

From: "Gordon Webb"
Sent: Wed, 16 Dec 2020 11:05:00 +1100
To: "Peter Kellaway" <pkellaway@wollongong.nsw.gov.au>; "Nicholas Idziak" <nidziak@wollongong.nsw.gov.au>; "Kevin Bogie" <KBogie@wollongong.nsw.gov.au>; "Leeca Horsman" <LHorsman@wollongong.nsw.gov.au>; "Jan Noble" <JNoble@wollongong.nsw.gov.au>; "Annette Stoker" <AStoker@wollongong.nsw.gov.au>; "Belinda Edmondson" <BEmondson@wollongong.nsw.gov.au>; "Gary Holmes" <GHolmes@wollongong.nsw.gov.au>
Subject: FW: Helensburgh Community Centre - floor structure replacement, subfloor drainage and subfloor ventilation improvements - UPDATE!!!
Attachments: 20-12361-01-OH.pdf, Australian_Mould_Guidelines_2005-1.pdf, Helensburgh Community Hall – Scope of Works Brief and Price Schedule - 16.9.2020 Revision B.docx, D+TS Projects - Plans + Specifications - TR-671 Helensburgh Community Centre Specification Scope of Works_Combined.PDF, Drawing Set - Helensburgh Community Centre TR-671 – SK01, SK02, SK03, SK04, SK05 and SK06 – Revision 1.pdf

Hi all,

Please see below email sent to the contractor, Quadracon, working at Helensburgh Community Centre.

I will keep you all in the loop.

regards



Gordon Webb

Coordinator Building Construction + Maintenance

Post Locked Bag 8821 Wollongong DC NSW 2500

Phone +61242277807

Email gwebb@wollongong.nsw.gov.au • www.wollongong.nsw.gov.au

Our Values SUSTAINABLE COURAGE RESPECT INTEGRITY ONE TEAM



From: Gordon Webb
Sent: Wednesday, 16 December 2020 10:58 AM
To: Andrew McKenzie <andrew.mckenzie@quadracon.com.au>
Cc: Jeff Hunt <jeff.hunt@quadracon.com.au>
Subject: Helensburgh Community Centre - floor structure replacement, subfloor drainage and subfloor ventilation improvements - UPDATE!!!

Hi Andrew (Quadracon),

I appreciate your patience with this challenging project.

As you are well aware I requested a hygienist inspect the site prior to opening up the floor area, this was to investigate some potential issues. Thank you for organising a hygienist inspection and report, Council have received the Clearsafe report and I have consulted with the major stakeholders within WCC.

Approximately 90% of the report mentions conditions and solutions of which Council is aware of, have considered and/or in the process of resolving, Council has confirmed a way forward for this project. To be brief, Council are committed to completing the original SOWs, the entire floor area will not be replaced within this project. Council and Quadracon need to manage this project in a step process to ensure safety and practicality for all.

- Site Access - The main hall must be isolated from the staff and public for the duration of the works – please ensure all doorways and access points are secured and NO ACCESS signage is in situ (most of this is already done).
- PPE – all personnel must use PPE as required in regard to asbestos removal, mould guidelines, confined spaces and Safework NSW.
- Confined space access – confined space Australian Standards and protocols must be adhered to as per Quadracon's confined space safety documentation.
- Asbestos removal and treatment – it looks like less than 10sq/m - asbestos removal Australian Standards and protocols must be adhered to, include continuous air monitoring, hen peck sub floor area, colour spray glue bearer/joist packers in sub floor area, asbestos disposal (receipts for Council), clearance certificate to Council.
- Flooring work "hold point" – open up floor area to allow inspection by Council to determine if a change of scope is required and also to examine other damaged areas. Inspection required by Council structural engineer, Geotech engineer and building coordinator.
- Flooring work and sub floor work – once Council approves the recommencement of work, business as usual and the works can recommence as per the SOWs (and potential change of scope).

At your earliest convenience please forward to Council any impact this may have on the program schedule.

Call me if you need further clarification.

regards



Gordon Webb

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Our Values  *SUSTAINABLE*  *COURAGE*  *RESPECT*  *INTEGRITY*  *ONE TEAM*



MICROBIAL ASSESSMENT

HELENSBURGH COMMUNITY CENTRE

26 WALKER STREET
HELENSBURGH NSW 2508

Client:
Quadracon Building Pty Ltd
PO Box 249
Moss Vale NSW 2577

Reference:	Revision:	Date of Report:	Prepared By:	Authorised By:
20-12361-01-OH	Revision 0	8/12/2020	Luke Parkins	Michael Fernandez

Executive Summary

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was requested by Quadracon Building to undertake a limited assessment with regard to microbial levels within the subfloor space beneath the basketball court at the Helensburgh Community Centre, 26 Walker Street, Helensburgh NSW 2508. The investigation was commissioned following the identification of visible mould and broken timber joists within the subfloor of the Community centre during renovation works. Concerns were subsequently raised about the structural integrity of the timber floorboards and joists and any possible risk that the microbial impacts may present to any of the occupants within the immediate area during renovation.

Moisture level results for all of the measured timber building materials were above 10%, at the time of inspection. Moisture levels for timber surfaces above 10% are considered a trigger level for treatment/further assessment. It is noted that at the time of the inspection, water was visibly observed dripping from the timber joists/bearers throughout several locations within the subfloor and also on inspected brick wall surfaces within the subfloor (northern and western). The need for remediation and/or further investigation is recommended.

Surface swab analysis results indicate that all sampled locations returned detectable microbial concentrations at levels that suggest significant viable mould and bacteria. Samples 5 and 6 were unable to give accurate detectable yeast concentrations due to overgrown mould. However, all sample locations exhibited concentrations above double that of the reference sample, suggesting the need for further testing and/or remedial works. The mould count reported to the field blank sample is likely due to cross contamination and does not invalidate the results.

In conclusion, moisture readings in conjunction with surface swab analysis suggests that there is an underlying moisture ingress/microbial growth issue which appears to be present within the entirety of the basketball court subfloor. A visual inspection of the subfloor identified several timber bearers and timber joists that were either partially broken or had completely detached from their former position due to rot. Water was visually observed dripping from several of the timber joists within the subfloor and was also observed on the northern and western brick walls of the subfloor, coupled with what appeared to be a white powdery substance, which the inspecting consultant is of the belief is most likely efflorescence. Ground surfaces of the subfloor displayed evidence of dampness and trenches which appeared to be pathways for water ingress. A musty/damp odour was also present within the subfloor at the time of the inspection. Clearsafe recommends appropriate remediation as part of renovation.

The following recommendations apply to the microbial remediation works:

- Remediation work should be carried out by professional contractors in accordance with relevant guidelines and in consideration of the following points.
- The work area should not be occupied during cleaning processes.
- Conduct a building inspection by a professional building inspector to investigate the source of the water ingress within the subfloor, particular attention should be paid to the northern and western sides of the basketball court where the drainage extends from the exterior through the brick wall into the subfloor. Given the compromised structural integrity of the timber bearers and joists within the subfloor, Clearsafe recommends that access within it is restricted/limited.
- Clearsafe recommends that access to the basketball court by external parties (outside of companies working on behalf of the current scope of works) is completely restricted due to safety concerns posed by the structural integrity of the basketball court.
- Clearsafe is of the understanding that as a part of the original remediation works, Quadracon was engaged to remove a nominated section of the timber hardwood floors within the basketball court. Clearsafe suggests that the original scope of works is reassessed and extended to include the entirety of the timber hardwood floors due to the uniform nature of damage observed throughout the subfloor during the inspection. It is also suggested that further consideration be undertaken in regards to the replacement of the timber bearers and joists within the subfloor.
- As per the Australian Mould Guidelines, mould damage is classified into a class system based on the extent and visible microbial impacts observed. As the mould damage was visible throughout the entirety of the subfloor beneath the basketball court and is compromising the structural integrity of the timber hardwood floor, the remedial works would be classified as a **Building Class 4 - Extensive Visible Growth Greater Than 10m² (Large Job)**. As per these guidelines the area should be restricted and clearly signposted, ground surfaces within the subfloor covered in plastic sheets and HVAC, ventilation and exhaust ducts adequately sealed. A decontamination unit installed at one of the entrances to the basketball court and all other access points adequately sealed and placed under negative air pressure by using an exhaust fan with a HEPA filter. All timber materials to be disposed of should be wrapped in plastic bags and the external of the bags HEPA vacuumed in the decontamination unit prior to removal from the enclosure. PPE should include disposable overalls, gloves, shoe protectors and a full face respirator mask with HEPA filtration with an activated carbon or organic vapour filter.
- Throughout the course of the inspection fibrous cement fragments suspected of containing asbestos were observed sporadically scattered throughout the subfloor ground surfaces. Clearsafe recommends an emu pick of the ground surfaces, with

consideration given to conducting a scrape of 50-100mm of soils within the subfloor due to the incredibly damp and most likely microbial impacted nature of the soils. If any material suspected of containing asbestos is identified in the future (outside of that already identified), stop work immediately, restrict access to the impacted area and contact Clearsafe for further advice.

- Clearsafe is of the understanding that the western wall of the basketball court is also being replaced and new ventilation is being installed, it is recommended that the northern wall of the basketball court is also removed and replaced and adequate ventilation installed to allow for air flow within the subfloor.
- Post mould remediation works reduce the humidity within the basketball court subfloor by natural or artificial means (desiccant, dehumidifiers, increasing air flow).
- Post mould remediation works, increase natural light levels and ventilation within the basketball court subfloor.
- An Occupational Hygiene consultant should be contacted to conduct a final inspection and clearance testing following remediation work.

Table of Contents

1 Introduction and Scope	5
2 Limitations	6
3 Sampling Details	7
4 Adopted Standards	8
5 Observations	9
6 Moisture Level Spot Checks	11
7 Surficial Microbial Sampling	12
8 Conclusion	14
9 Recommendations	16
10 Closure and Contact Information	18
 APPENDIX A	 SITE PHOTOGRAPHS
APPENDIX B	LABORATORY REPORTS

1 Introduction and Scope

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was requested by Quadracon Building to undertake a limited assessment with regard to microbial levels within the subfloor space beneath the basketball court at the Helensburgh Community Centre, 26 Walker Street, Helensburgh NSW 2508. The investigation was commissioned following the identification of visible mould and broken timber joists within the subfloor of the Community centre during renovation works. Concerns were subsequently raised about the structural integrity of the timber floorboards and joists and any possible risk that the microbial impacts may present to any of the occupants within the immediate area during renovation.

The agreed Scope of Work is summarised below:

- Moisture level spot checks in several locations throughout the subfloor using a hand-held moisture meter.
- Surficial microbial sampling (yeast, mould and bacteria) in eight (8) locations using sterilised swabs (Including a blank and reference sample)
- Visual inspection of the Helensburgh Community centre basketball court subfloor for visible evidence of water ingress and mould growth.
- Recommendations on the treatment of the mould and the surfaces affected.
- Preparation of a professional report summarising the findings of the investigation.

2 Limitations

All work is conducted in a conscientious and professional manner, with due diligence and appropriate care. However due to the disproportionate cost of potential damages or liability relative to the cost of our services, Clearsafe cannot offer any guarantee that all hazards have been identified. Subsequently, Clearsafe's liability to the client or any other party resulting from the performance or non-performance of the service, whether under contract law, tort law or otherwise, is limited to a maximum of up to five (5) times the total fee excluding expenses.

Clearsafe reports are not to be reproduced or reviewed except in full. All reports are prepared for a particular client's objective, and therefore should not be used by any third party as a basis for future decision-making.

Clearsafe relies on the accuracy of information provided by the client.

Any Party that uses or relies on this document, in doing so acknowledges, on behalf of themselves and all other legal entities that they represent, the unequivocal approval, acceptance and endorsement of the limitations and exclusions stated within this document, else this document should not be used or relied upon for any purpose.

3 Sampling Details

A site inspection and sampling was undertaken on the 27th of November 2020.

A TechCheck Plus (SN 13960) hand held moisture meter was used to undertake spot checks and measure relative moisture levels within representative building materials such as walls/ceiling surfaces and timber within a limited number of representative areas within the building.

Microbial samples were collected onto sterile, sealed and pre-packaged transport swabs/growth media using standard Clearsafe sampling procedures. The samples were transported in an iced insulated box and arrived at the nominated testing laboratory within 24hrs subsequent to the sampling.

Samples were collected from locations which were considered to be representative of the general conditions at the time of sampling.

The microbial sampling program was limited to surficial viable microorganisms in selected locations and during a specific period in time. Viable microorganism concentrations are known to vary markedly with differing meteorological and seasonal conditions.

4 Adopted Standards

Viable micro-organisms are common on urban surfaces and within indoor air. Microbial levels are relevant to indoor air quality as they can cause allergies and infections and may also negatively impact on an area's aesthetics by affecting surface coatings and releasing odorous volatile organic compounds.

The human body is well adapted to cope with most micro-organisms that are regularly encountered. As such it has not been possible for the scientific community to reproducibly establish levels of micro-organisms (on surfaces or in air) that are considered to be 'safe' or 'unsafe'.

The established methodology for assessing microbial levels is to collect samples from both affected and non-affected locations and make comparisons. It is common for there to be large variations detected between locations and therefore Clearsafe, in line with the industry accepted standard, uses the following triggers to indicate a need for remediation or further investigation:

- Evident mould growth as observed by a trained and experienced consultant.
- Microbial sample results greater than double (x2) the reference sample.

5 Observations

The site consists of the Helensburgh Community Centre located at 26 Walker Street Helensburgh. The primary area of concern for this report is within the subfloor of the Helensburgh Community Centre basketball court.

Clearsafe was advised the following information from the client:

- The timber floorboards of the western section (approximately $\frac{1}{3}$) of the basketball courts were scheduled to be removed and replaced. A small section of the timber floorboards were removed (approximately 1m x 1.5m) and the client noticed the deteriorated condition of the timber joists and what appeared to be visible mould growth
- New ventilation is to be installed along the western wall of the basketball court
- The basketball court is hired out to external parties for use
- Mouldy/musty olfactory sensations had been reported within the subfloor of the basketball court

The following observations were noted during the inspection:

- A mouldy/musty odour was present within the subfloor of the basketball court at the time of the inspection
- The western section of the basketball court had been fenced off to restrict access
- Visible microbial growth was observed on the underside of the floorboards and on structural timber joists within the subfloor (refer to photos in Appendix A)
- The ground surfaces and timber joists/bearers within the subfloor were visibly damp in multiple locations, the timber bearers/joists were dripping with water at the time of the inspection
- A white growth was observed on the western and northern brick walls of the subfloor, both of which were also considerably wet
- Several timber joists and timber bearers within the subfloor had completely broken off and/or were significantly damaged compromising the timber floors structural integrity
- Viewed from above, several spots on the basketball court were visibly uneven
- Several fibrous cement fragments (presumed to be asbestos-containing) were found within the subfloor at the time of the inspection

- Pipes were observed along the western brick wall of the subfloor that extend from the outside of the building to within the subfloor (believed to be the source of the water ingress)

6 Moisture Level Spot Checks

Method:

A Tech Check Plus hand held moisture meter was used to measure moisture within timber surfaces in several locations.

Results:

Table 1: Moisture level of timber surfaces

Location	Timber Surfaces (%)
Internal, basketball court (western section), subfloor timber bearer immediately adjacent exposed entry	Above instrument threshold (Tech Check Plus reading displayed as HIGH)
Internal, basketball court (western section), subfloor timber joist immediately adjacent exposed entry	Above instrument threshold (Tech Check Plus reading displayed as HIGH)
Internal, basketball court (western section), timber hardwood floor immediately adjacent exposed entry	12.7%
Internal, basketball court (central section), underside of timber joist	17.1%
Internal, basketball court (eastern section), underside of timber bearer	15.6%

Discussion:

Moisture level results for all of the measured timber building materials were above 10%, at the time of inspection. Moisture levels for timber surfaces above 10% are considered a trigger level for treatment/further assessment. It is noted that at the time of the inspection, water was visibly observed dripping from the timber joists/bearers throughout several locations within the subfloor and also on inspected brick wall surfaces within the subfloor (northern and western). The need for remediation and/or further investigation is recommended.

7 Surficial Microbial Sampling

Method:

Surficial microbial sampling was undertaken in eight (8) locations using swabs (Including a blank and reference sample). The swabs are used to collect microbial spores from direct contact with surfaces and are then placed onto growth media and incubated in a controlled environment, before being analysed for viable colony forming units (CFU). The results are then compared with control samples collected from a similar non-affected location nearby.

Results:

Table 2: Surficial Microbial Counts Using Swabs

Sample No.	Location	Bacteria Count (CFU/plate)	Yeast Count (CFU/plate)	Mould Count (CFU/plate)
20-12361/ Blank	Field Blank	10 est.	<10	1100
20-12361/ Ref	Internal, basketball court, on fire hose reel box immediately adjacent southern entry	<10	<10	10 est.
20-12361/ S1	Subfloor (beneath basketball court), on broken timber joist directly below western subfloor access point	5000	<10	1900
20-12361/ S2	Subfloor (beneath basketball court), on western brick wall	56000 est.	<10	400
20-12361/ S3	Subfloor (beneath basketball court), on broken timber bearer immediately adjacent subfloor access point	5500	<10	2200
20-12361/ S4	Subfloor (beneath basketball court), on northern brick wall	350	<10	500

20-12361/ S5	Subfloor (beneath basketball court), centrally located, on underside of timber floorboards	11000	Unable to determine Yeast count due to TNTC mould	>3000 est.
20-12361/ S6	Subfloor (beneath basketball court), on top surface of PVC pipe immediately adjacent eastern subfloor entry	7200	Unable to determine Yeast count due to TNTC mould	>3000 est.

Note: est. = Estimated

Discussion:

With reference to Table 2, above, results indicate that all sampled locations returned detectable microbial concentrations at levels that suggest significant viable mould and bacteria. Samples 5 and 6 were unable to give accurate detectable yeast concentrations due to overgrown mould. However, all sample locations exhibited concentrations above double that of the reference sample, suggesting the need for further testing and/or remedial works. The mould count reported to the field blank sample is likely due to cross contamination and does not invalidate the results.

8 Conclusion

Clearsafe Environmental Solutions Pty Ltd (Clearsafe) was requested by Quadracon Building to undertake a limited assessment with regard to microbial levels within the subfloor space beneath the basketball court at the Helensburgh Community Centre, 26 Walker Street, Helensburgh NSW 2508. The investigation was commissioned following the identification of visible mould and broken timber joists within the subfloor of the Community centre during renovation works. Concerns were subsequently raised about the structural integrity of the timber floorboards and joists and any possible risk that the microbial impacts may present to any of the occupants within the immediate area during renovation.

Moisture level results for all of the measured timber building materials were above 10%, at the time of inspection. Moisture levels for timber surfaces above 10% are considered a trigger level for treatment/further assessment. It is noted that at the time of the inspection, water was visibly observed dripping from the timber joists/bearers throughout several locations within the subfloor and also on inspected brick wall surfaces within the subfloor (northern and western). The need for remediation and/or further investigation is recommended.

Surface swab analysis results indicate that all sampled locations returned detectable microbial concentrations at levels that suggest significant viable mould and bacteria. Samples 5 and 6 were unable to give accurate detectable yeast concentrations due to overgrown mould. However, all sample locations exhibited concentrations above double that of the reference sample, suggesting the need for further testing and/or remedial works. The mould count reported to the field blank sample is likely due to cross contamination and does not invalidate the results.

In conclusion, moisture readings in conjunction with surface swab analysis suggests that there is an underlying moisture ingress/microbial growth issue which appears to be present within the entirety of the basketball court subfloor. A visual inspection of the subfloor identified several timber bearers and timber joists that were either partially broken or had completely detached from their former position due to rot. Water was visually observed dripping from several of the timber joists within the subfloor and was also observed on the northern and western brick walls of the subfloor, coupled with what appeared to be a white powdery substance, which the inspecting consultant is of the belief is most likely efflorescence. Ground surfaces of the subfloor displayed evidence of dampness and trenches which appeared to be pathways for water ingress. A musty/damp odour was also present within the subfloor at the time of the inspection. Clearsafe recommends appropriate remediation as part of renovation.

As per the Australian Mould Guidelines, mould damage is classified into a class system based on the extent and visible microbial impacts observed. As the mould damage was visible throughout the entirety of the subfloor beneath the basketball court and is compromising the structural integrity of the timber hardwood floor, the remedial works would

be classified as a ***Building Class 4 - Extensive Visible Growth Greater Than 10m2 (Large Job)***.

9 Recommendations

The following recommendations apply to the microbial remediation works:

- Remediation work should be carried out by professional contractors in accordance with relevant guidelines and in consideration of the following points.
- The work area should not be occupied during cleaning processes.
- Conduct a building inspection by a professional building inspector to investigate the source of the water ingress within the subfloor, particular attention should be paid to the northern and western sides of the basketball court where the drainage extends from the exterior through the brick wall into the subfloor. Given the compromised structural integrity of the timber bearers and joists within the subfloor, Clearsafe recommends that access within it is restricted/limited.
- Clearsafe recommends that access to the basketball court by external parties (outside of companies working on behalf of the current scope of works) is completely restricted due to safety concerns posed by the structural integrity of the basketball court.
- Clearsafe is of the understanding that as a part of the original remediation works, Quadracon was engaged to remove a nominated section of the timber hardwood floors within the basketball court. Clearsafe suggests that the original scope of works is reassessed and extended to include the entirety of the timber hardwood floors due to the uniform nature of damage observed throughout the subfloor during the inspection. It is also suggested that further consideration be undertaken in regards to the replacement of the timber bearers and joists within the subfloor.
- As per the Australian Mould Guidelines, mould damage is classified into a class system based on the extent and visible microbial impacts observed. As the mould damage was visible throughout the entirety of the subfloor beneath the basketball court and is compromising the structural integrity of the timber hardwood floor, the remedial works would be classified as a **Building Class 4 - Extensive Visible Growth Greater Than 10m² (Large Job)**. As per these guidelines the area should be restricted and clearly signposted, ground surfaces within the subfloor covered in plastic sheets and HVAC, ventilation and exhaust ducts adequately sealed. A decontamination unit installed at one of the entrances to the basketball court and all other access points adequately sealed and placed under negative air pressure by using an exhaust fan with a HEPA filter. All timber materials to be disposed of should be wrapped in plastic bags and the external of the bags HEPA vacuumed in the decontamination unit prior to removal from the enclosure. PPE should include disposable overalls, gloves, shoe protectors and a full face respirator mask with HEPA filtration with an activated carbon or organic vapour filter.

