligible impact on flood conveyance.

3.1.5. Evacuation

Given that the school would be partly surrounded by floodwaters during an extreme storm event, the school is deemed ineligible as a regional evacuation site. Evacuation for the occupants is recommended via Hoxton Park Road which is free of flooding in the 100 year flood.

The proposed second storey of the TAS building will create a significant area above the PMF level. In the unlikely event that any person might become trapped in the site during an extreme flood event they could seek refuge in the proposed second storey of the building. As described previously, it will be necessary to ensure that the subfloor of the TAS building can withstand the forces of floodwater, debris and buoyancy during floods up to and including the PMF.

3.1.6. Management and Design

In the proposed development goods will be stored at floor level which is above the PMF level. No external storage of materials will occur.

4. CONCLUSION

JHD Architects Pty Ltd are seeking development approval for the proposed Alteration and Additions at Good Samaritan Catholic College, Hinchinbrook.

The following conclusions can be made regarding the flood study:

- The proposed 2nd storey above the existing TAS building and skywalk joining the TAS building and adjacent building will be constructed above the PMF flood level of 31.8m AHD.
- The subfloor beneath the 2nd storey will be reinforced to withstand the forces of floodwater, debris and buoyancy during floods up to and including the PMF.
- The proposed covered walkway between the College and the Trade Training Centre will be subject to 1% AEP flood reaches, however the open structure and a reinforced construction will allow it to withstand flooding.
- The proposed development will have a negligible impact on flood conveyance. The flood extents are graphically illustrated in S149.
- Evacuation from the site is recommended via Hoxton Park Road during floods up to 1% AEP or can be waited out in the proposed first floor as it is above the PMF level.

APPENDIX A
Architectural Plans

Rev.	Date	By	Notes	Ck

LEGEND

- EXISTING BUILDINGS ON SITE TO BE RETAINED
- EXISTING CANOPIES
- CURRENT DEMOUNTABLES
- EXISTING LANDSCAPEING
- EXISTING SPORT COURT
- PROPOSED BUILDING

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

SITE PLAN

Scale : 1:1000 @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

Project No.	Drawing No.	N
1006	CD-02	

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN

Rev.	Date	By	Notes	Ck

LEGEND

EXISTING BUILDING, TO REMAIN

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

EXISTING GROUND FLOOR PLAN

Scale : 1:200 @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

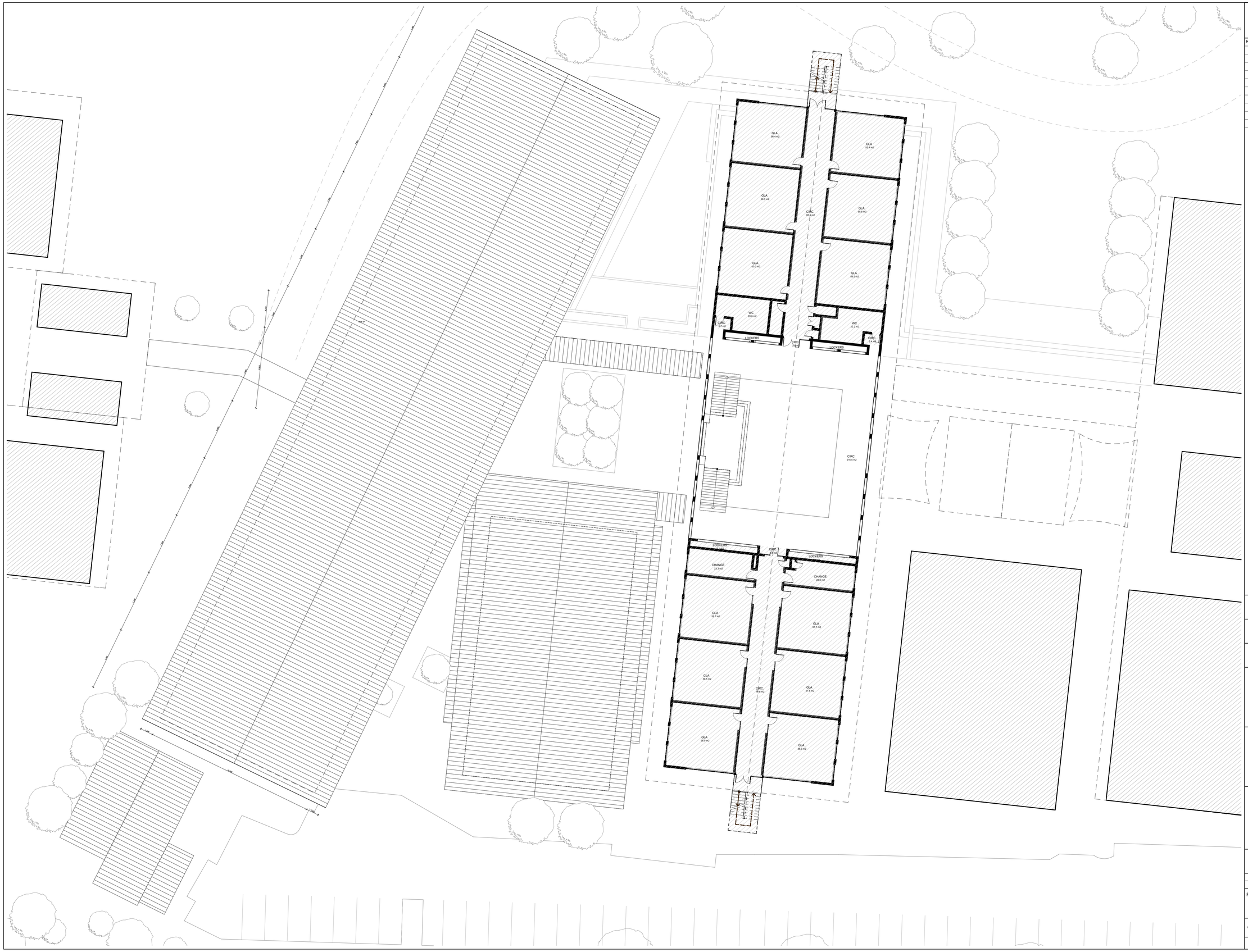
Project No.	Drawing No.
1006	CD-03

N

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN



Rev.	Date	By	Notes	Ck

LEGEND

EXISTING BUILDING, TO REMAIN

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

EXISTING FIRST FLOOR PLAN

Scale : 1:200 @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

Project No.	Drawing No.	N
1006	CD-04	

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN

Rev.	Date	By	Notes	Ck

LEGEND

ROOF TO BE DEMOLISHED

WALL TO BE DEMOLISHED

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

DEMOLITION PLAN GROUND FLOOR

Scale : 1:200 @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

Project No.	Drawing No.	N
1006	CD-05	

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN

Rev.	Date	By	Notes	Ck

LEGEND

- PROPOSED WALL
- EXISTING WALL
- WALL TO BE DEMOLISHED
- PROPOSED HARDSCAPE
- EXISTING BUILDING, TO REMAIN

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

PROPOSED GROUND FLOOR PLAN

Scale : 1:200 @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

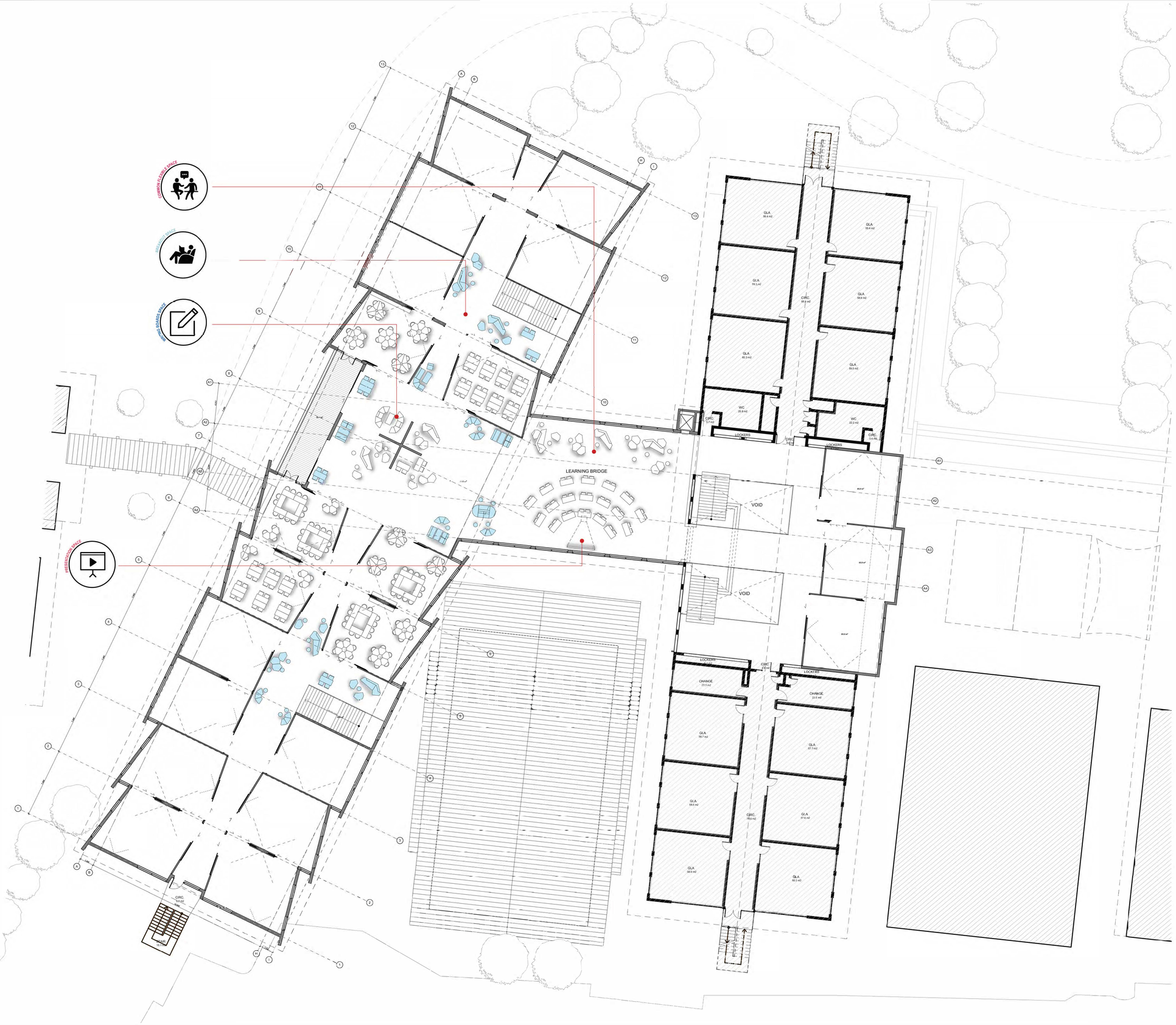
Project No.	Drawing No.
1006	CD-06

N