-
- Throughout the course of the inspection fibrous cement fragments suspected of containing asbestos were observed sporadically scattered throughout the subfloor ground surfaces. Clearsafe recommends an emu pick of the ground surfaces, with consideration given to conducting a scrape of 50-100mm of soils within the subfloor due to the incredibly damp and most likely microbial impacted nature of the soils. If any material suspected of containing asbestos is identified in the future (outside of that already identified), stop work immediately, restrict access to the impacted area and contact Clearsafe for further advice.
 - Clearsafe is of the understanding that the western wall of the basketball court is also being replaced and new ventilation is being installed, it is recommended that the northern wall of the basketball court is also removed and replaced and adequate ventilation installed to allow for air flow within the subfloor.
 - Post mould remediation works reduce the humidity within the basketball court subfloor by natural or artificial means (desiccant, dehumidifiers, increasing air flow).
 - Post mould remediation works, increase natural light levels and ventilation within the basketball court subfloor.
 - An Occupational Hygiene consultant should be contacted to conduct a final inspection and clearance testing following remediation work.

10 Closure and Contact Information

For any queries relating to this report, please contact Clearsafe on 1300 042 962 or info@clearsafe.com.au.

Clearsafe is pleased to provide our consulting services for this commission.

Kind Regards,



Luke Parkins
Project Consultant



Michael Fernandez
Regional Manager

APPENDIX A

SITE PHOTOGRAPHS

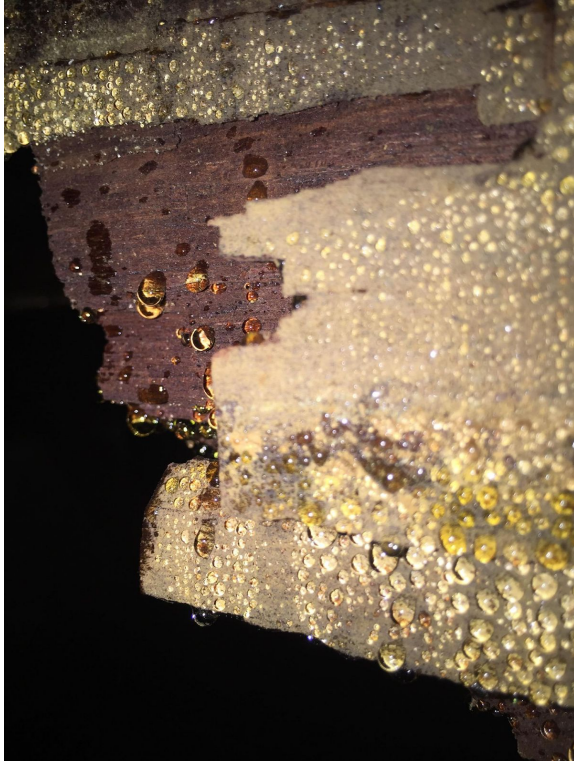
Photo	Location
	Representative photograph of the basketball court (including the western 'restricted' section)
	Representative photograph of the western access point into the subfloor



Representative photograph of one of the pipes along the western wall of the subfloor



Representative photograph of several floor timber joists that have partially broken and are coated with moisture



Representative photograph of one (of many) of the floor timber joists



Representative photograph of a broken floor timber joist within the subfloor



Representative photograph of a fractured floor timber bearer



Representative photograph of remnant fibrous cement sheeting within the subfloor



Representative photograph of fibrous cement packers supporting the timber bearers



Representative photograph of the northern brick wall within the subfloor



Representative photograph of a floor timber bearer immediately adjacent the northern brick wall

APPENDIX B

LABORATORY REPORTS

COA No:	SYD-51514163-0
Supersedes:	None
COA Date:	07/12/2020
Page 1 of 5	

TO:

Clearsafe Environmental Solutions
 Clearsafe Environmental Solutions
 PO Box 337
 UNANDERRA, NSW 2526

Received From:	Unanderra, NSW
Received Date:	27/11/2020

Location of Test: (except where noted)	Regents Park, NSW
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Analytical Results

Desc. 1: ^		20-12361/Blank		Sample Number: 456455852	
				Condition Rec'd: NORMAL	
				Temp Rec'd (°C): 18.0	
				Date Started: 27/11/2020	
Results apply only to the sample as received					
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	10 est.	CFU/swab	M17.2	30/11/2020	
Total Mould Count	1100	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	

Desc. 1: ^		20-12361/Ref		Sample Number: 456455854	
				Condition Rec'd: NORMAL	
				Temp Rec'd (°C): 18.0	
				Date Started: 27/11/2020	
Results apply only to the sample as received					
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	<10	CFU/swab	M17.2	30/11/2020	
Total Mould Count	10 est.	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	



Accredited for compliance with ISO/IEC 17025 - Testing
 NATA Corporate Accreditation Number: 2020
 Melbourne Microbiology Site No: 2013
 Sydney Microbiology Site No: 2759 Chemistry Site No: 2135
 Perth Microbiology Site No: 10635
 Brisbane Microbiology Site No: 15147
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^ Customer supplied information

The data pertains solely to the analytical and sampling procedure(s) used and the condition and homogeneity of the sample(s). The data therefore may not be representative of the lot or batch or other samples.

This report shall not be reproduced except in full.
 Measurement Uncertainty (MU) can be found by logging in to MyMXNS

TGA Licence No: MI-04072005-LI-000664-2

AU-COA-33 v8

COA No:	SYD-51514163-0
Supersedes:	None
COA Date:	07/12/2020
Page 2 of 5	

TO:

Clearsafe Environmental Solutions
 Clearsafe Environmental Solutions
 PO Box 337
 UNANDERRA, NSW 2526

Received From:	Unanderra, NSW
Received Date:	27/11/2020

Location of Test: (except where noted)	Regents Park, NSW
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Analytical Results

Desc. 1: ^	20-12361/S1	Sample Number: 456455855			
		Condition Rec'd: NORMAL			
		Temp Rec'd (°C): 18.0			
		Date Started: 27/11/2020			
		Results apply only to the sample as received			
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	5000	CFU/swab	M17.2	30/11/2020	
Total Mould Count	1900	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	

Desc. 1: ^	20-12361/S2	Sample Number: 456455856			
		Condition Rec'd: NORMAL			
		Temp Rec'd (°C): 18.0			
		Date Started: 27/11/2020			
		Results apply only to the sample as received			
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	56000 est.	CFU/swab	M17.2	30/11/2020	
Total Mould Count	400	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	



Accredited for compliance with ISO/IEC 17025 - Testing
 NATA Corporate Accreditation Number: 2020
 Melbourne Microbiology Site No: 2013
 Sydney Microbiology Site No: 2759 Chemistry Site No: 2135
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TGA Licence No: MI-04072005-LI-000664-2

AU-COA-33 v8

COA No:	SYD-51514163-0
Supersedes:	None
COA Date:	07/12/2020
Page 3 of 5	

TO:

Clearsafe Environmental Solutions
 Clearsafe Environmental Solutions
 PO Box 337
 UNANDERRA, NSW 2526

Received From:	Unanderra, NSW
Received Date:	27/11/2020

Location of Test: (except where noted)	Regents Park, NSW
--	-------------------

Analytical Results

Desc. 1: ^	20-12361/S3	Sample Number: 456455857			
		Condition Rec'd: NORMAL			
		Temp Rec'd (°C): 18.0			
		Date Started: 27/11/2020			
		Results apply only to the sample as received			
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	5500	CFU/swab	M17.2	30/11/2020	
Total Mould Count	2200	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	

Desc. 1: ^	20-12361/S4	Sample Number: 456455858			
		Condition Rec'd: NORMAL			
		Temp Rec'd (°C): 18.0			
		Date Started: 27/11/2020			
		Results apply only to the sample as received			
<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>	<u>Loc.</u>
Total Bacterial Count	350	CFU/swab	M17.2	30/11/2020	
Total Mould Count	500	CFU/swab	M17.2	02/12/2020	
Total Yeast Count	<10	CFU/swab	M17.2	02/12/2020	



Accredited for compliance with ISO/IEC 17025 - Testing
 NATA Corporate Accreditation Number: 2020
 Melbourne Microbiology Site No: 2013
 Sydney Microbiology Site No: 2759 Chemistry Site No: 2135
 Perth Microbiology Site No: 10635
 Brisbane Microbiology Site No: 15147
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TGA Licence No: MI-04072005-LI-000664-2

AU-COA-33 v8

COA No:	SYD-51514163-0
Supersedes:	None
COA Date:	07/12/2020
Page 4 of 5	

TO:

Clearsafe Environmental Solutions
 Clearsafe Environmental Solutions
 PO Box 337
 UNANDERRA, NSW 2526

Received From:	Unanderra, NSW
Received Date:	27/11/2020

Location of Test: (except where noted)
 Regents Park, NSW

Analytical Results

Desc. 1: ^		20-12361/S5		Sample Number: 456455859	
				Condition Rec'd: NORMAL	
				Temp Rec'd (°C): 18.0	
				Date Started: 27/11/2020	
Results apply only to the sample as received					
<u>Analyte</u>		<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>
Total Bacterial Count		11000	CFU/swab	M17.2	30/11/2020
Total Mould Count		>3000 est.	CFU/swab	M17.2	07/12/2020
Total Yeast Count		Unable to determine the	CFU/swab	M17.2	07/12/2020
		Yeast Count due to TNTC			
		mould.			

Desc. 1: ^		20-12361/S6		Sample Number: 456455860	
				Condition Rec'd: NORMAL	
				Temp Rec'd (°C): 18.0	
				Date Started: 27/11/2020	
Results apply only to the sample as received					
<u>Analyte</u>		<u>Result</u>	<u>Units</u>	<u>Method Reference</u>	<u>Result Date</u>
Total Bacterial Count		7200	CFU/swab	M17.2	30/11/2020
Total Mould Count		>3000 est.	CFU/swab	M17.2	07/12/2020
Total Yeast Count		Unable to determine Yeast Count due to TNTC mould.	CFU/swab	M17.2	07/12/2020



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 Sydney Microbiology Site No: 2759 Chemistry Site No: 2135
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TGA Licence No: MI-04072005-LI-000664-2

AU-COA-33 v8

SILLIKER AUSTRALIA
SYDNEY LABORATORY
Unit C2, 391 Park Road
Regents Park, NSW 2143
02 8718 6888 Fax 02 8718 6899

CERTIFICATE OF ANALYSIS

COA No:	SYD-51514163-0
Supersedes:	None
COA Date:	07/12/2020
Page 5 of 5	

TO:

Clearsafe Environmental Solutions
Clearsafe Environmental Solutions
PO Box 337
UNANDERRA, NSW 2526

Received From:	Unanderra, NSW
Received Date:	27/11/2020

Location of Test: (except where noted)
Regents Park, NSW

Analytical Results



GEORGE GEORGAS
LABORATORY MANAGER

MXNS Abbreviations/Definitions:

| <: Less Than | >: Greater Than | CFU: Colony Forming Units | D: Detected | ND: Not Detected | MPN: Most Probable Number | LOR: Level of Reporting | LOD: Level of Detection |
| LOQ: Limit of Quantification | est.: Estimate |



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NATA Corporate Accreditation Number: 2020
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AU-COA-33 v8

AUSTRALIAN MOULD GUIDELINE

AMG-2005-1

Editors
**Dr Peter Kemp &
Dr Heike Neumeister-Kemp**

First Edition March 2005

Those working in the Mould Industry should read this document in conjunction with the ACMR / ACMI Reference Manual for Australian Certified Mould Remediators and Investigators.

Please note that this is not an Australian Standard as published by Standards Australia. This document is currently a guideline and is intended to become an industry based standard.

This document is in review and its contents will be subject to change.

Positions on the review panel are open for application. Please contact the editors if you feel you can participate by either revising or by contributing further material to this document.

First Edition

Published March 2005

Editors: Dr Peter Kemp and Dr Heike Neumeister-Kemp

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DISCLAIMER

All mould workers who are using this document must keep in mind that developments in the mould industry are advancing rapidly. It is critical to keep ahead of these developments and modify your practices accordingly. Commonsense, experience and professional judgment should be used at all times to determine that correct levels of PPE, containment and hazard communication are used.

The authors have not personally independently tested and verified all the suggested practices and assessment or judgment strategies described in this document.

This document includes the experience and knowledge of local mould professionals and material and information from a review of current international guidelines and standards on dealing with mould contamination. The reference documents used in the writing of this standard are listed in the bibliography. In cases where information may appear to be similar to that found in other documents, it should be kept in mind that the Authors of this document have participated in the writing of many of these documents. There are basic hazard requirements when dealing with mould that are universal.

While other international standards and guidelines are referred to in this document, this document can be used as a guide that has been tailored to Australian conditions by Australian Professionals and Academics.

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TABLE OF CONTENTS

1	PREScribed ILLNESSES & DUTY OF CARE	6
1.1	BIOHAZARD COMMUNICATION STRATEGY	6
1.2	HEALTH SYMPTOMS AND COMPLAINTS RELATED TO MOULD DAMAGE.....	6
2	MOULD AND INDOOR AIR QUALITY	7
3	IDENTIFYING MOULD GROWTH INDOORS	7
3.1	GATHERING INFORMATION.....	7
3.1.1	Health Complaints.....	7
3.2	ASSESSING MOULD DAMAGE.....	7
3.2.1	Information Gathering Questionnaire Checklists.....	7
3.2.2	Initial Risk Assessment.....	8
3.2.3	PPE for Initial Inspection.....	8
3.2.4	Visual Inspection.....	8
3.2.5	Mould Sampling as Part of an Assessment.....	8
3.2.6	Basic Sampling Techniques and Principles.....	8
3.2.7	Taking Moisture Readings.....	8
3.2.8	Surface Sampling.....	8
3.2.9	Bulk Dust and Material Sampling.....	8
3.2.10	Airborne Sampling.....	9
3.2.11	The Importance of Species Identification.....	9
3.2.12	Analysis of Mould Samples.....	9
4	THE FUNDAMENTALS OF MOULD REMEDIATION.....	9
5	CONTAINMENT PROCEDURES TO PREVENT CROSS CONTAMINATION.....	9
5.1	REMOVAL OF CONTAMINATED MATERIALS	9
5.2	REMOVAL OF BUILDING CONTENTS.....	10
5.2.1	Assessment.....	10
5.2.2	Removal of Contents from Affected Areas.....	10
5.2.3	Inventory, Packing, Transport and Storage.....	10
6	MOULD CLEANING PROCEDURES.....	10
6.1	CLEANING LOCATION	10
6.2	OUTDOORS VERSUS MULTI-CHAMBER CLEANING.....	10
6.3	MOULD CLEANING & REMOVAL STRATEGIES.....	10
6.3.1	Air-Based Methods (recommended).....	10
6.3.2	Liquid-Based Methods (recommended).....	10
6.3.3	Chemical Based Methods (not recommended).....	10
6.3.4	Abrasive Methods (not recommended).....	11
6.3.5	Appearance Enhancement (not recommended).....	11
6.3.6	Encapsulation (not recommended).....	11
6.4	REMIEDIATING MATERIALS	11
6.4.1	Non Porous and Semi-Porous Materials.....	11
6.4.2	Porous Materials.....	11
6.4.3	Odour Control.....	11
6.5	VERIFICATION OF REMEDIATION EFFECTIVENESS	11
7	MOULD DAMAGE CLASSIFICATION SYSTEM.....	11
7.1	BUILDING CLASS 1 - NORMAL.....	11
7.2	BUILDING CLASS 2 - LOCAL AREA LESS THAN 1 m ² (CLEANING TO REMOVE MOULD).....	12
7.3	BUILDING CLASS 3 - LIMITED VISIBLE MOULD GROWTH TO LESS THAN 10 m ² (SMALL JOBS).....	12
7.4	BUILDING CLASS 4 - EXTENSIVE VISIBLE GROWTH GREATER THAN 10m ² (LARGE JOBS).....	12
7.5	BUILDING CLASS 5 - STRONG INDICATION OF MOULD BUT NO VISIBLE EVIDENCE	13
7.6	BUILDING CLASS 6 - CROSS CONTAMINATION	13
7.7	BUILDING CLASS 7 HVAC SYSTEMS.....	14
7.8	BUILDING CLASS 7 - CLEAN ROOM.....	14
8	PPE CLASSIFICATION SYSTEM.....	14
8.1	PPE LEVEL 1	14
8.2	PPE LEVEL 2	14
8.3	PPE LEVEL 3	14
8.4	PPE LEVEL 4	15
9	GLOSSARY	16
10	BIBLIOGRAPHY AND REFERENCE DOCUMENTS.....	18

1 PRESCRIBED ILLNESSES & DUTY OF CARE

It is recommended that any area undergoing mould remediation be unoccupied during cleaning or remediation works.

In most cases it should not be necessary to evacuate people from adjacent areas as long as correct containment procedures are adhered to.

However, it is highly recommended that the people with the following health categories should be advised that temporary relocation would be in their best interests:

1. Infants less than 12 months old, and children less than 2 years old
2. People with compromised immune systems
3. People with chronic inflammatory lung disease such as:
 - a. Asthma
 - b. Hypersensitivity pneumonitis, and
 - c. Severe allergies
4. People recovery from recent surgery

Failure to inform or evacuate people in these conditions may lead to a serious breach of your duty of care. The immune system of children less than 2 years old may not be fully developed and there is evidence that Kawasaki syndrome is related to wet cleaning methods on carpets.

1.1 BIOHAZARD COMMUNICATION STRATEGY

When the remediation work involves a Grade 4 Building, then the building's owner, manager or the employer should notify occupants in the affected areas that mould growth requiring remediation has been detected. This should include a description of the basic results from testing and analysis, the type of remedial works that will be performed, and a schedule for completion.

It may be useful to conduct group meetings to communicate these matters and to allow open discussion with the affected occupants.

Individuals that may have health problems associated with exposure to mould should be advised to seek medical advice from qualified practitioners in occupational or environmental medicine or related disciplines that are knowledgeable about mould health hazards. Any individual that requires medical assessment should be provided with a copy of all inspection and sampling results and interpretations to take with them to their medical practitioners.

1.2 HEALTH SYMPTOMS AND COMPLAINTS RELATED TO MOULD DAMAGE

This section has been provided as a guide to understanding when complaints of odours or health symptoms reported by either occupants or mould remediation workers that may be due to the presence of mould growth. This is particularly useful for Grade 5 Buildings where there is little obvious evidence of mould damage. If any of the following symptoms appear to be related to time spent in the building then they should be duly noted and recorded.

1. Discomfort
2. Eye irritation
3. Runny nose
4. Sneezing
5. Coughing
6. Nausea / Diarrhoea
7. Headaches
8. Fatigue
9. Inability to concentrate
10. Constriction of air passages
11. Skin irritations
12. Congestion
13. Shortness of breath
14. Wheezing
15. Aggravation of asthma

2 MOULD AND INDOOR AIR QUALITY

Normally, our everyday exposure to airborne fungi in the outdoor air presents little or no risk to our health. However, the airborne fungi in the artificial environments of our buildings and dwellings have an altered composition, which can create an environment with the potential to greatly affect human health. This has led to the understanding that fungi can be a major cause of both illness and the severity of general symptoms, such as sick building syndrome (SBS), which are related to the amount of time spent indoors.

All fungi are initially microscopic in size with most spores ranging in size from 2 to 20 µm (microns). There are an enormous number of fungi with over 6000 genera and only 69,000 species have been described out of an estimated total of around 1.5 million species.

Many of the visible manifestations of fungi are commonly known and include yeasts, mould growth, mildew, large mushrooms, puffballs and bracket fungi. These are all the result of the convergence of millions of individual fungal units coming together to create larger structures.

The terms mould and fungi are used interchangeably. However that is more to do with their common usage. Normally moulds only refer to those fungi with a mycelial (filamentous) type of growth.

Fungi are eukaryotic organisms and share many basic characteristics of genetic makeup with humans. This is why chemical treatment to control fungal contamination should be very carefully considered before their widespread application is considered.

The study of fungi is called Mycology. A mycologist is one who can identify fungal species and has an understanding of fungal ecology. The two main branches of mycology are Medical mycology and Environmental Mycology. Only an Environmental Mycologist should be consulted for identifying indoor and outdoor fungal species and for understanding the ecology of mould contamination in buildings.

3 IDENTIFYING MOULD GROWTH INDOORS

A methodical approach should be taken towards mould work for reasons include ensuring personal safety, duty of care, and legal requirements. The first step is to gather information from the client and background information on the situation being investigated. Second step will be a site visit and inspection. The third step is to establish what procedures will be required to successfully deal with any moisture or mould damage problems identified.

3.1 GATHERING INFORMATION

The nature of the initial contact will determine the type of the job at hand and will depend on your abilities, experience and your ethics. The profession that was called first will greatly affect the direction and outcomes of the project. It is important to establish at the outset who is legally responsible for the situation at hand.

3.1.1 Health Complaints

In situations where there is a Building of Grade 3, 4 or 5 and the client or occupants complain of health symptoms, a medical assessment or contract the services of an Indoor Air Quality Professional for an indoor environmental assessment (IEA).

3.2 ASSESSING MOULD DAMAGE

The initial inspection will include gathering information, making a visual inspection, and taking moisture readings. From this you will then need to determine which Building Grade of Mould damage is present.

3.2.1 Information Gathering Questionnaire Checklists

To help gather appropriate information and thereby judge the level of a mould situation, it can be useful to use a questionnaire checklist. The essential elements of the questionnaire include property details; use of other professions or services; background information; mouldy odours or visible mould growth; complaints or health symptoms; and major illnesses of occupants. See the reference guideline for a detailed list of information.

3.2.2 Initial Risk Assessment

Anyone dealing with mould on a daily basis needs to tackle each job in a manner. Failure to use a professional and methodical approach to mould work can result in injury to workers, inspectors and occupant from exposure to mould allergens or toxins. The initial contact with any job is critical in ensuring a safe work environment.

The information you gather from the questionnaire checklist will determine the Building Grade, sampling strategy and OHS issues (PPE and containment). In situations of Building Grade 4 or 5, or where there are severe health symptoms or people at risk, then all work should be directed by an experienced mould inspector or IAQ assessor. Individuals with mould related illnesses may be directed to be evacuated from the building.

3.2.3 PPE for Initial Inspection

An appropriate level of PPE should always be worn by those undertaking inspections or remediation work. This includes guests invited to inspect the damage or remediation works such as building owners or managers etc.

3.2.4 Visual Inspection

An on-site visual inspection is the most important step to identify mould problems and for determining a remediation strategy. Important surfaces to inspect include porous materials. It is important to inspect for hidden growth behind furnishings or in building cavities. Any mechanical ventilation system should be inspected for moisture or mould damage.

Evidence of damage that should be recognisable during a visual inspection should include visible mould growth; surface condensation; flooding events & accidental spills; and High humidity. In situations where it is not possible to perform extensive inspection there may be "discovery" of hidden mould damage. All parties with vested interests should be made aware that additional inspection may be required. Discovery of hidden damage should be documented.

3.2.5 Mould Sampling as Part of an Assessment

There are a number of situations where it would be normal to consider taking mould samples as part of the initial assessment. These include wide spread mould growth; mould odours; wet or damp materials that were not dried within 48 hours; health or symptoms or complaints; for quality control; for health risk assessment; and for species identification.

3.2.6 Basic Sampling Techniques and Principles

Sampling is not always required. Where a situation is driven by medical or legal reasons then mould sampling can be used to establish either exposure or baseline contamination.

Moisture measurements should be the first type of measurements taken. Mould sampling should begin with relatively simple surface samples and can include bulk samples and air samples on larger jobs. All sampling should be done in conjunction with a mycological laboratory as they will have specific handling and shipping requirements.

3.2.7 Taking Moisture Readings

Only a person trained in moisture measuring techniques should determine the moisture content or moisture profile of a situation. The aim of taking moisture measurement is to establish the extent of moisture damage; to provide an indicator of hidden mould damage; and for quality control.

3.2.8 Surface Sampling

Only a person trained in mycological sampling techniques should perform surface sampling. Surface samples are the next level of testing after moisture readings. They can aid in identifying fungal species especially in cases where spores might be surface bound (not detected by air samples). The basic types of surface samples include Surface Swab samples; RODAC Plate samples; and Tape Lift-off Samples.

Other surface sampling methods may be available through a mycological laboratory. A mycological laboratory should be consulted for specific sampling and delivery instructions.

3.2.9 Bulk Dust and Material Sampling

Only a person trained in mycological sampling techniques should perform bulk sampling. Bulk sampling can be useful in detecting a wide range of fungal species. This method is typically performed either using a vacuum cleaner on carpets and textile surfaces, or to simply scrape off surface material. Small pieces of material can also be removed for analysis. However, local area containment procedures should be followed when removing material from known or suspected mouldy surfaces.

Other bulk sampling methods may be available through your mycological laboratory. They should also be consulted for specific sampling and delivery instructions.

3.2.10 Airborne Sampling

Only a person properly trained in advanced mycological sampling techniques should perform airborne mould sampling. Airborne sampling for mould is not part of a routine assessment. A qualified Mould Inspector or IAQ Assessor should be consulted in situations where health symptoms are related to mould or to time spent in a building.

The reasons for conducting airborne sampling include when the health symptoms are related to either mould exposure or to time spent in a building; as part of a detailed risk assessment; where mouldy odours are present but no apparent visible growth; as a part of clearance testing after remediation works.

Indoor air samples for mould should be conducted together with an outdoor air sample as a reference location. The comparison of species between the indoors and the outdoors is used to determine the source of fungal contamination. The type of fungal contamination whether hydrophilic or xerophilic can also be determined. Other air sampling methods may be available through your mycological laboratory. They should also be consulted for specific sampling and delivery or shipping instructions.

3.2.11 The Importance of Species Identification

The identification of mould species is critical as different species impact on both human health and building infrastructure in different ways and to different degrees. In general, the species in the indoor air should be similar to that in the outdoor air. When the indoors presents a mixture of fungal species that is fundamentally different from the outdoor air, then this represents an altered exposure to fungi and the presence of an interior source of fungi.

3.2.12 Analysis of Mould Samples

Mould samples should only be analyzed for fungal species by an experienced mycologist or microbiologist with training in environmental mycology. A laboratory should have a person that is qualified to analyse fungi; should have quality control data on hand and a written quality assurance plan; and should provide a thorough explanation of the analytical interpretation and results.

4 THE FUNDAMENTALS OF MOULD REMEDIATION

In all situations concerning mould growth indoors that requires remediation, the underlying cause of moisture that is supporting the growth must be repaired or fungal growth will re-occur. There should be an emphasis in the remediation works for the cause of moisture damage to be permanently repaired so that water damage does not re-occur.

It should be kept in mind that the goal of mould remediation is not to sterilise surfaces, but to return surfaces to their normal state before contamination. It should be kept in mind that the containment, PPE, hazard communication, and cleaning guidelines in this document are not definitive. Each remediation job needs to be assessed on its own merits and the persons performing the remediation works should ensure that adequate protection measures are taken.

5 CONTAINMENT PROCEDURES TO PREVENT CROSS CONTAMINATION

The remediation area should not be occupied. Except for large jobs (building Grade 4/5) it should not be necessary to evacuate people from adjacent areas if containment procedures are correctly applied. However it is recommended that persons with Prescribed Illnesses listed on page 6 should be informed or removed from adjacent areas.

5.1 REMOVAL OF CONTAMINATED MATERIALS

Caution to prevent cross contamination is required when handling contaminated materials that are being removed for disposal or for decontamination off-site. Materials should be wrapped in plastic and seal with tape.

Materials and items that are to be retained but require remediation should be transported to an off-site facility wrapped in plastic. The items or materials should then be immediately removed from the plastic wrapping and the plastic discarded in normal waste disposal. Remediation should begin immediately according to the material type being remediated.

Materials and items that are to be disposed should be placed gently in a covered disposal unit / bin. Contaminated materials should never be thrown from a distance into a disposal unit.

Disposal units and bins should not be located close to openings such as windows or doors including those of neighbouring properties. There are no requirements for specialised type of disposal unit for mouldy materials.

5.2 REMOVAL OF BUILDING CONTENTS

5.2.1 Assessment

Whether contaminated contents can be restored depends on their condition; material type; the cost of remediation; financial value or cost of replacement; and other types of value such as sentimental, legal, cultural, artistic, or historical etc.

Restore items that can be cleaned and returned to the client. Dispose items that will not be cleaned. Preserve with risk Assignment items that are irreplaceable but cannot be remediate completely.

All those with vested interests should be involved in the decision as to whether contents should be restore or disposed of.

5.2.2 Removal of Contents from Affected Areas

Avoid cross contamination when moving contents. Contaminated contents must be decontaminated or appropriately packaged when moved in or through uncontaminated areas. Contents should never be stored in plastic or sealed containers.

5.2.3 Inventory, Packing, Transport and Storage

A detailed inventory should be made of the contents before removal. Storage conditions should be dry and otherwise minimize conditions favourable to mould growth. Remediation should proceed as soon as practical to avoid further damage and mould growth. The clean contents should not be returned to a contaminated area.

6 MOULD CLEANING PROCEDURES

The goal of mould cleaning is to bring items and materials back to normal (before contamination) conditions. The purpose is not to sterilize an item or necessarily improve its appearance.

6.1 Cleaning Location

On-site cleaning eliminates the cost of packing, transport and storage but may extend the remediation period and has an increased risk of cross-contamination. In-plant cleaning minimizes the time before structural drying work can start, which can drastically reduce the time required to reinstate the property back to conditions prior to the mould contamination.

6.2 Outdoors versus Multi-chamber Cleaning

When cleaning contents outdoors without containment enough distance must be provided to any adjacent buildings, air intakes or unprotected people. Remediation workers must wear appropriate PPE.

6.3 Mould Cleaning & Removal Strategies

A cleaning method should be chosen with the aim of producing the least amount of dust possible to limit workers exposure. More than one method may be necessary. Old buildings potential contain lead based paints and only should be properly assessed and remediate by specially trained personnel in hazardous material handling.

6.3.1 Air-Based Methods (recommended)

Air based methods physically remove contamination by vacuuming off or blasting off with air to dislodge contaminants and include HEPA filter vacuum cleaning; air washing; laminar-flow; and down draft cleaning tables.

6.3.2 Liquid-Based Methods (recommended)

Liquid-Based Methods use water combined with the mechanical action of cleaning and include damp-wiping with a detergent, vinegar solution or 70% alcohol solution; ultrasonic cleaning; steam cleaning; low pressure flushing, and high-pressure washing.

6.3.3 Chemical Based Methods (not recommended)

The use of surface chemical treatments is not recommended as they appear to have limited effect and introduce further chemical pollution into the indoor environment. Chemical Based Methods rely on toxic substances to kill the fungal growth and do not by themselves remove the contamination. These include: anti fungal / microbial agents; gaseous, vapour phase or aerosolized biocides; Ozone, Bleach, Alcohol (100%), quaternary ammonia, formaldehyde etc; and pH changing acidic or alkaloid treatments.

The use of gaseous, vapour phase or aerosolised biocides is not recommended. Using chemicals in this manner can cause adverse health effects in individuals returning to a site and occupants in adjacent areas. The benefits of this treatment are unproven.

6.3.4 Abrasive Methods (not recommended)

These rely on the use of a medium to physically dislodge contaminants. These methods are not recommended in general due to the potential for damaging surface structure, which can aid in degrading the material and thereby aid future fungal attack. Old buildings potential contain lead based paints and only should be remediated by specially trained personnel in hazardous material handling.

6.3.5 Appearance Enhancement (not recommended)

These are not cleaning methods and are not recommended and include polishing, waxing and buffing.

6.3.6 Encapsulation (not recommended)

These are not cleaning methods and are not recommended and include application of coating over porous or semi-porous material; and lamination of irreplaceable documents or photos.

6.4 Remediating Materials

6.4.1 Non Porous and Semi-Porous Materials

Non porous materials and semi porous materials that are visibly mould should be able to be cleaned and reused.

6.4.2 Porous Materials

Porous materials with mould damage to more than a small area ($>1 \text{ m}^2$) should be removed and discarded. Materials that can be cleaned can be remediate if necessary, but should be discarded if possible. Porous materials with mould growth to more than a small area should only be remediate by a professional restoration consultant. All porous materials that are remediate and returned to site should be dry and free of visible contamination and odours and should be periodically inspected to ensure the restoration was successful.

6.4.3 Odour Control

If ozone treatment is to be used for odour control, then the item must first undergo

restoration by drying and removing the mould growth with the recommended cleaning methods. The use of gaseous, vapour phase or aerosolised deodorants is not recommended. Using chemicals in this manner can cause adverse health effects in individuals returning to a site and occupants in adjacent areas.

6.5 Verification of Remediation Effectiveness

The effectiveness of restoration to contents and remediation works to any larger sized job (Building Grade 3 or 4) should be verified by independent mould testing and analysis. In particular, large jobs that require high levels of containment and PPE should not be re-occupied until mycological testing has verified that the area is fit for re-habitation.

7 MOULD DAMAGE CLASSIFICATION SYSTEM

The following classification system is to be used as a guide for mould remediators to help judge whether or not they are competent in managing the full extent of a remediation job. The building classification system includes the following types of mould damage:

1. BUILDING CLASS 1 - Normal
2. BUILDING CLASS 2 - Local Area Less Than 1 m^2 (Cleaning to Remove Mould)
3. BUILDING CLASS 3 - Limited Visible Mould Growth to Less Than 10 m^2 (Small Jobs)
4. BUILDING CLASS 4 - Extensive Visible Growth Greater Than 10 m^2 (Large Jobs)
5. BUILDING CLASS 5 - Strong Indication of Mould Contamination but no Visible Evidence
6. BUILDING CLASS 6 - Cross Contamination
7. BUILDING CLASS 7 - Clean Room

7.1 BUILDING CLASS 1 - Normal

Normal situation in most houses and buildings without mould damage. All fungi detected indoors would originally be from the outdoors as no indoor sources of mould should be present. Building Grade 1 situations can be entered using Level 1 PPE.

7.2 BUILDING CLASS 2 - Local Area Less Than 1 m² (Cleaning to Remove Mould)

This level of building class refers to the initial inspection and sample taking process and to very small areas of visible mould growth that can be effectively cleaned using relatively simple methods. In particular this refers to either a small area of visible growth less than 1m² in area, or the conditions normally experienced during an initial site assessment on small jobs when taking samples or drilling inspection holes for borescope etc.

Building Grade 2 situations should only be entered using Level 2 PPE. Containment of the entire work area should not be necessary. The work area should not be occupied during inspections, cleaning or removal of contents or materials. It should not be necessary to evacuate people in adjacent areas except those with prescribed illness listed on page 6. Local areas for cleaning or removal can be sealed in plastic where required.

Remediation can be performed by normal building maintenance personnel that have been trained in Mould Hazard Awareness, PPE, and effective methods for cleaning mould. The entrance and exit locations used by the remediation / cleaning personnel should be cleaned with a HEPA vacuum cleaner and damp wiped with a cloth and vinegar solution. All areas should be left dry and free from visible mould contamination and debris. No final mould clearance testing would normally be necessary.

7.3 BUILDING CLASS 3 - Limited Visible Mould Growth to Less Than 10 m² (Small Jobs)

This classification concerns an indoor environment that has sustained serious mould damage over a period of time. The visible mould growth would be clearly visible on less than 25% of all surfaces or not greater than 10 m².

Building Grade 3 situations should only be entered using Level 3 PPE. The work area should not be occupied during cleaning or the removal of contents or materials or during inspections. It should not be necessary to evacuate people in adjacent areas except those with prescribed illness listed on page 6.

Containment of the entire work area should be performed before remediation commences. This will include covering the work area with plastic sheeting and sealing the edges with

tape to contain dust and remediation debris. Dust suppression methods should be applied to any material before it is disturbed. The waste should be carefully collected and wrapped in plastic and disposed of off-site.

Remediation can be performed by building maintenance personnel that have been trained in Mould Hazard Awareness, PPE, and effective methods for cleaning mould and remediating building materials. The entrance and exit locations used by the remediation / cleaning personnel should be cleaned with a HEPA vacuum cleaner and damp wiped with a cloth and vinegar solution. All areas should be left dry and free from visible mould contamination and debris. Final mould clearance sampling is highly recommended and should include several air and surface sample. Occupants should be cautioned not to return to the remediate area until after mycological analysis has determined that target species have been controlled or eliminated.

7.4 BUILDING CLASS 4 - Extensive Visible Growth Greater Than 10m² (Large Jobs)

This classification concerns an indoor environment that has sustained severe mould damage that has affected the structural integrity of building materials such as wall and ceiling linings. Visible mould growth occurs on greater than 25% or more than 10 m² on interior surfaces. Structural materials most likely have high moisture contents and will require specific drying.

Building Grade 4 situations should only be performed using Level 4 PPE. The work area should be clearly marked with a sign stating "Biohazard Do Not Enter" during the entire remediation period. A list of remediation works and a completion schedule should be posted near the Biohazard sign. Hazard communication measures listed in page 6 should be made available to all people in adjacent areas.

Containment of the entire work area should be performed before remediation commences. This will include covering the work area and immediate adjacent areas with plastic sheeting and sealing the edges with tape to contain dust and remediation debris. HVAC, ventilation and exhaust ducts should be sealed with plastic and the edges taped to prevent remediation dust from further contaminating them.

The area should be placed under negative pressure by using an exhaust fan with a HEPA filter. Air scrubbers can be used as an area dust and spore suppression method. The entrance to the work area should be controlled through an air lock and decontamination room. These can be constructed from plastic sheeting over a demountable frame. All edges should be sealed with tape.

The work area should not be occupied during cleaning, removal of contents or materials or during inspections. It may be necessary to evacuate people in adjacent areas especially those with prescribed illness listed on page 6.

Any materials or contents that cannot be cleaned should be removed by wrapping in plastic bags. The outside of the plastic bags should be HEPA vacuum cleaned in the decontamination chamber before transporting through uncontaminated areas for disposing off-site in normal rubbish disposal. Dust suppression methods should be applied to any material before it is disturbed.

Remediation should be performed by personnel that have been trained in handling hazardous materials. The remediation area and the air lock and decontamination chamber and their immediate surrounds should be left dry and free from visible mould contamination and debris.

Extensive air and surface monitoring should be conducted in the remediate area. Occupants should only be allowed to return to the remediate area until after mycological analysis has determined that the area is fit to re-occupy.

7.5 BUILDING CLASS 5 - Strong Indication of Mould but no Visible Evidence

Remediation should not commence until the building has been properly assessed. This class of mould damage might be characterised by any of the following situations:

1. Complaints of health symptoms with no visible growth,
2. Complaints of obnoxious mouldy odours with no visible growth,
3. Signs of structural weakness such as visible destruction to timber or dry rot,
4. Evidence of previous moisture damage that was dried but there are complaints of odours or symptoms but no visible growth
5. Other consultants have measured high concentrations of parameters such as

MVOCs or VOCs without any obvious source.

The source for symptoms in this situation needs to be thoroughly investigated.

The level of PPE required to enter a Building Grade 5 for investigation will vary according to the situation at hand.

- Level 2 PPE should be used where there is little evidence of widespread damage and no health complaints,
- Level 3 PPE should be used where there have been some health symptoms reported by individuals or mouldy odours etc.
- Level 4 PPE should be used if there have been serious symptoms or strong odours reported or where the investigator is to remain in the building for more than 30 minutes.

The work area should not be occupied during inspections. It may be necessary to warn people in adjacent areas of the potential hazards especially those with prescribed illness listed on page 6.

No remediation should proceed until the building has been thoroughly assessed by a qualified Mould Inspector or IAQ Assessor.

7.6 BUILDING CLASS 6 - CROSS CONTAMINATION

This classification concerns an indoor environment that was Building Grade 1, but has been contaminated by spores and dust that originated from a Building Grade 2, 3 or 4. This can occur where remediation has been performed to adjacent areas and the containment procedures have not been followed, or where containment barriers have failed.

This may include small areas of visible growth (colonies less than 1mm diameter) that have occurred from the recent settling of spores, which have encountered sufficient moisture to begin growth.

This situation can only be returned to Building Grade 1 if the cross contamination is dealt with in a timely manner. If this situation is left for a period greater than 48 hours, or when widespread visible mould growth occurs, then the remediation works will need to be conducted as either Building Grade 2, 3 or 4 depending on the extent of the damage.

Building Grade 6 situations should only be remediate according to the level of contamination:

- Level 2 PPE should be used where there is minor evidence such as low concentrations of target species detected on surface or airborne samples.
- Level 3 PPE should be used if there is moderate or high evidence such as high levels of target species from the adjacent remediation area in surface and/or airborne samples.

The work area should not be occupied during remediation. In cases of high evidence of cross contamination, it may be necessary to warn or evacuate people in adjacent areas due to potential hazards especially those with prescribed illness listed on page 6.

Large areas with high concentrations of target species should be sealed with plastic and taped at the edges to prevent further cross contamination during cleaning. All cleaning should be thorough or meticulous with a high efficiency vacuum cleaner with a HEPA filter and a damp cloth and vinegar solution.

Remediation should be a thorough or meticulous cleaning with a high efficiency vacuum cleaner with a HEPA filter and a damp cloth and vinegar solution on all surfaces to removed settled spores and dust.

The entrance and exit locations used by the remediation / cleaning personnel should be thoroughly or meticulously cleaned with a high efficiency vacuum cleaner with a HEPA filter and a damp cloth and vinegar solution.

7.7 BUILDING CLASS 7

HVAC Systems

This section is in review and will be available soon. In principle the remediation should be performed according to the amount of fungal contamination as described in Building Grades 1 through 6. Extra PPE requirements may be required if workers are to be working in confined spaces.

7.8 BUILDING CLASS 7 - CLEAN ROOM

This classification is for absolute sterilised clean room environments such as those used in pharmaceuticals and computer component manufacture. Only highly qualified and experienced Engineers and IAQ experts should only be consulted in these situations.

Protocols for handling Building Grade 4 Remediation work should be followed.

8 PPE CLASSIFICATION SYSTEM

This classification system details the personal protection equipment (PPE) required to minimise exposure to fungal spores and/or fungal gaseous by-products during inspections and remediation works.

The person performing an inspection or in charge of remediation works should use their judgment and increase their level of PPE to suit the conditions at hand.

8.1 PPE LEVEL 1

This level of PPE is intended for initial inspections or sampling regimes in Grade 1 buildings where there is no visible mould growth; health complaints; mould odours; cross contamination; or any known or obvious moisture damage. A breathing mask should not be required. No protective clothing should be required.