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN



Rev.	Date	By	Notes	Ck

LEGEND

▬	PROPOSED WALL
▬	EXISTING WALL
- - -	WALL TO BE DEMOLISHED
▨	EXISTING BUILDING, TO REMAIN

Building Certifier

Mechanical, Electrical & Hydraulic Engineering Consultant

Structural & Civil Engineer Consultant

Architect

JDH architects

JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)

44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client

SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name

GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title

PROPOSED FIRST FLOOR PLAN

Scale : 1:200 @A1
Date : 10/05/2017
Drawn : CH
Checked :JH

Project No. 1006
Drawing No. CD-07
N

QUALITY CERTIFIED ISO 9001

INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN

Rev.	Date	By	Notes	Ck

Architect
JDH architects
JDH ARCHITECTS PTY. LTD.
info@jdharchitects.com.au
ABN 27 110 978 802
ACN 110 978 802
NOMINATED ARCHITECT:
JAYNE HARRISON (7403)
44 Little Oxford Street
Darlinghurst, NSW 2010
Telephone: 02 9281 8697
www.jdharchitects.com.au

Client
SYDNEY CATHOLIC SCHOOLS
38 RENWICK STREET
LEICHHARDT NSW, 2040

Telephone:(02) 9569 6111
www.sydcatholicschools.nsw.edu.au

Project Name
GOOD SAMARITAN CATHOLIC COLLEGE

401 HOXTON PARK ROAD
HINCHINBROOK
NSW 2168

Drawing Title
VISUALZATION - NORTHERN FACADE BLOCK T

Scale : @A1	Date : 10/05/2017
Drawn : CH	Checked :JH

Project No.	Drawing No.
1006	CD-011

QUALITY CERTIFIED ISO 9001
INITIALLING THE 'DRAWN' AND THE 'CHECK' BOXES CONFIRMS THAT THIS DRAWING HAS BEEN PREPARED IN CONFORMITY WITH JDH ARCHITECTS Q.M.S. PROCEDURES.

Status: CONCEPT DESIGN

APPENDIX B
Existing Flood Study

Bewsher Consulting Pty Ltd

13 November 2008

Ref: J1770

Mr Peter Dahl
Stanton Dahl, Architects
PO Box 833
EPPING NSW 1710

Dear Peter

GOOD SAMARITAN COLLEGE, HINCHINBROOK
FLOOD ASSESSMENT

As requested, we provide below our assessment of the flooding constraints on the proposed multi-purpose hall and chapel at the Good Samaritan College, 401 Hoxton Park Road, Hinchinbrook. We have based our assessment on:

(a) survey of the site prepared by Barry Green & Associates on 8–15 May 2008. Sheets 1 to 6, Job No 9362;

(b) your drawing Nos A100, A200 and A300 dated 11 November 2008; and

(c) modelling of the 100 year flood carried out as part of the Cabramatta Creek Floodplain Management Study by our firm for Council in 1996.

Flood Levels

Council's flood levels are based on RMA modelling carried out in 1996. This indicates that the 100 year flood level at the site of the proposed hall and chapel is 29.6mAHD and the probable maximum flood (PMF) level is 31.2mAHD.

We are also aware that more recent TUFLOW modelling was carried out as part of the construction of the M7 project. Whilst this TUFLOW modelling generally has produced flood levels close to the 1996 levels, in this part of Hinchinbrook Creek the 100 year flood levels from TUFLOW are approximately 0.6m higher than Council's levels.

We understand that the PMF level from the TUFLOW model is not currently available. Under a separate commission that we are undertaking for Council, we will be reviewing the credentials of the TUFLOW model and will be able to provide recommendations to Council concerning its accuracy compared with the 1996 estimates. At the current time however, it is not possible to know which of the two estimates is more reliable.

6/28 Langston Place Epping NSW 2121
PO Box 352, Epping NSW 1710
Email: postmaster@bewsher.com.au
Telephone: (02) 9868 1966
Facsimile (02) 9868 5759
A.B.N. 24 312 540 210

Floor Levels

Under Liverpool's DCP 2008, educational establishments would be classified as 'Sensitive Uses and Facilities'. As such, new developments would require their floor levels to be located no lower than the PMF level (i.e. at least 31.2mAHD). Nevertheless, we understand that based on your discussions with Council's planners, and given that the proposed development will not increase the area of approved development by more than 10%, Council will likely allow the development as classified as 'Concessional Development'. Consequently the floor level will need to be as close to the PMF level as possible but no lower than the floor levels of the existing buildings.

The proposed floor level will be set at 30.6mAHD which is 1.0m above the 100 year flood level and 0.6m below the PMF level (1996). Given that this level will be somewhat higher than the adjacent buildings, and to raise it even further would create access and amenity issues, the proposed floor level seems appropriate to us. Nevertheless you should maximise the use of flood compatible building components and take other measures to minimise the damage which would result if a flood much bigger than the 100 year event occurred.

Flood Risk Precinct Categorisation

The school is located on land that has been categorised as either 'Medium Flood Risk' or 'Low Flood Risk'. The site of the proposed hall and chapel is predominantly in the Medium Flood Risk Precinct, with a smaller section in the Low Flood Risk Precinct.

Third Party Impacts — Conveyance

We have reviewed the development to assess whether it will have the potential to increase flood effects elsewhere and have adverse third party impacts by altering flood conveyance. We note however that in accordance with the advice that Council has provided to you, the development will be considered in the light of the original consent (DA315/96) which assessed the maximum extent of development as shown by the dotted pink line on **Figure 1** attached. As can be seen, the proposed multi-purposed hall and chapel all lie within the extent of development works which was envisaged in the original consent.

Nevertheless, we have also carried out an assessment of the likely impacts of the building during a 100 year flood event, if viewed in isolation from the original DA consent. In our opinion, there will likely be no significant adverse flood effects given:

(a) the proposed floor level including the supporting beams will be elevated well above the 100 year flood level. We understand based on the current design proposals, the underside of the floor and its supporting structure will be at approximately 30.2mAHD which is some 0.6m above Council's 100 year flood level; and

(b) the north-western, northern and eastern perimeter of the building will comprise open construction to allow passage of floodwaters in a general east and south easterly direction through the perimeter and under the floor. Where stair access is proposed, the risers will be open to also allow the passage of flows under the building.

We note that some of the southern and south-western portions of the building will be supported on fill. Nevertheless as this fill will all be located outside of active flow areas, and all within the maximum extent of development envisaged in the original consent, we believe this fill is appropriate provided it is obtained by compensatory excavation as noted in the following section.

Third Party Impacts — Flood Storage

We understand that there will be no net filling of the floodplain (below the 100 year flood level) and consequently the total volume of flood storage on the site will not be reduced.