8.2 PPE LEVEL 2

This level of PPE is intended for initial inspections or sampling regimes where mould growth is suspected due to known water damage or limited visible growth. There should be no serious health complaints related to mould or time spent in the building. A minimum of a half face respirator mask with disposable HEPA filters is recommended for extended periods. Where there are strong or obnoxious odours, then an activated carbon or organic vapour filter should be used in addition to the HEPA filter. No protective clothing such as overalls should be required. Breathing mask and gloves should be taken off outdoors.

8.3 PPE LEVEL 3

This level of PPE is for small fungal contamination that relates to Building Grade 3 mould damage. The objective of this level of PPE is to limit exposure to fungal spores and gaseous by-products. A half face respirator mask with HEPA filters and splash goggles should be worn at all times. Where there are strong or obnoxious odours, then a full face mask should be used with an activated carbon or organic vapour filter in addition to the HEPA

filter. PPE should include disposable overalls and gloves.

8.4 PPE LEVEL 4

This level of PPE is for a maximum of 2 hour exposure to large area of fungal contamination that relates to Building Grade 4 mould damage. This level of PPE should eliminate exposure to fungal spores and gaseous by-products. PPE should include disposable overalls, gloves and shoe protectors. All joins at ankles and wrists where gloves and shoe protectors meet the disposable overalls should be sealed with tape. Full face respirator mask with HEPA filtration with an activated carbon or organic vapour filter should be used at all times.

9 GLOSSARY

µg	micrograms
µm	micrometers or microns
µg/m³	micrograms per cubic metre
AC	air conditioner
agar	an extract of the cell walls of certain red algae that produces a jelly when dissolved in hot water
AIHA	American Industrial Hygiene Association
ASHRAE	American Society Of Heating Refrigerating And Air-conditioning Engineers
a_w	water activity
Bulk Sample	taking a material samples from a surface either by scraping a hard surface or by vacuuming carpets or textiles
CBS	Centraalbureau voor Schimmelcultures
CFU	colony forming unit
CFU/m²	colony forming units per square metre
CFU/m³	colony forming units per cubic metre
chlamydospore	resting spores that are formed from parts of vegetative hyphae
CIH	Certified Industrial Hygienist
cm	centimetre
CO²	carbon dioxide
colony	a consistent mycelium (mould) or a mass of cells (yeasts) that are of one origin
conidia	An exclusive form of reproduction only found in fungi that is not produced by cytoplasmic cleavage or free cell formation, commonly referred to as spores.
contamination	fungal growth that is considered detrimental to materials or human health
CzD	Czapek-Dox agar
DG 18	dichloran-18% glycerol agar, often misquoted as a xerophilic agar
DNA	deoxyribonucleic acid
DRBC	dichloran rose Bengal chloramphenicol agar

Fungi	any microorganisms belonging to the Kingdom Fungi including mould and yeast, commonly referred to as mould, though mould only refers to mycelial growing fungi
g	grams
Genera	part of the taxonomic description of a group of fungi
HEPA	High Efficiency Particulate Filtration: 99% efficiency of particles larger than 0.3 microns
HEPA vacuum	A high efficiency vacuum cleaner with a HEPA filter, check that the HEPA filter holder is well designed sealed and does not allow bypass.
Hg	mercury
HVAC	heating ventilation and air conditioning system
hyphae	a part of filamentous growing fungi that is able to elongate
IA	indoor air
IAP	Indoor air pollution
IAQ	indoor air quality
IAQ Assessor	An air quality or indoor environmental professional with training and extensive experience with indoor air quality (IAQ), sick building syndrome (SBS) and building related illness (BRI), may include and IAQ consultant, Industrial Hygienist, Occupational hygienist, or similar.
IEA	indoor environmental assessment
IEQ	indoor environment Quality
IICRC	Institute Of Inspection Cleaning And Remediation Certification
MEA	malt extract agar
MEA+40	malt extract agar + 40% Sucrose, a true xerophilic agar
mg	milligram
MLA	Mycologia Australia Pty Ltd
mm	millimetre
Mould	Common description of visible fungal colonies with mycelial growth form
Mould Inspector	A qualified Mycologist with special training or experience in diagnosing building related mould problems.
MSDS	manufacturer safety data sheet

MVOC	microbial volatile organic compound	substrate	the space in which a fungus grows and the material filling this space that provides nutrients for the fungus
mycelia	a single fungal hyphae		
mycelium	a mat of many individual hyphae woven together, often visible	Surface Swab	Usually a sterile cotton tip swab dipped in sterile water and rubbed on a surface to pick up fungal spores and then transferred them to a nutrient agar.
Mycologist	A person who works with fungi, similar to a microbiologist (who work mainly with bacteria)		
Mycology	The study of fungi	Taxa	A term used in the systematic categorisation of fungal genera and species.
mycotoxin	A secondary metabolite produced by fungi as a normal part of respiration.	TSP	total suspended particulates
n	sample number	UV	ultra violet
NIOSH	National Institute Of Occupation Safety And Health	VC	vacuum cleaner
nutrient media	an agar with nutrients added to promote fungal growth and sporulation	vegetative state	mycelium that have no reproductive structures
NYC DOHMH	New York City Department of Health and Mental Hygiene	VOC	volatile organic compound
OA	outdoor air	WME	Wood Moisture Equivalent
°C	degrees Celsius	Yeast	Fungi that produce distinct cells and that reproduce by budding or dividing cells
PCR	polymerase chain reaction		
PM₁₀	particulate matter with an effective aerodynamic diameter of 10 microns or smaller	μ	micro
PPE	personal protective equipment	μm	micrometre
ppm	parts per million		
RH	relative humidity		
RODAC	A type of surface sampling where a modified agar plate is overfilled with nutrient agar so that the agar is sits proud and can be contacted with a surface and fungal spores.		
RSP	respirable particulate matter		
SBS	sick building syndrome		
SNA	synthetic low-nutrient agar		
sp.	Several species belonging to that genus.		
spec.	A single fungal species was differentiated but not identified.		
Species	the specific taxonomic description of a fungus		
Spore	A general term referring to all fungal reproductive structures including the spores from sexual reproduction and conidia from asexual reproduction and resting sclerota.		
sporulation	the process where a fungus produces spores or conidia		
sterile mycelia	A fungal colony containing fungi growing in a vegetative state.		

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Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements

Scope of Works

Revision History

Revision	Description	Date	Prepared by
B	Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements - Scope of Works	16 September 2020	GW
	Changes from Revision A will be highlighted green		

Table of Contents

1.	SCOPE OF WORK – SUMMARY	3
2.	PRELIMINARIES & GENERAL REQUIREMENTS APPLICABLE	4
3.	SITE	5
4.	ENVIRONMENTAL FACTORS	9
5.	HOLD & WITNESS POINTS	9
6.	SCOPE OF WORK - DETAIL	10
	6.1. HAZARDOUS MATERIAL.....	10
	6.2. DIAL BEFORE YOU DIG & SERVICE LOCATION	10
	6.3. DETAILED SCOPE OF WORKS.....	11
	6.4. ON COMPLETION	15
7.	ALLOWANCES	15
8.	CODES & STANDARDS	15
9.	KEY DATES	15
10.	SPECIFICATIONS, DRAWINGS, SPECIALIST REPORTS AND OTHER DOCUMENTATION	16

1. SCOPE OF WORK – SUMMARY

Wollongong City Council is seeking to engage an appropriate contractor to perform the “Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements” Works as indicated in this document and attached documentation.

The site is located at Helensburgh Community Hall – Walker Street, Helensburgh

2. PRELIMINARIES & GENERAL REQUIREMENTS APPLICABLE

The Contractor shall make allowance for all items as outlined:

- a) Mobilisation
- b) Site Entry
- c) Movement on Site
- d) Meal Breaks
- e) Site Exit
- f) Demobilisation
- g) Safety
- h) Environment
- i) Quality
- j) Industrial Relations
- k) Programme
- l) Reporting
- m) Meetings
- n) Document Management and Contractor Submittals
- o) Progress, Progress Claims and Payment
- p) Communication Protocol
- q) Shipping and Transportation
- r) Reference Documents

3. SITE

This works area is in the vicinity of Keira Street Compound and care should be taken to preserve the area. Appropriate safety measures must always be implemented to ensure the safety of all workers and members of the public. The site may be exposed to wind, sun, rain etc. These factors must be applied where relevant:

- **Interpretation of Drawings**
Check dimensions on site before proceeding with the work of the contract. Notify WCC representative of any omission or conflict in drawings and their relation to specifications and seek an instruction before proceeding.
- **Inclement weather**
Allowances and contingencies shall be made for inclement weather
- **Documentation**
Site Management Plan must be completed before handover of site. These will require review by WCC representative
- **Site Control**
 - Contractor to be responsible for activities on the site including providing access for authorised persons and restricting access by unauthorised persons. Take necessary precautions to secure the assets/plant.
 - Delivery of materials for the works, space for storage of same and for building sheds, office and workshops will be allowed only as directed by the Builder in consultation with WCC representative where deemed appropriate.
 - Do not store waste building materials and flammable liquids in the building.
 - Take proper precautions to keep poisons and other injurious substances in places secured against access by unauthorised persons.
 - For the duration of the works, ensure the site is isolated from the public and staff by means of a physical barrier and/or lock out with WH&S & works notification signage prominently displayed prior to commencement of work.
 -
- **Plant and Equipment**
Whenever working with plant or machinery, etc. is required, ensure all items meet the requirements of the relevant statutory authority. Ensure safe and secure storage of all plant and equipment. All operatives to be appropriately trained in the utilisation of site plant and equipment.
- **Site Amenities**
The contractor is permitted to use the existing site amenities, to be always kept clean and tidy.

- **Temporary Fire Extinguishers**

Maintain fully charged, and accessible fire extinguishers as are necessary for the care and safety of the Works, as required by local Fire Authority.

- **Light and Power**

Where suitable is not available, provide temporary electric light and power supply during construction. Provide sufficient of each as required for execution of work specified.

- **Project Identification Sign**

Supply and erect all signage as required by Regulatory Authorities. This signage shall remain the property of the Builder. Remove same upon completion of the works.

- **Adjacent Premises**

Ensure that the work is carried out without damage to and with a minimum of nuisance or annoyance to the occupants of adjacent premises.

- **General Attendance on Subcontractors**

General attendance shall include taking delivery, assisting to unload, storing and protecting Sub-Contractor's materials and for allowing Sub-Contractors ample working space, free use of water, electricity (unless otherwise described), scaffolding, hoists and ordinary plant, etc., and messing and sanitary accommodation.

- **Precautions in Carrying Out Work**

Unless otherwise specified, observe, in the absence of statutory requirement to the contrary, the relevant current Australian Standards published by Standards Australia relating to storage, transport, use of materials, plant and equipment, hazardous materials removal, work processes and safety precautions. All work to occur with reference to Work Health and Safety Act 2011, AS4801 and AS ISO 9001 and all applicable WHS regulations and standards. Principal contractor (Builder) is responsible for the co-ordination, management and quality assurance of sub-contractors. All sub-contractors to be fully certified and insured and operate within the constraints of the Principal Contractor's WHS plan.

- **Damaged Services**

Where existing services at or adjacent to the site are in non-optimum condition, arrange for an inspection by the WCC representative and the Officer-in-charge of the area responsible for such service. At such meeting, record the condition and follow instructions when issued.

- **Disposal of Refuse**

Refuse from construction operation (including food scraps and the like) shall be removed from the site at frequent intervals and disposal & in accordance with Local Authority Requirements. No rubbish/waste/debris shall be stockpiled or left on site unless approved by WCC representative. If approved, any such storage must be confined within appropriate site fencing/exclusion zone

- **Explosive Devices**

Powder powered fixing tools shall not be used.

- **Care of the Works**

- Delivery, Handling and Storage: Deliver, handle and store products in accordance with manufacturer's recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Control delivery schedules to minimise long-term storage of products at site and overcrowding of construction spaces. In particular, co-ordinate delivery and/or installation to ensure minimum holding or storage times for products recognised to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
- Limiting Exposure of Work: To the extent possible, through control and protection methods, supervise performance of work in a manner which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, or damaging exposures during construction period.
- Contractor to be aware of the presence of potentially hazardous chemicals stored within this facility. Authorised & trained facility staff to instruct contractor in protocol for working within these areas. SWMMS to detail these requirements

- **General Product Compliance**

- Provide products which comply with requirements, and which are undamaged and unused at time of installation, and which are complete with accessories, trim, finish and features required by regulation, and other devices and details needed for a complete installation and for intended use and effect.
- Standard Products: where available, provide standard products of types which have been produced and used previously and successfully on other projects and in similar applications.
- Continued Availability: where additional amounts of a product, by its application, are likely to be needed by WCC at a later date for maintenance

and repair or replacement work, provide a standard, which is likely to be available at such later date.

- Manufacturer's recommendations: where installations include manufactured products, comply with manufacturer's current and applicable recommendations for installation.
 - At completion of project, provide to the WCC representative a copy of each set of Manufacturer's recommendations which have been used in the work of each trade.
 - Manufacturer's Data Sheets: where this specification requires, obtain copies of the current data sheets issued by the manufacturer of specified component.
- **Builder's Quality Control**
 - Inspect each item of materials or equipment immediately prior to installation and reject damaged or defective items.
 - Re-check measurements and dimensions of the work as an integral step before starting each installation.
 - Install work during conditions of temperature, humidity, exposure and weather which will ensure the best possible results for each part of the work, or component or treatment as necessary to prevent damage and deterioration.
 - Co-ordinate enclosure and closing-in of work with required inspections and tests, to avoid necessity of uncovering work for that purpose.
 - **Occupational (Workplace) Health & Safety**
 - Contractor to be responsible for the maintenance of a satisfactory safety system on site. Provide evidence to the WCC representative of full compliance with the provisions of the relevant state Health and Safety Act. It is the responsibility of the contractor and subcontractors to use the safety equipment as required by law.
 - **Clean Site and Access Roads**
 - Contractor to be responsible for maintaining clean roads and access. Remove and clean away mud, building debris from footpaths, gutters, drains, walls etc. when such occurs.
 - Public safety (including pedestrian and vehicular traffic) around the site must always be ensured and appropriate barricades provided where there is a risk of an incident with the public/workers due to falls or site works. Contractor responsible for the containment of sediment within site using appropriate sediment control barriers and systems.

- **Handover Documents at Practical Completion**

At Practical Completion the contractor shall hand over all documents as requested by WCC representative. The contractor shall check the specification and all attached documentation under each specific section for any other required submissions.

- **Product Selection**

All products utilised shall be selected with consideration to the local environmental conditions.

4. ENVIRONMENTAL FACTORS

The following environmental safeguards must be implemented and met:

- ALL waste must be collected and disposed of in accordance with the relevant legislation.
- Should ANY archaeological site, object or artefact of Aboriginal and/or European Heritage be uncovered/unearthed during any works or activities, work must cease in the vicinity of the discovery. The Superintendent must be notified of such a discovery.
- If the Scope of Work or Work Methods change after initial endorsement, this must be reviewed/endorsed by a WCC Officer.
- The proposed work hours are between 7:00 AM and 5.00 PM Monday to Fridays and between 8.00 AM and 1.00 PM on Saturdays. No works Sundays or Public Holidays.
- Any proposed works outside these hours in consultation with WCC co-ordinator

5. HOLD & WITNESS POINTS

The contractor shall provide to the WCC representative a minimum of 2 working days notice for any inspection and 10 days for any reviews of alternative designs.

GENERAL AND PROJECT START UP

Review & release of Site Management. HP

LAYOUT

Review & release of marked out location of any excavation. HP

WASTE REMOVAL

Submission of Disposal Dockets. WP

PROGRAM

Review & approval of Works Program. WP

HAZARDOUS MATERIALS

Upon discovery of previously unreported hazardous materials. WP

SURVEY AND SET OUT

Complete check measure and set out of water service. HP

6. SCOPE OF WORK - DETAIL

6.1. HAZARDOUS MATERIAL

- Should any material not previously identified as hazardous be uncovered and be suspected of containing hazardous materials, the contractor is to cease all works until positive identification can be established.

6.2. DIAL BEFORE YOU DIG & SERVICE LOCATION

- Contractor to submit DBYD request, follow up on requests and schedule required meetings the representatives of service suppliers as required
 - Allowance to be made for all inspections/approvals with service providers
- Contractor to allow for service location of key assets within the works area

6.3. DETAILED SCOPE OF WORKS

Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements

Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements

The contractor must complete the floor structure replacement, subfloor drainage and subfloor ventilation improvements as per:

- Drawing Set - “Helensburgh Community Centre TR-671 – SK01, SK02, SK03, SK04, SK05 and SK06 – Revision 1”.
- Specification and Scope of Works - “Wollongong City Council – Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements Specification/Scope of Works, dated 11/06/2020”.
- Confined Spaces – The sub floor area of the works will require accredited confined spaces personnel and compliance to Safe Work NSW.
- Hyperlink - <https://www.safework.nsw.gov.au/hazards-a-z/confined-spaces>
- The existing flooring is Tallowwood. New flooring must be Tallowwood.
- The area of flooring replacement has been extended from 7.500 metres east/west to 10.000 metres east/west and north/south as is at 18.000 metres, this will cover all the affected area at approximately 180.000 square metres. The new flooring must be toothed in.
- The first preference is to match existing flooring; however, contractors can provide an alternative for WCC approval as a non-confirming quotation. Please provide exact details of an alternative for WCC consideration.
- The supply and installation of the new flooring must comply with the Australian Standard for indoor ball sports.
- The lines for the basketball will need to be replaced in the flooring replacement area and must comply with the Australian Standard for indoor ball sports.
- The entire timber floor area (and timber skirting) must be sanded, prepared and coated in Tung Oil & Gemini coating for protection and must comply with the Australian Standard for indoor ball sports.
- Floor vents – a question has been answered on the Vendor Panel forum – please read the question and answer.
- Contractor must notify WCC within quotation submission of any supply and/or fabrication restraints or delays, give details.
- Contractor to price total works.

Please provide a quotation for; Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements

- A site inspection meeting will be held at 1000am Monday 14 September 2020.
- The site is located at Helensburgh Community Hall – Walker Street, Helensburgh.
- All work must be completed Monday 26 October to 20 November 2020.
- All questions or queries via Vendor Panel Forum.
- All quotations to be submitted via Vendor Panel.
- Contractor must notify WCC within quotation submission of any supply and/or fabrication restraints or delays, give details.
- Please fill in price schedule.

SCHEDULE A

LUMP SUM QUOTATION PRICE SCHEDULE

This schedule should be completed in conjunction with the plans and notes.

ITEM	DETAILS	QTY	UNIT	RATE	AMOUNT
GENERAL REQUIREMENTS					
1	Preliminaries				
1a	Preliminaries including but not limited to; safety documentation, safety requirements and site set up.				\$
PROJECT-SPECIFIC REQUIREMENTS					
2	Outstanding Works				
2a	The contractor must complete the floor structure replacement, subfloor drainage and subfloor ventilation improvements as per: - Drawing Set - "Helensburgh Community Centre TR-671 – SK01, SK02, SK03, SK04, SK05 and SK06 – Revision 1". - Specification and Scope of Works - "Wollongong City Council – Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements Specification/Scope of Works, dated 11/06/2020".				

ITEM	DETAILS	QTY	UNIT	RATE	AMOUNT
	- Confined Spaces – The sub floor area of the works will require accredited confined spaces personnel and compliance to Safe Work NSW. - Hyperlink - https://www.safework.nsw.gov.au/hazards-a-z/confined-spaces - The existing flooring is Tallowwood. New flooring must be Tallowwood. - The area of flooring replacement has been extended from 7.500 metres east/west to 10.000 metres east/west and north/south as is at 18.000 metres, this will cover all the affected area at approximately 180.000 square metres. The new flooring must be toothed in. - The first preference is to match existing flooring; however, contractors can provide an alternative for WCC approval as a non-confirming quotation. Please provide exact details of an alternative for WCC consideration. - The supply and installation of the new flooring must comply with the Australian Standard for indoor ball sports. - The lines for the basketball will need to be replaced in the flooring replacement area and must comply with the Australian Standard for indoor ball sports. - The entire timber floor area (and timber skirting) must be sanded, prepared and coated in Tung Oil & Gemini coating for protection and must comply with the Australian Standard for indoor ball sports.				

ITEM	DETAILS	QTY	UNIT	RATE	AMOUNT
	- Floor vents – a question has been answered on the Vendor Panel forum – please read the question and answer. - Contractor must notify WCC within quotation submission of any supply and/or fabrication restraints or delays, give details. - Contractor to price total works.				
SUB-TOTAL (ex GST)					\$
GST					\$
TOTAL LUMP SUM PRICE (inc GST)					\$

6.4. ON COMPLETION

- Allowance to remediate all disturbed surfaces, make good
- Allow to provide As Built drawing and certification on completion as required

7. ALLOWANCES

8. CODES & STANDARDS

Works to occur with reference and compliance to all applicable Australian Codes & Standards

9. KEY DATES

The Contractor shall incorporate the following into their programme, these dates are critical to the project's success and shall be followed. A program of reduced duration would be acceptable as considered feasible.

<u>Description</u>	<u>Start Date</u>	<u>End Date</u>
Works commencement and completion	Monday 26 October 2020	Friday 20 November 2020

10. SPECIFICATIONS, DRAWINGS, SPECIALIST REPORTS AND OTHER DOCUMENTATION

The following table outlines the specifications, drawings, specialist reports and other documentation applicable to the works. The Contractor shall fully inform themselves of and make allowance for the requirements therein:

<u>Document Type</u>	<u>Document Sub-type</u>	<u>Document Number</u>	<u>Document Name</u>
Attachment 6 pages		TR-671 – SK01, SK02, SK03, SK04, SK05 and SK06 – Revision 1	Drawing Set “Helensburgh Community Centre TR-671 – SK01, SK02, SK03, SK04, SK05 and SK06 – Revision 1”.
Attachment 20 Pages		Project No: TR-671	“Wollongong City Council – Helensburgh Community Hall – floor structure replacement, subfloor drainage and subfloor ventilation improvements Specification/Scope of Works dated 11/06/2020”.

WOLLONGONG CITY COUNCIL

Helensburgh Community Hall

Floor structure replacement, subfloor drainage and subfloor ventilation improvements Specification/scope of works

11/06/2020

Project No: TR-671

Revision	Description	Date	Prepared by
1	For Review	11/06/2020	N. Idziak / A. McGill

Contents

1. Subfloor Ventilation	3
2. Timber floor replacement	3
3. Subfloor Drainage	4
4. General.....	4
4.1. Preliminaries & General Requirements	4
4.2. Site Establishment.....	5
4.3. Inclement weather	6
4.4. Documentation	6
4.5. Site Control	6
4.6. Plant and Equipment.....	6
4.7. Temporary Fire Extinguishers	7
4.8. Light and Power	7
4.9. Project Identification Sign	7
4.10. Adjacent Premises.....	7
4.11. General Attendance on Subcontractors	7
4.12. Precautions in Carrying Out Work	7
4.13. Joining into Structures	8
4.14. Damaged Services	8
4.15. Explosive Devices	8
4.16. Care of the Works	8
4.17. General Product Compliance	8
4.18. Builder's Quality Control	9
4.19. Occupational (Workplace) Health & Safety	9
4.20. Clean Site and Access Roads	10
4.21. Site Demobilisation	10
4.22. Handover Documents at Practical Completion.....	10
5. Attachments.....	10

1. Specification/Scope of Works

1.1. Subfloor Ventilation

- Refer SK01, SK02 and SK03
- Install extraction fans to the top of the existing 5 PVC ventilation pipes along western elevation, existing sewer vent pipes to remain unchanged
- Electrical fans to be powered by existing building 240v supply. Install electrical wiring and conduits as required, waterproof all conduit penetrations.
- Fan operations controlled by humidity sensor to be installed in subfloor space, fans shall be set to operate above 60% relative humidity measured in subfloor space. Fail default to run.
- Fans to be installed with wall mounted speed controllers for commissioning and operations. Controllers to be installed in a locked enclosure in the existing northern store room
- Fans to be operated at maximum possible flow, limited by any major acoustic impacts on hall space
- Replace existing whirly birds with cowls on the 6 ventilation pipes along southern elevation. Cowl colour to match existing pipes.
- Replace external solid door in north east corner of storeroom under stage with a full height louvered door to provide makeup air to subfloor space. Louvered door size to match existing, have min 40% free area, provide security to building, door locks to match existing, door to be powder coated steel, colour to match existing.
- Existing grilles leading from western storeroom under stage to subfloor space to be kept clear at all times, signage to be erected at each grille, 5 off. Signage to read "Stored equipment to be kept clear of ventilation grilles at all times"
- Existing floor ventilation grilles around the perimeter of the hall floor to be closed off to prevent airflow between subfloor space and hall

1.2. Timber floor replacement

- Refer SK05 for extent
- Required within 7.5m of western wall, full width of the hall. Area = 140m2 approx
- Remove and dispose of all timber bearers, joists and flooring within this area
- Replace bearers with 150x75 F17 hardwood timber bearers @ 1800 max cts
- Replace joists with 100x50 F17 hardwood timber joists @ 450 max cts

- Replacement of timber flooring: size, dimensions, species and finish to match existing. 38mm wide tongue and groove
- Ensure smooth transition between new and existing flooring
- Make good all skirting boards and affected trims, replace as required

1.3. Subfloor Drainage

- Refer SK04 mark up
- Install new subfloor agg line along western wall and along eastern wall.
- New agg line to drain to existing agg line
- Existing subfloor agg line adjacent to western store room under stage (eastern side of subfloor space) to be replaced with new agg line
- Existing pit and stormwater pipe leading from pit in south east corner of subfloor space to be cleaned of all loose debris to ensure it is functioning adequately and drains freely

2. General

2.1. Preliminaries & General Requirements

The Contractor shall make allowance for all items as outlined:

- Mobilisation
- Site Entry
- Movement on Site
- Meal Breaks
- Site Exit
- Demobilisation
- Safety
- Environment
- Quality
- Industrial Relations
- Programme
- Reporting
- Meetings

- Waste management
- Document Management and Contractor Submittals
- Progress, Progress Claims and Payment
- Communication Protocol
- Shipping and Transportation
- Reference Documents

Contractor is to fully familiarise themselves with issued notations and documentation that form this package of documentation.

Notwithstanding the requirements of this specification and the drawings, the building works shall be in accordance with the Building Code of Australia and all applicable codes and standards.

The contractor shall also be deemed to have inspected the site carefully and have noted anything likely to affect the performance of the contract which such an inspection should reasonably disclose.

The contractor must ensure all materials used, including any proposed reuse of existing items, are suitable for use in the environment. Any item proposed for reuse with uncertain suitability shall be presented to WCC representative for confirmation.

The contractor must ensure adequate separation of dissimilar materials to prevent potential for galvanic reaction.

Make allowances to complete the work without additional cost or variations. The contractor shall be deemed to have allowed for all costs which may be incurred in completing the works by the time stated in the contract, including permitted hours of work, overtime, bonuses and incentive payments, site allowances, taxes and any other charges.

2.2. Site Establishment

The Contractor shall:

- Obtain all the necessary authority approvals and work permits prior to commencing work.
- Undertake all required risk assessments, site investigations, site safety reviews, and meetings.
- Ensure all employees have Workcover approved WH&S induction training for construction work. Safe work method statements are required. Refer conditions of contract.
- Site-establish all required labour, plant and equipment. This shall include scaffolding and/or boom lifts and elevated work platforms as deemed necessary.

- Establish all barricading and signage requirements (including project signage) prior to commencing work.
- Supply and install security fencing on nominated boundaries including appropriate access gates. during construction. Rope barricades are not permitted as the primary barricade.
- Provide Site Management plan.
- Provide Construction Environment Management plan and implement.
- Provide traffic control plan and implement.

2.3. Inclement weather

Allowances and contingencies shall be made for inclement weather

2.4. Documentation

Project Management Plans, Safety Management Plan and Program of Works must be completed before handover of site. These will require review by WCC representative

2.5. Site Control

- Contractor to be responsible for activities on the site including providing access for authorised persons and restricting access by unauthorised persons. Take necessary precautions to secure the assets/plant.
- Delivery of materials for the works, space for storage of same and for sheds and offices will be allowed only as directed by the builder in consultation with WCC representative where deemed appropriate.
- Take proper precautions to keep poisons, flammable and other injurious substances in places secured against access by unauthorised persons.
- The contractor must protect all drains, contain all materials and control runoff within the site for the duration of the work.
- The existing structure and site shall be protected from damage during the project. No part shall be overstressed during the works.

2.6. Plant and Equipment

Whenever working with plant or machinery, etc. is required, ensure all items meet the requirements of the relevant statutory authority. Ensure safe and secure storage of all plant and equipment. All operatives to be appropriately trained in the utilisation of site plant and equipment.

2.7. Temporary Fire Extinguishers

Maintain fully charged, and accessible fire extinguishers as are necessary for the care and safety of the Works, as required by local Fire Authority.

2.8. Light and Power

Where suitable lighting and power is not available, provide temporary electric light and power supply during construction. Provide sufficient amounts of each as required for the execution of work specified.

2.9. Project Identification Sign

Supply and erect all signage as required by Regulatory Authorities. This signage shall remain the property of the Builder. Remove same upon completion of the works.

2.10. Adjacent Premises

Ensure that the work is carried out without damage to and with a minimum of nuisance or annoyance to the occupants of adjacent premises.

2.11. General Attendance on Subcontractors

General attendance shall include taking delivery, assisting to unload, storing and protecting Sub-Contractor's materials and for allowing Sub-Contractors ample working space, free use of water, electricity (unless otherwise described), scaffolding, hoists and ordinary plant, etc., and messing and sanitary accommodation.

2.12. Precautions in Carrying Out Work

Unless otherwise specified, observe, in the absence of statutory requirement to the contrary, the relevant current Australian Standards published by Standards Australia relating to storage, transport, use of materials, plant and equipment, hazardous materials removal, work processes and safety precautions. All work to occur with reference to Work Health and Safety Act 2011, AS4801 and AS ISO 9001 and all applicable WHS regulations and standards. Principal contractor (Builder) is responsible for the co-ordination, management and quality assurance of sub-contractors. All sub contractors to be fully certified and insured and operate within the constraints of the Principal Contractors WHS plan.

2.13. Joining into Structures

Where the method of joining up of old and new work is not otherwise specified on the construction documents, the cutting away and joining shall be carried out in a manner approved by the WCC representative and made good by relevant trades to match existing adjacent work.

2.14. Damaged Services

Where existing services at or adjacent to the site are in non-optimum condition, arrange for an inspection by the WCC representative and the Officer-in-charge of the area responsible for such service. At such meeting, record the condition and follow instructions when issued.

2.15. Explosive Devices

Powder powered fixing tools shall not be used.

2.16. Care of the Works

- **Delivery, Handling and Storage:** Deliver, handle and store products in accordance with manufacturer's recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Control delivery schedules to minimise long-term storage of products at site and overcrowding of construction spaces. In particular, co-ordinate delivery and/or installation to ensure minimum holding or storage times for products recognised to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
- **Limiting Exposure of Work:** To the extent possible, through control and protection methods, supervise performance of work in a manner which will ensure that none of the work, whether completed or in progress, will be subjected to harmful, dangerous, or damaging exposures during construction period.
- **Cleaning and Protection of Finished Work :** during handling and installation of work as project proceeds, clean site and protect work in progress. Apply suitable protective covering on newly installed work where required to ensure freedom from damage or deterioration at a time of Practical Completion, otherwise, clean and perform maintenance on newly installed work as frequently as necessary throughout remainder of construction period. Adjust and lubricate operable components to ensure equipment operates as intended.

2.17. General Product Compliance

- Provide products which comply with requirements, and which are undamaged and unused – unless noted otherwise, at time of installation, and which are complete with accessories, trim, finish and

features required by regulation, and other devices and details needed for a complete installation and for intended use and effect.

- **Standard Products:** where available, provide standard products of types which have been produced and used previously and successfully on other projects and in similar applications.
- **Continued Availability:** where additional amounts of a product, by its application, are likely to be needed by WCC at a later date for maintenance and repair or replacement work, provide a standard, which is likely to be available at such later date.
- **Manufacturer's recommendations:** where installations include manufactured products, comply with manufacturer's current and applicable recommendations for installation.
- **At completion of project,** provide to the WCC representative a copy of each set of Manufacturer's recommendations which have been used in the work of each trade.
- **Manufacturer's Data Sheets:** where this specification requires, obtain copies of the current data sheets issued by the manufacturer of specified component.

2.18. Builder's Quality Control

- Inspect each item of materials or equipment immediately prior to installation and reject damaged or defective items.
- Provide attachment and connection devices and methods for securing materials properly as they are installed, true to line and level, and within recognised industry tolerances unless otherwise indicated. Allow for expansion and building movements. Provide uniform joint widths in exposed Work, organised for best possible visual effect. Refer questionable visual effect choices to the WCC representative.
- Re-check measurements and dimensions of the work as an integral step before starting each installation.
- Install work during conditions of temperature, humidity, exposure and weather which will ensure the best possible results for each part of the work, or component or treatment as necessary to prevent damage and deterioration.
- Co-ordinate enclosure and closing-in of work with required inspections and tests, so as to avoid necessity of uncovering work for that purpose.

2.19. Occupational (Workplace) Health & Safety

- The contractor must provide to WCC a site specific risk assessment, SWMS and all permits prior to commencement of work.
- Contractor to be responsible for the maintenance of a satisfactory safety system on site. Provide evidence to the WCC representative of full compliance with the provisions of the relevant state

Health and Safety Act. It is the responsibility of the contractor and subcontractors to use the safety equipment as required by law.

- Contractor to provide all WHS documentation for review showing evidence of compliance with WCC pre commencement site safety documentation requirements.

2.20. Clean Site and Access Roads

- Contractor to be responsible for maintaining clean roads and access. Remove and clean away mud, building debris from footpaths, gutters, drains, walls etc. when such occurs.
- Public safety (including pedestrian and vehicular traffic) around the site must be ensured at all times and appropriate barricades provided where there is a risk of an incident with the public/workers due to falls or site works.

2.21. Site Demobilisation

The Contractor shall:

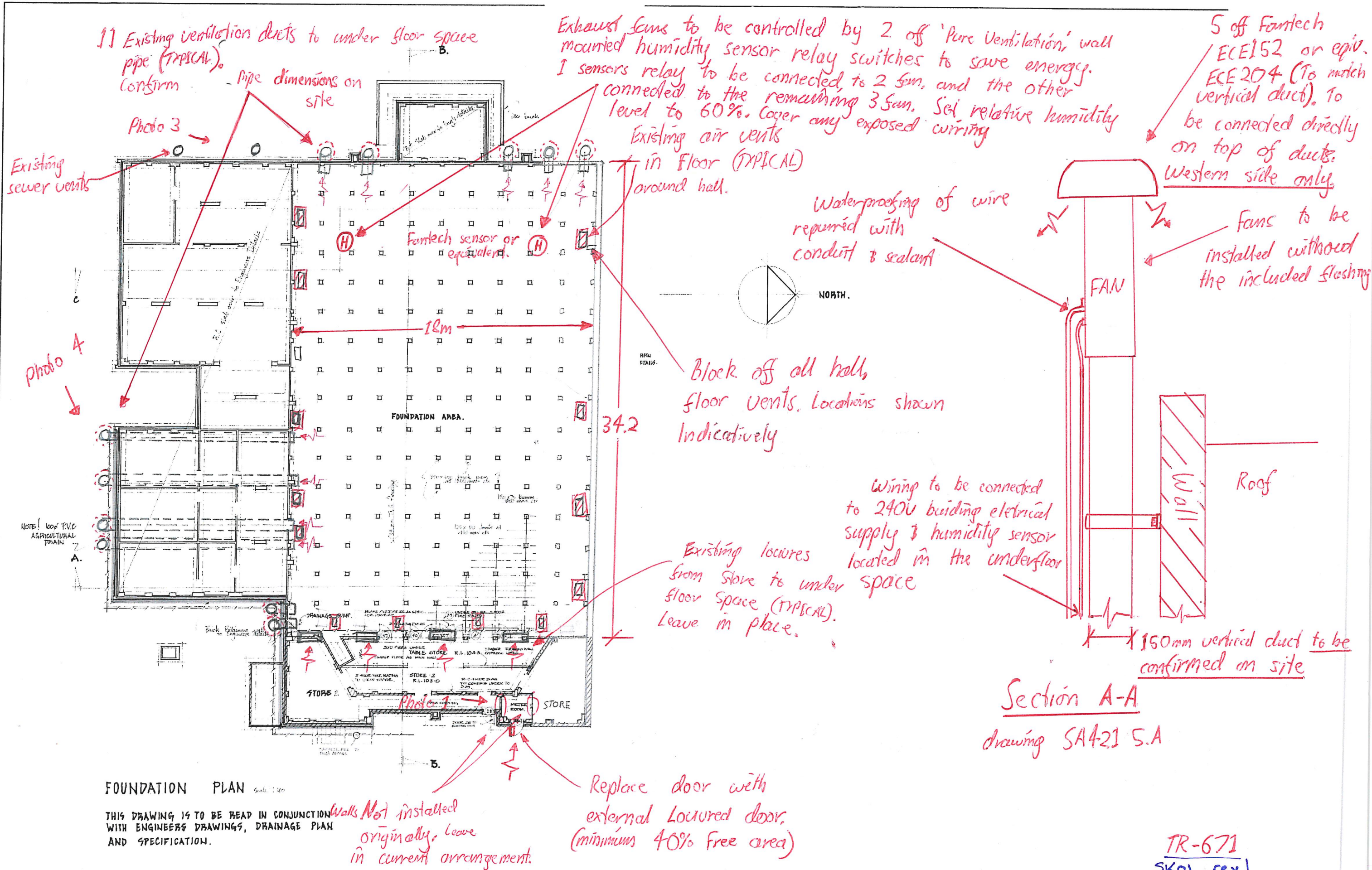
- Clean up the site ensuring any construction waste has been disposed of from site and the site is suitable cleaned ready for public use.
- Repair any damage caused to existing infrastructure.
- Remove all barricading and signage prior to demobilising
- De-mobilise all plant, tools and equipment from site

2.22. Handover Documents at Practical Completion

At Practical Completion the contractor shall hand over all documents as noted in this Specification and as requested by WCC representative. The contractor shall check the specification and all attached documentation under each specific section for any other required submissions.

3. Attachments

- SK01, SK02, SK03, SK04, SK05, SK06
- Photo 1, Photo 2, Photo 3, Photo 4



FOUNDATION PLAN Scale: 1:500

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENGINEERS DRAWINGS, DRAINAGE PLAN AND SPECIFICATION.

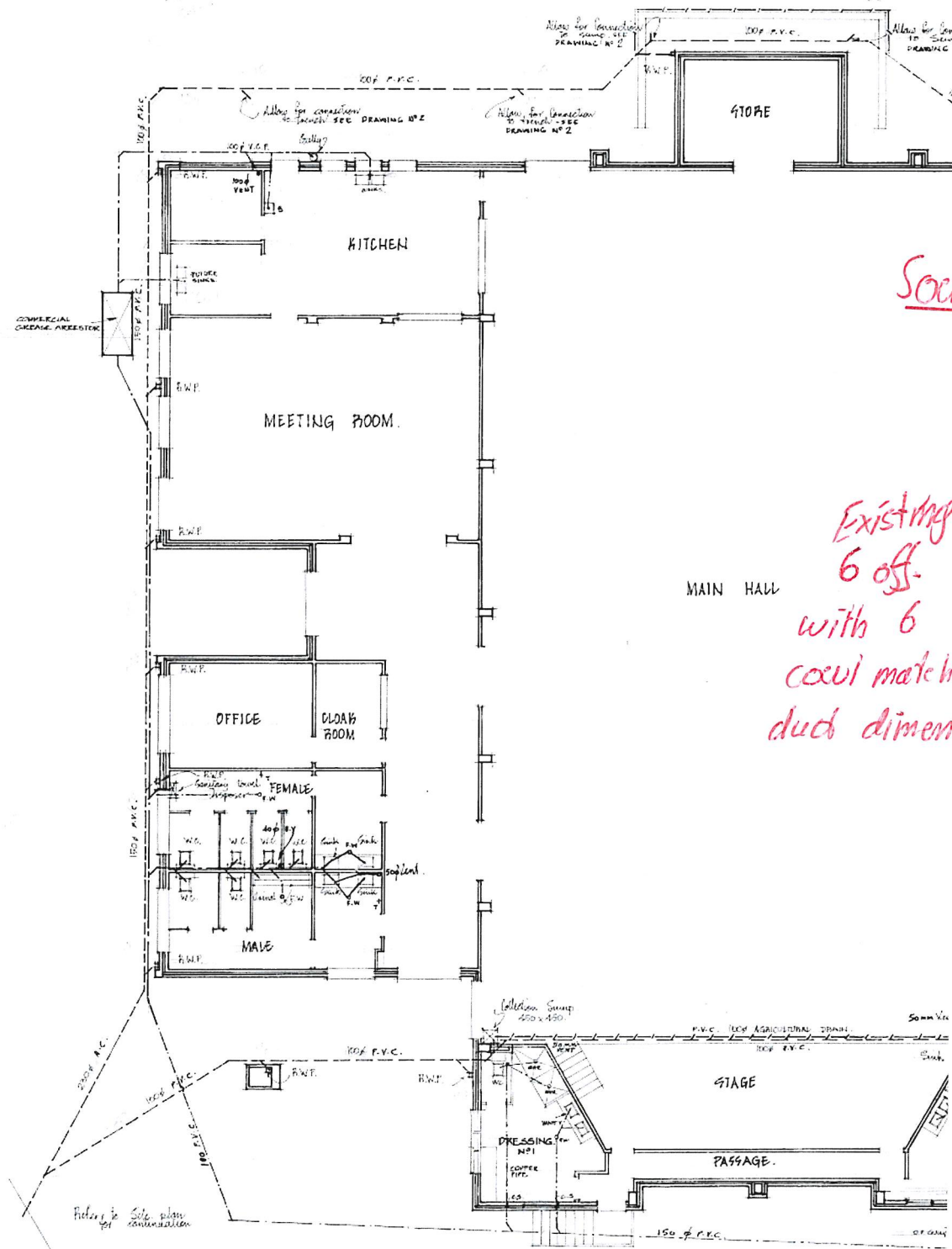
CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH COMM
AT LOTS 8 & 9 WALKER ST, HE
FOR THE CITY OF WOLLONGONG

KEY	AMENDMENT	DATE	SCALE
A	REVISIONS		

SA4-21 3.A

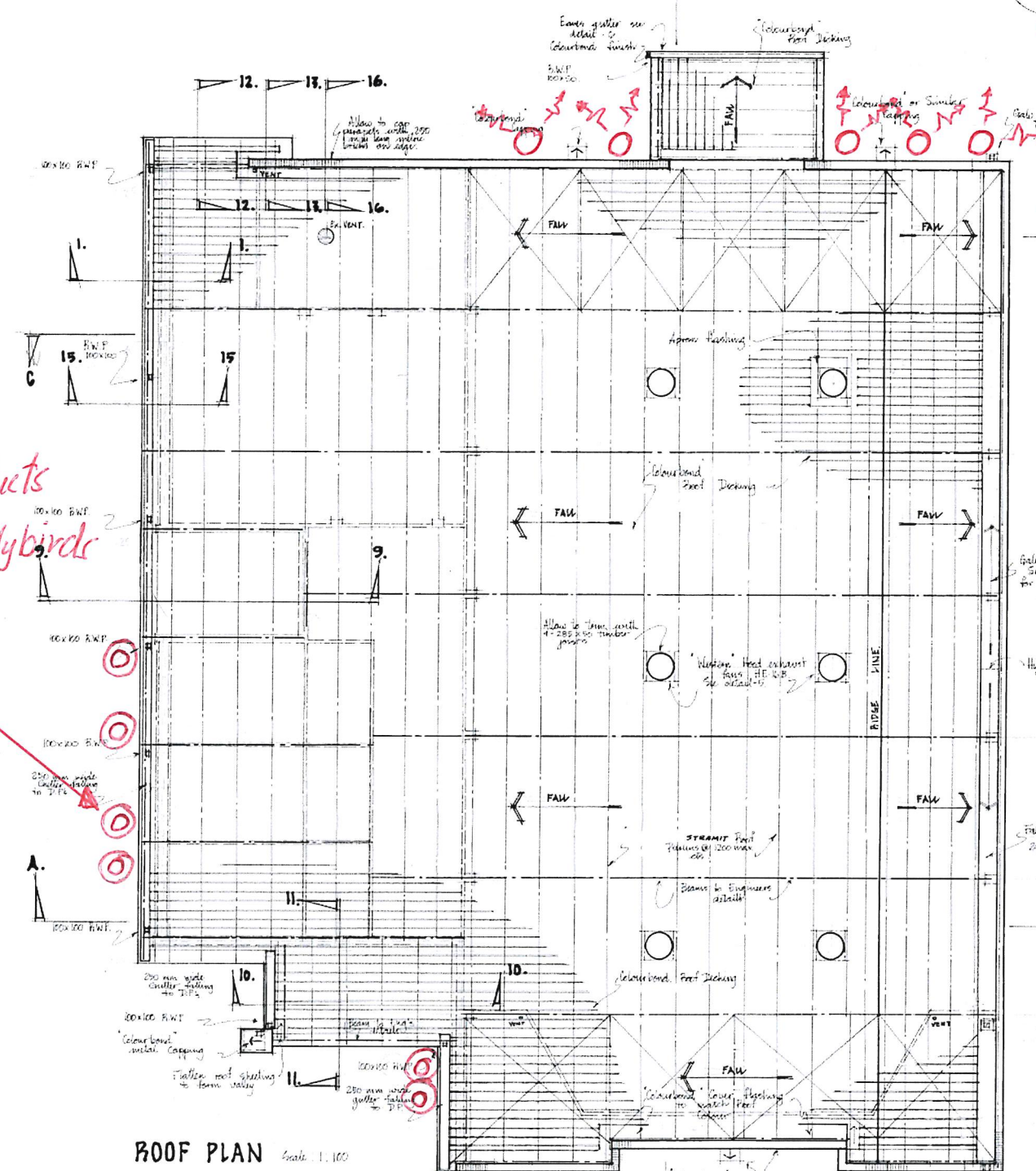


DRAINAGE PLAN Scale: 1:100

South End

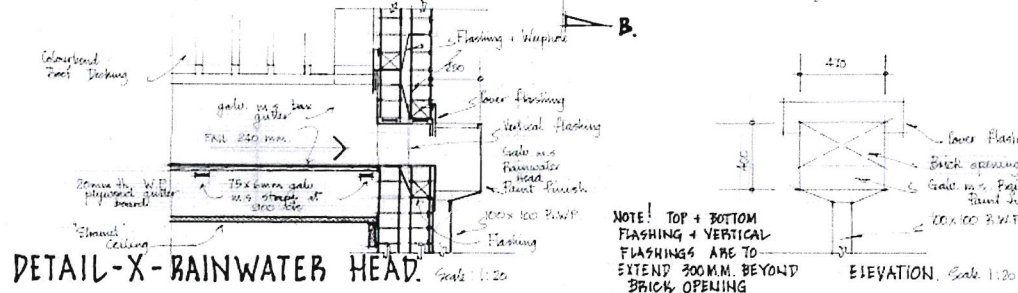
Existing vertical ducts
6 off. Replace whirlybirds
with 6
coul matching
duct dimensions

Western End



ROOF PLAN Scale: 1:100

Section detail shown on drawing SA421 3.A



DETAIL-X-RAINWATER HEAD Scale: 1:20

NOTE! TOP & BOTTOM FLASHING & VERTICAL FLASHINGS ARE TO EXTEND 300MM BEYOND BRICK OPENING

ELEVATION Scale: 1:20

CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2085
PHONES 43 5181, 43 4947

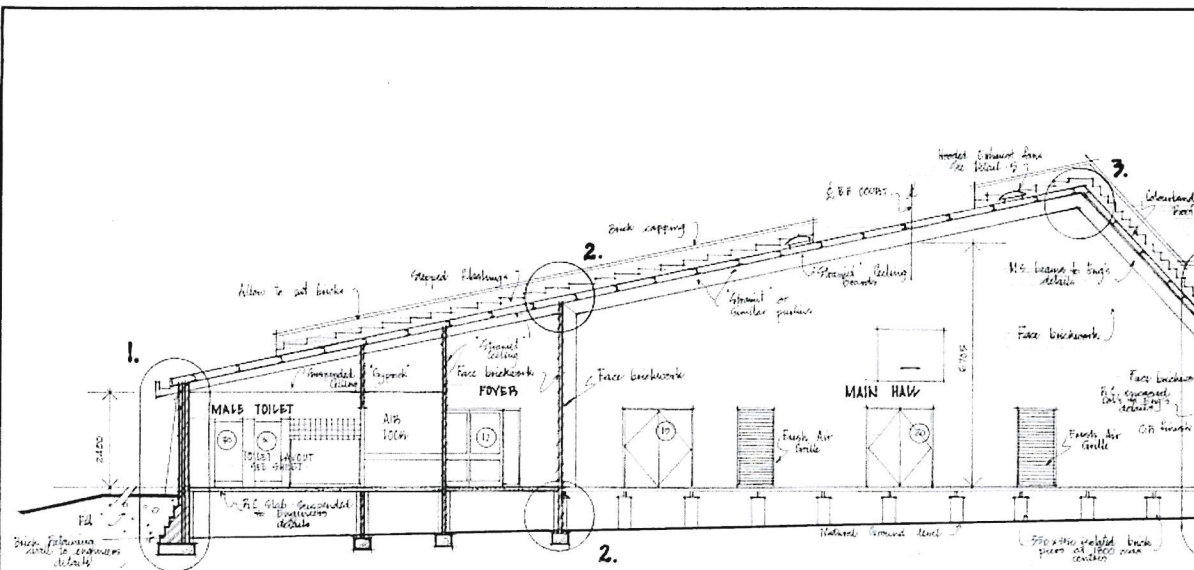
PROPOSED HELENSBURGH COM
AT LOTS 8 & 9 WALKER ST, H
FOR THE CITY OF WOLLONGONG

RE

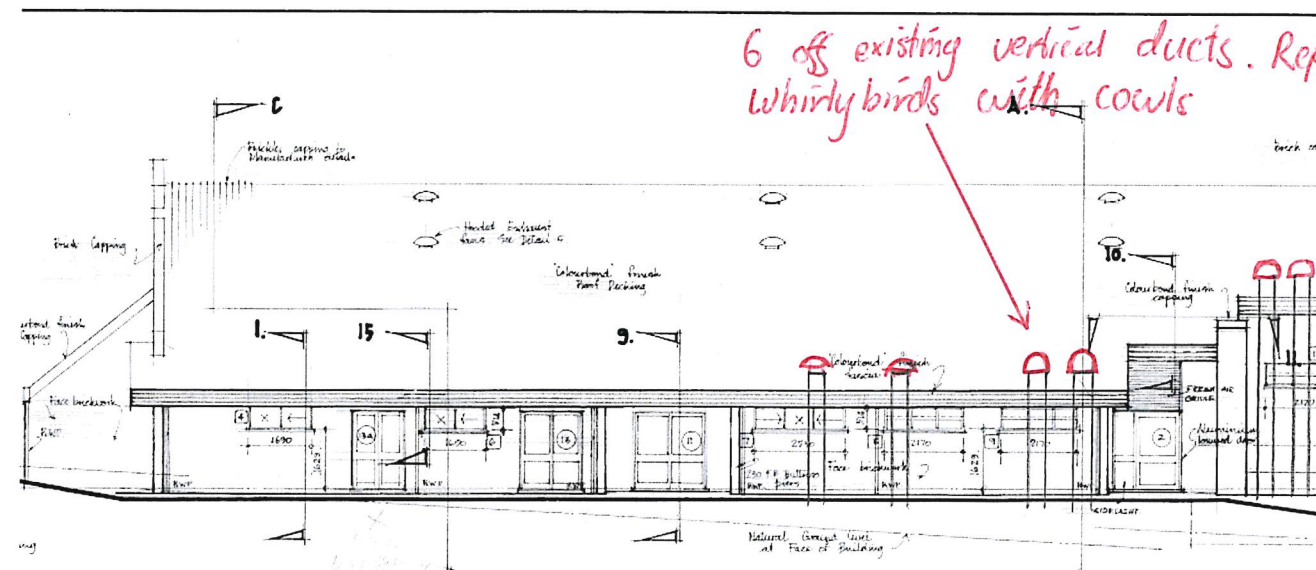
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A	WALL AMENDED IN ROOF AREA	1-1-78	Scale 1:100, 1:20
B	FLASHING & GUTTERING CHANGED	1-1-78	
C	ALTERING AND ADDING TO STRUCTURE	1-1-78	
D	NEW DRAIN TO NEW SITE	1-1-78	
E	NEW DRAIN TO NEW SITE	1-1-78	
F	NEW DRAIN TO NEW SITE	1-1-78	
G	NEW DRAIN TO NEW SITE	1-1-78	
H	NEW DRAIN TO NEW SITE	1-1-78	
I	NEW DRAIN TO NEW SITE	1-1-78	
J	NEW DRAIN TO NEW SITE	1-1-78	
K	NEW DRAIN TO NEW SITE	1-1-78	
L	NEW DRAIN TO NEW SITE	1-1-78	
M	NEW DRAIN TO NEW SITE	1-1-78	
N	NEW DRAIN TO NEW SITE	1-1-78	
O	NEW DRAIN TO NEW SITE	1-1-78	
P	NEW DRAIN TO NEW SITE	1-1-78	
Q	NEW DRAIN TO NEW SITE	1-1-78	
R	NEW DRAIN TO NEW SITE	1-1-78	
S	NEW DRAIN TO NEW SITE	1-1-78	
T	NEW DRAIN TO NEW SITE	1-1-78	
U	NEW DRAIN TO NEW SITE	1-1-78	
V	NEW DRAIN TO NEW SITE	1-1-78	
W	NEW DRAIN TO NEW SITE	1-1-78	
X	NEW DRAIN TO NEW SITE	1-1-78	
Y	NEW DRAIN TO NEW SITE	1-1-78	
Z	NEW DRAIN TO NEW SITE	1-1-78	

TR-671
SK02 rev 1

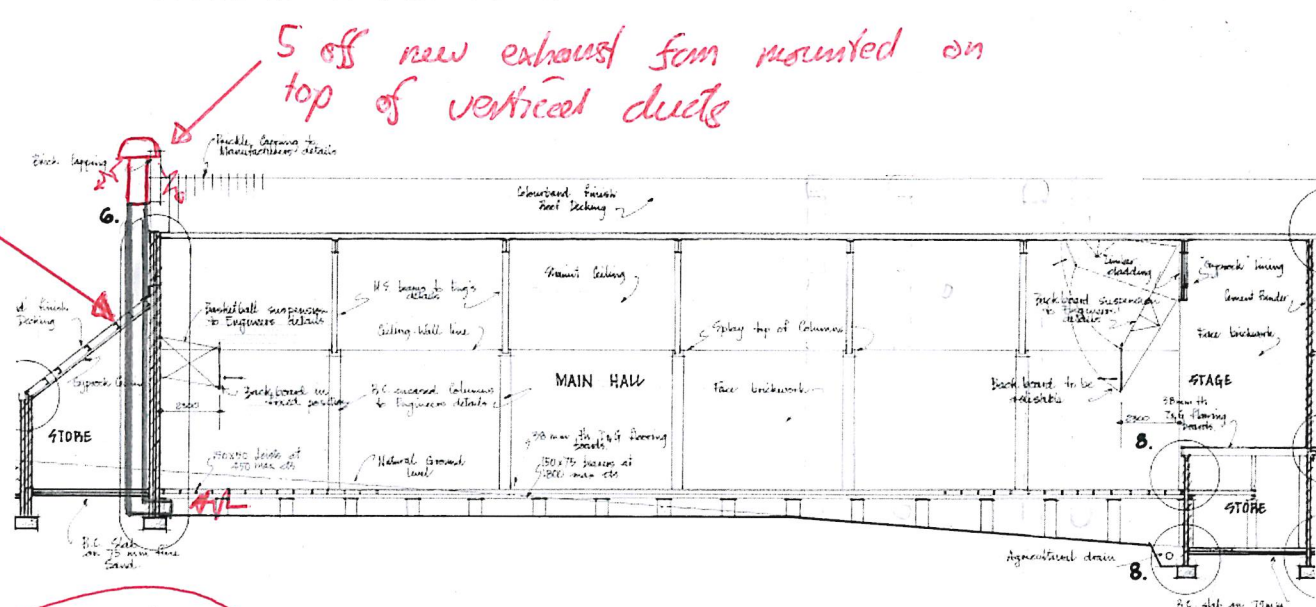
SA421 5.A



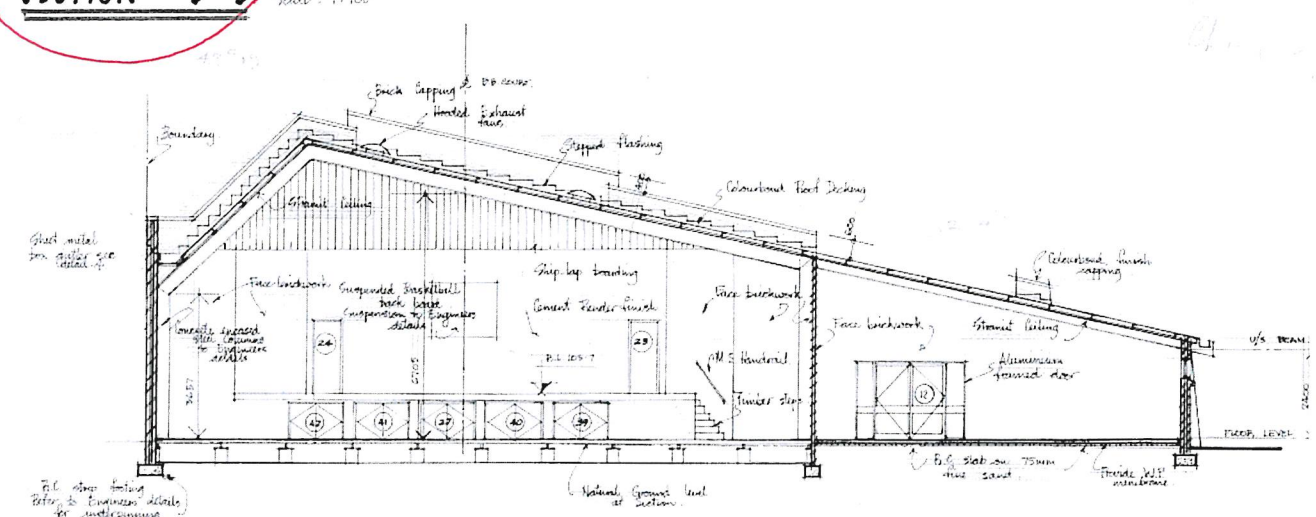
SECTION A-A Scale: 1:100



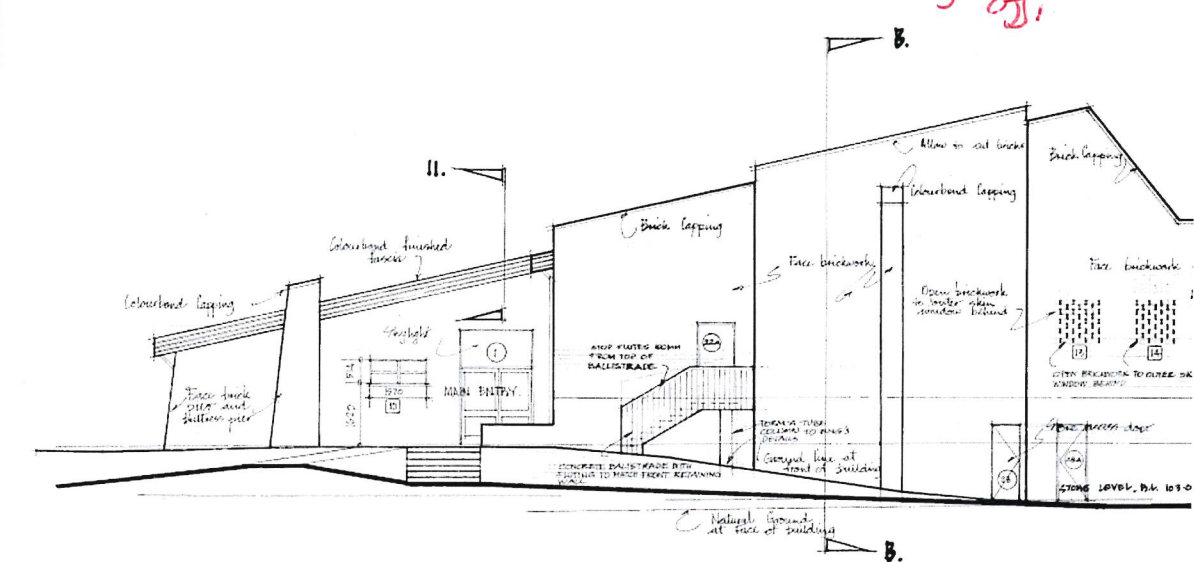
SOUTHERN ELEVATION Scale: 1:100



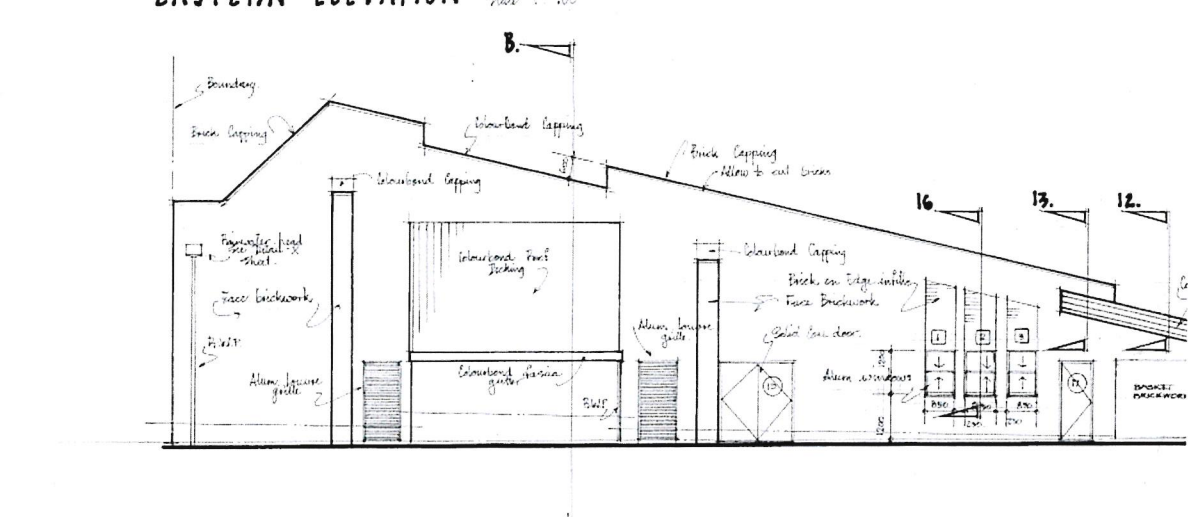
SECTION B-B Scale: 1:100



SECTION C-C Scale: 1:100



EASTERN ELEVATION Scale: 1:100



WESTERN ELEVATION Scale: 1:100

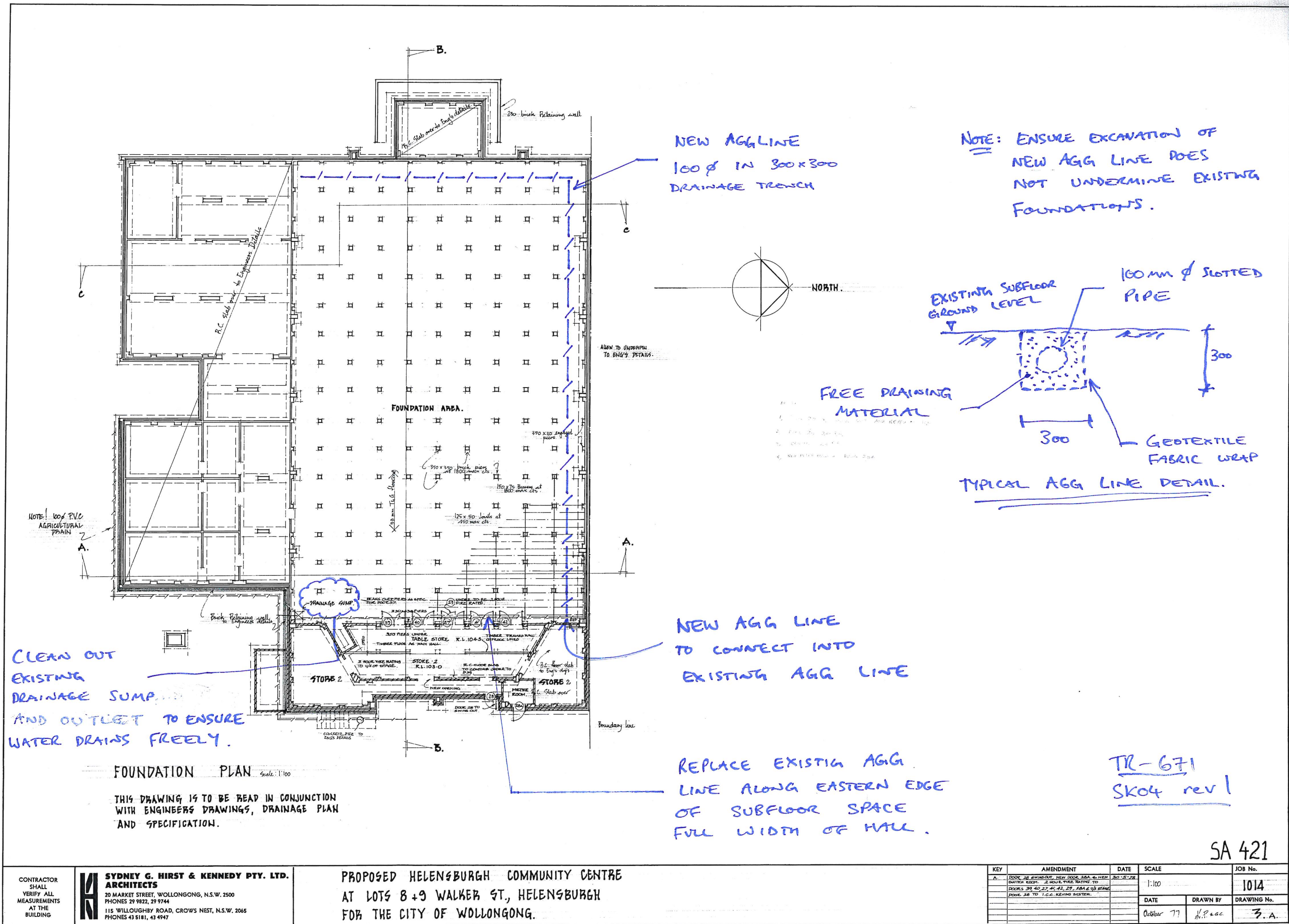
CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
 20 MARKET STREET, WOLLONGONG, N.S.W. 2500
 PHONES 29 9822, 29 9744
 115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
 PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH AT LOTS 8 AND 9 WALKER FOR THE CITY OF WOLLONGONG

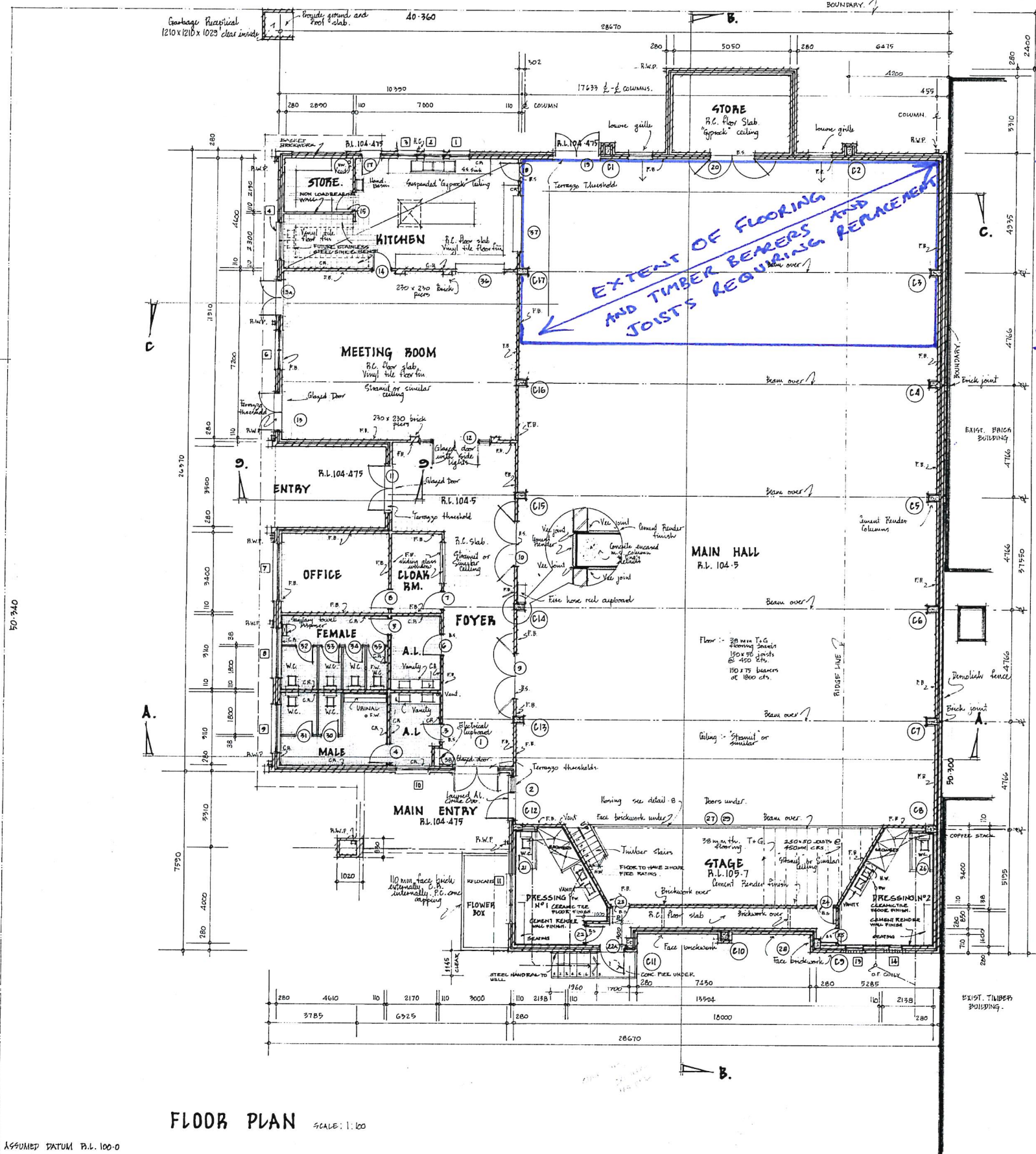
KEY	AMENDMENT	DATE	SCALE
1	DELETE WHIRLYBIRDS & REPLACE WITH COWLS	22/11/20	Scale: 1:100
2	NEW EXHAUST FAN MOUNTED ON TOP OF VERTICAL DUCTS	22/11/20	DATE
3	RELOCATE EXHAUST FAN ON TOP OF VERTICAL DUCT	22/11/20	DRAW
4	RELOCATE EXHAUST FAN ON TOP OF VERTICAL DUCT	22/11/20	DATE
5	RELOCATE EXHAUST FAN ON TOP OF VERTICAL DUCT	22/11/20	DRAW

TR-671
SK03 rev 1
SA421 6.A

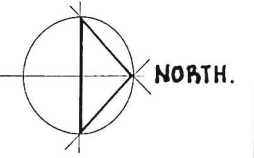


LANE

WAY



7500 (APPROX)



EXIST. BRICK PUBLIC TOILET
R.L. 103.50

EXIST. BRICK BABY HEALTH CENTRE
R.L. 102.5

FLOOR PLAN SCALE: 1:100

ASSUMED DATUM R.L. 100.0
ON KERB IN WALKER ST.

TR-671
SK05 rev 1

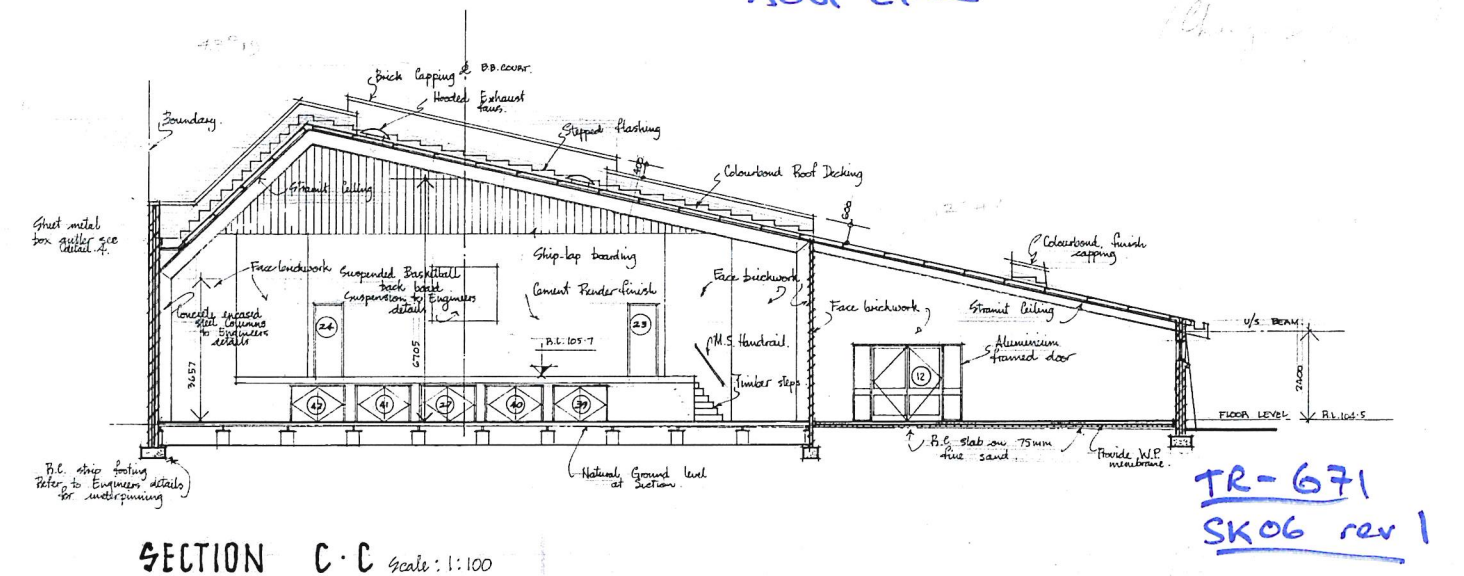
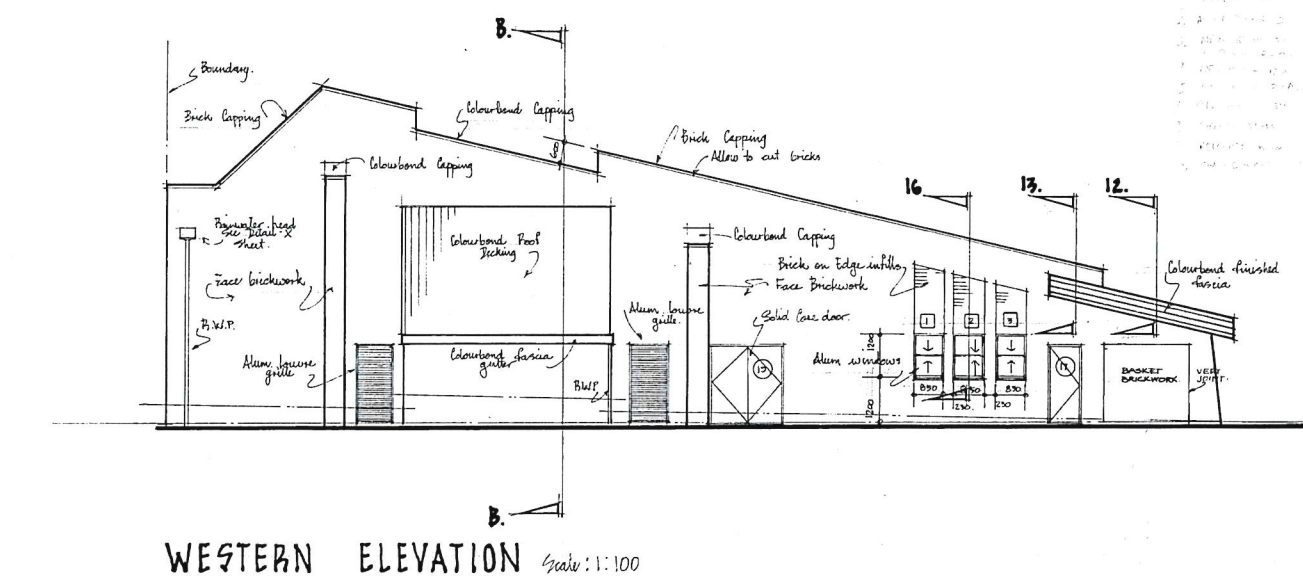
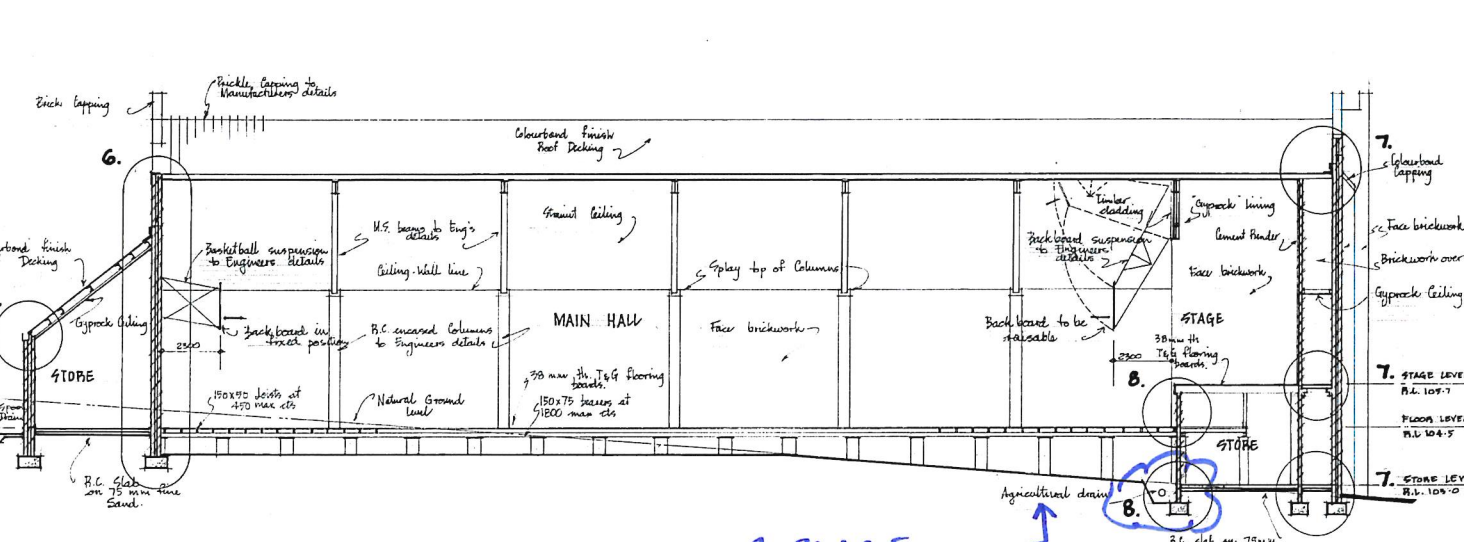
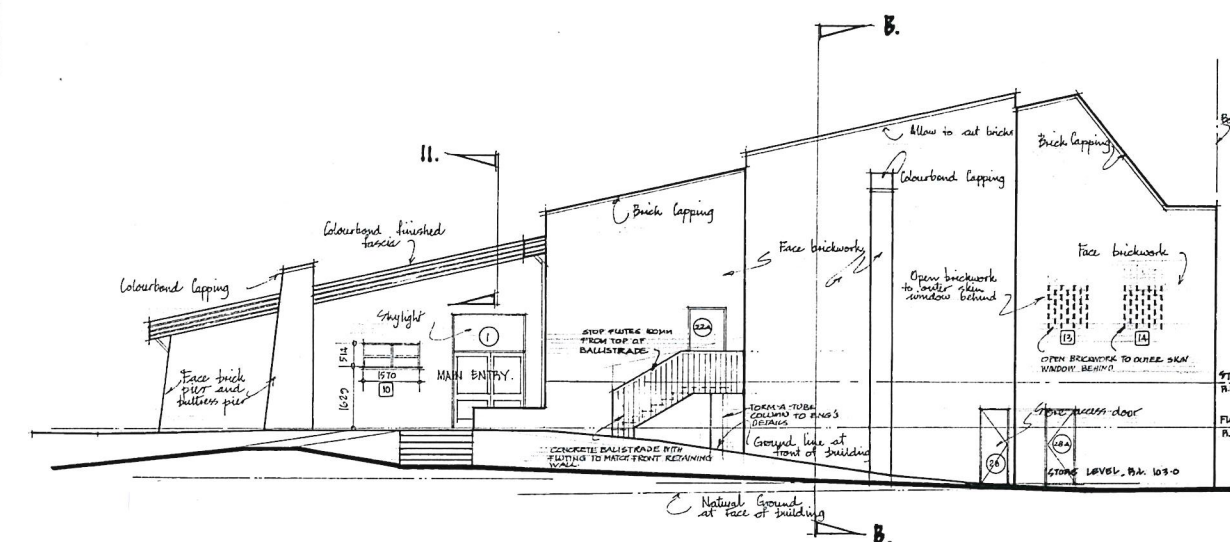
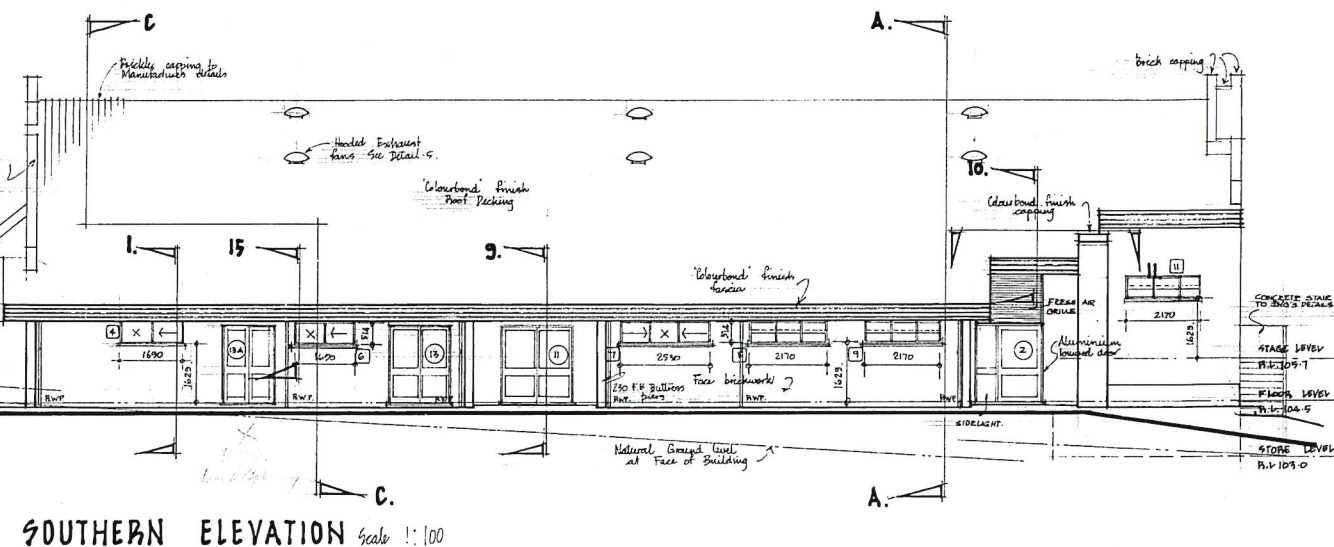
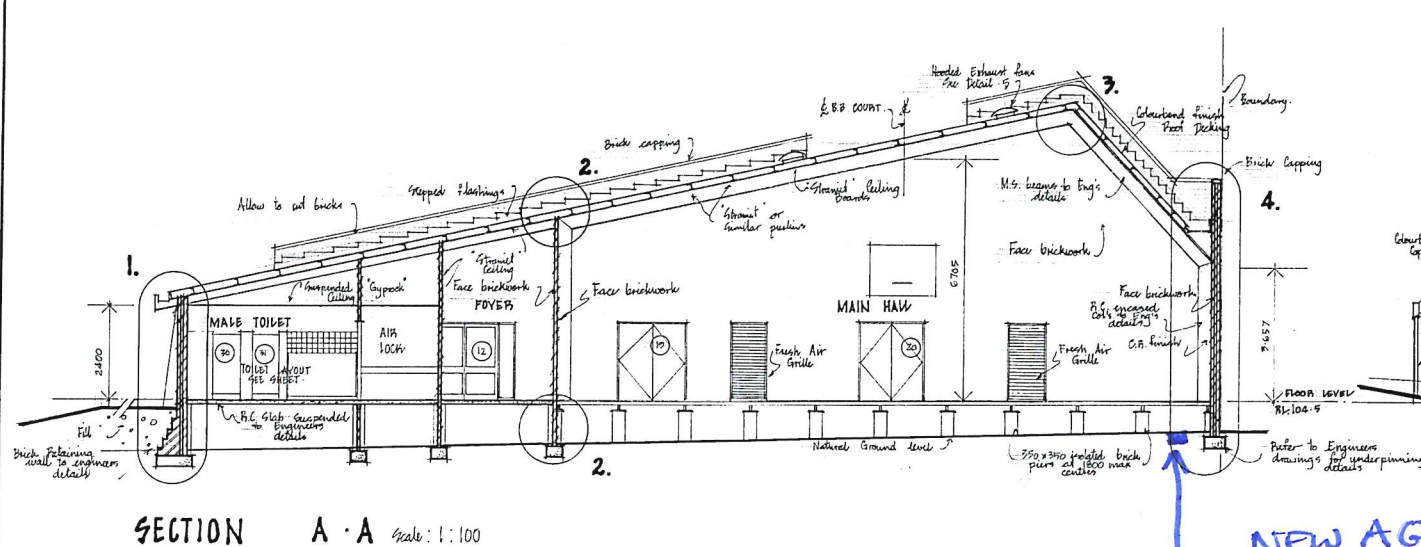
SA 421

CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH COMMUNITY CENTRE
LOTS 8 AND 9 WALKER ST., HELENSBURGH.
FOR THE CITY OF WOLLONGONG.

KEY	AMENDMENT	DATE	KEY	AMENDMENT	DATE	SCALE	JOB No.
DELITE. H.W. UNIT. UNDER BENCH & REPLACE WITH H.W. UNIT TO SPOKE.	2/7/78	A	NEW STAIR LANDING + DOOR 22A.	30.5.78		Scale: 1:100	1014
			ALTER PRESSING ROOM + D. 22.				
			SWING DOORS, 1, 11, 12, 13, 14, 25, OUT.				
			DELITE. WINDOWS, 5, 12.				
			DOOR 2, 21 TO SINGLE LEAF WITH SIDE LIGHT + GRILLE OVER. DELITE. CHILD ENCLOSURE				
			STAGE FLOOR 2ND F.R. DELITE. DOOR 16	5.6.78		DATE	DRAWN BY
			ALTER. KITCH. SINK, SUBSISTIVE. W.P.			October 1977	K.P. & G.C.
							DRAWING No.
							4. A.



TR-671
SK06 rev 1

SA 421

CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH COMMUNITY CENTRE
AT LOTS 8 AND 9 WALKER ST., HELENSBURGH.
FOR THE CITY OF WOLLONGONG.

KEY	AMENDMENT	DATE	SCALE	JOB No.
A	DELETE WINDOWS 5, 12. MOVE DOORS 23, 24. 1-6-78		Scale: 1:100	1014
	NEW DOOR 6 STAGE FROM STAGE. NEW DOORS 13 & 24. REMOVE DOOR 23. RELOCATE CHANGE WINDOW 4. RELOCATE W.I. CHANGE DOOR 2 WITH VENT CHIE. DETAIL B TO CHANGE REF DING 2A.			
		DATE	DRAWN BY	DRAWING No.
		October 1977	K.P. & C.	6. A.

Photo 1/4

Door to be
replaced with
louvered door

Photo 2/4

Existing hall, floor
vents to the floor
space to be blocked
off. (TYPICAL)



Photo 3/4

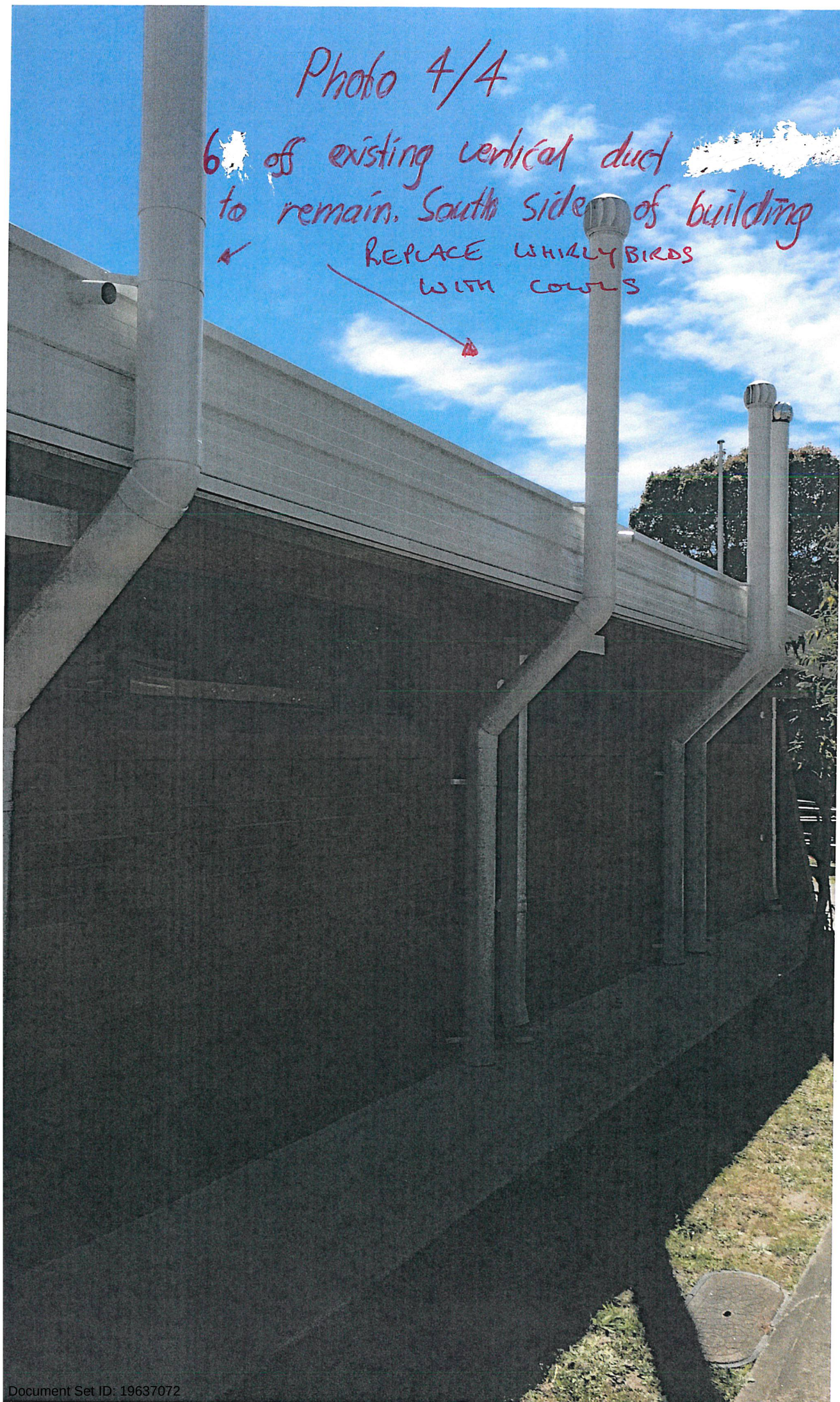
5 off whirlybirds
to be replaced with
vertical mounted
fans. West side
of building

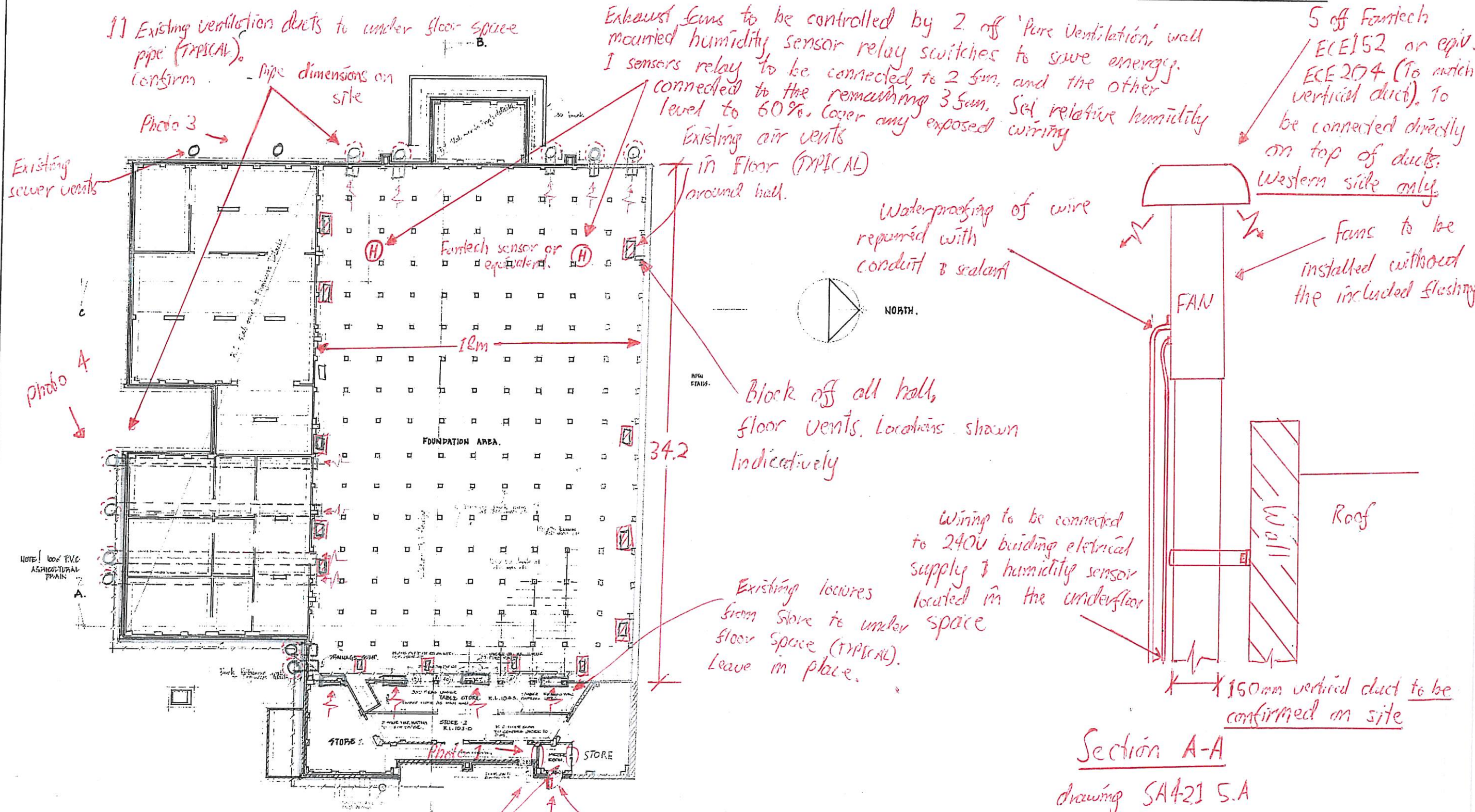


Photo 4/4

6. off existing vertical duct
to remain. South side of building

REPLACE WHIRLY BIRDS
WITH COWLS





FOUNDATION PLAN

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENGINEERS DRAWINGS, DRAINAGE PLAN AND SPECIFICATION.

CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING

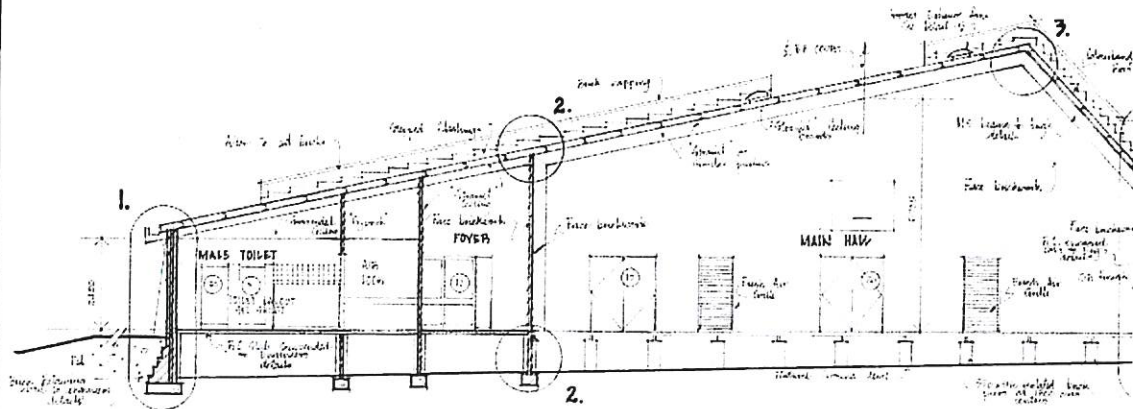


SYDNEY G. HIRST & KENNEDY PTY. LTD. ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4997

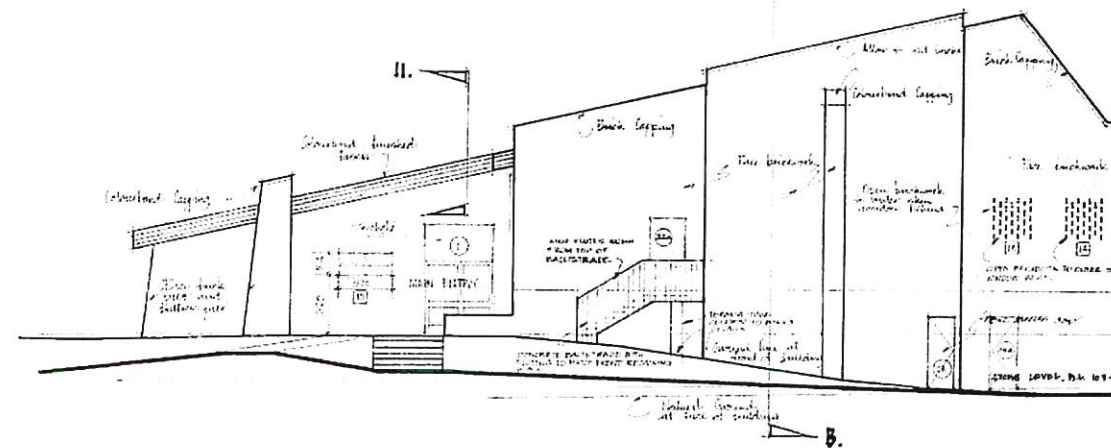
PROPOSED HELENSBURGH COMM
AT LOTS 8+9 WALKER ST, HE
FOR THE CITY OF WOLLONGONG

KEY	AMENDMENT	DATE	SCALE
1	REVISED DRAWING	10/12/20	1:100
2	REVISED DRAWING	10/12/20	1:100
3	REVISED DRAWING	10/12/20	1:100
4	REVISED DRAWING	10/12/20	1:100
5	REVISED DRAWING	10/12/20	1:100
6	REVISED DRAWING	10/12/20	1:100
7	REVISED DRAWING	10/12/20	1:100
8	REVISED DRAWING	10/12/20	1:100
9	REVISED DRAWING	10/12/20	1:100
10	REVISED DRAWING	10/12/20	1:100

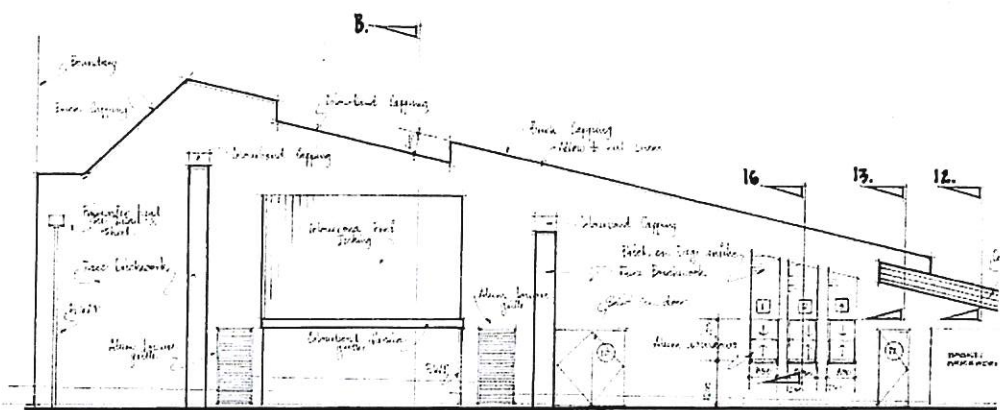
SA421 3.A



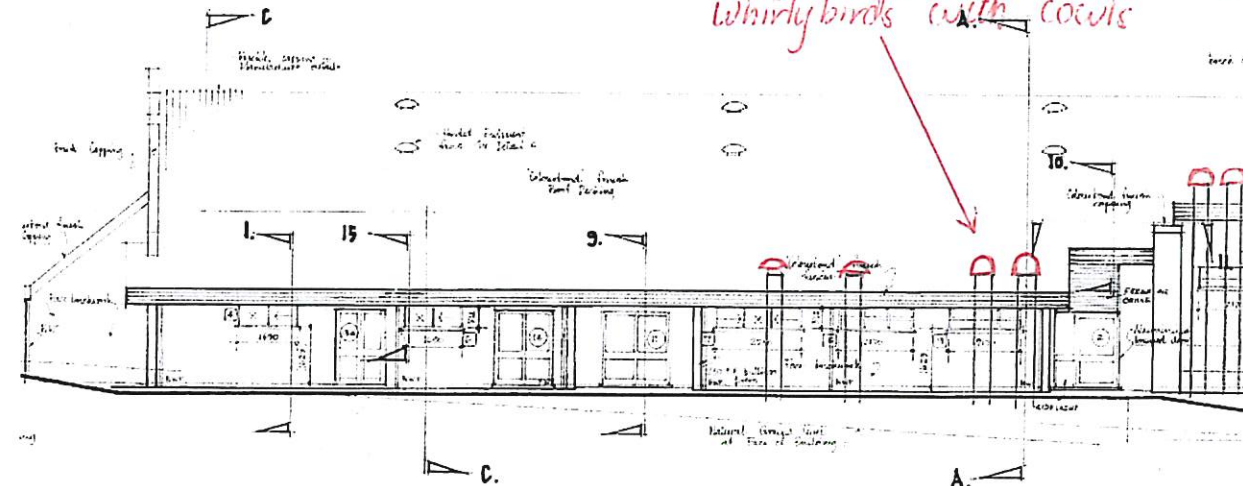
SECTION A-A Scale 1:100



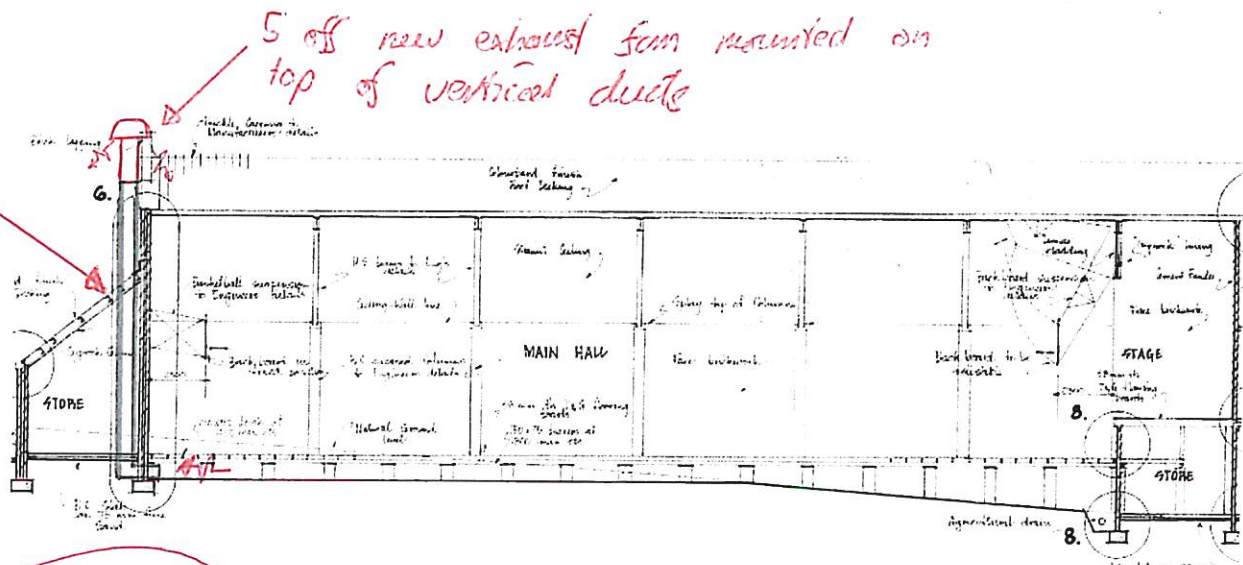
EASTERN ELEVATION Scale 1:100



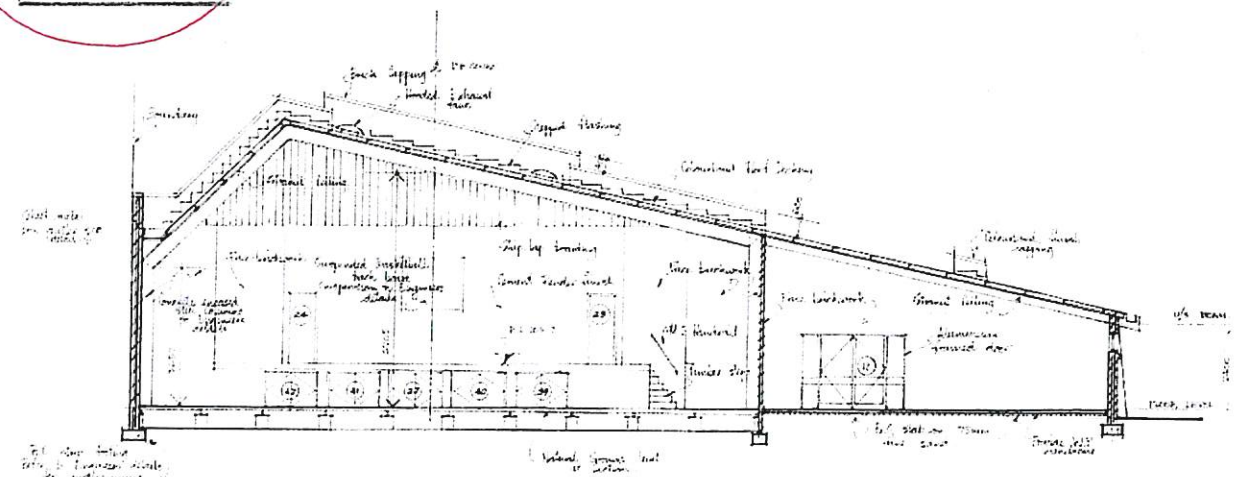
WESTERN ELEVATION Scale 1:100



SOUTHERN ELEVATION Scale 1:100



SECTION B-B Scale 1:100



SECTION C-C Scale 1:100

CONTRACTOR
SHALL
VERIFY ALL
MEASUREMENTS
AT THE
BUILDING

SYDNEY G. HIRST & KENNEDY PTY. LTD.
ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH
AT LOTS 8 AND 