As such there will be no adverse third party impacts arising from changes in the volume of flood storage.

Evacuation

Given that the school will be largely surrounded by floodwaters during an extreme event, and without access to higher ground which is located nearby but offsite, the school is not considered to be a good site for a regional evacuation centre.

Nevertheless evacuation remains an important consideration for the occupants of the school. Much of the school site and buildings (including the floor of the proposed hall and chapel) are located above the 100 year flood level, and evacuation will only be required in very large events. The most appropriate evacuation route will be along Hoxton Park Road to the west. This route is free of flooding in the 100 year flood.

In the unlikely event that any person might become trapped on the site during a major flood event, they could seek refuge within the proposed hall and chapel whose floors will be 1.0m above the 100 year flood level. The hall also has a proposed stage at 31.45mAHD which will provide a refuge area that is above the PMF level. In this regard, it is recommended that the hall and chapel be constructed so that it can withstand the forces of floodwater, debris and buoyancy during floods up to and including the PMF.

Controlled Activity Approval under the Water Management Act

As we understand that the development will be located just outside the 40m limit which would trigger the need for a controlled activity approval from the Department of Water and Energy (DWE), we have not carried out any formal liaison with DWE officers.

Yours sincerely

Drew Bewsher
Director

FIGURE 1

LEGEND

- PMF Flood Extent - (RMA-2 1996)
- 100 yr Flood Contour - (RMA-2 1996)
- 100 yr Flood Extent - (RMA-2 1996)
- Existing Buildings as per site survey - May 2008
- Existing Buildings as per aerial photograph - 2005
- Proposed buildings from DA 315/96 not constructed
- Proposed courts from DA 315/96 not constructed
- Maximum extent of Development Works (Council advice) DA 315/96

N

M7

Hinchinbrook Creek

WILSON ROAD

HOXTON PARK ROAD

FIRST AVE

PROPOSED MULTI-PURPOSE HALL AND CHAPEL
(FFL 30.60)

SINGLE STOREY BRICK BUILDING

TWO STOREY BRICK BUILDING

CONCRETE BASKETBALL TENNIS COURTS

BITUMEN CARPARK

BUS SHELTER

31.2 31 30.8 30.6 30.4 30.2 30 29.8 29.6 29.4 29.2 29 28.8 28.6 28.4 28.2 28 27.8 27.6 31.8 32 31.6 31.4

0 20 40 60 80 100m
Scale

GOOD SAMARITAN CATHOLIC COLLEGE PROPOSED MULTI-PURPOSE HALL AND CHAPEL

EXISTING FLOOD CONDITIONS

FLOODPLAIN MANAGEMENT CONSULTANTS

BEWSHER CONSULTING PTY LTD
UNIT 6, 28 LANGSTON PLACE
EPPING NSW 2121
P.O.BOX 352
EPPING NSW 1710
A.C.N. 003 137 068
Phone: (02) 9868 1966
Facsimile (02) 9868 5759
Email : postmaster@bewsher.com.au

Plot file : J1770-fig1
Plot scale : 2 (a3 @ 1:2000)
Date : 13 November 2008

APPENDIX C
Council Flood Information

ANNEXURE TO SECTION 149(5) CERTIFICATE

LIVERPOOL CITY COUNCIL

Issue Date: 13/01/2017

Issue No: 2027155

File No: 2017/0074

Premises at Lot 11 DP 1209742
Hoxton Park Road Hinchinbrook

Further to the advice contained in the Section 149(2) Certificate and on the basis of the latest information available to the Council:

1. the maximum calculated level of the probable maximum flood (PMF) in the vicinity of your property in metres AHD is **31.8.**

2. the maximum calculated level of the 1% annual exceedance probability flood (previously referred to as the 1 in 100 year) in the vicinity of your property in metres AHD is **30.2.**

3. the maximum calculated level of the 2% annual exceedance probability flood (previously referred to as the 1 in 50 year) in the vicinity of your property in metres AHD is **30.2.**

4. the maximum calculated level of the 5% annual exceedance probability flood (previously referred to as the 1 in 20 year) in the vicinity of your property in metres AHD is **30.1.**

The Council does not possess accurate information on the natural surface levels of individual allotments or on constructed building levels, and these should be established by private survey to ascertain their relationship to the above flood levels.

Flood levels are obtained from **Cabramatta Creek Flood Study and Basin Strategy Review - September 2011**

Name of Assessor: **W. Siripala**

Signature: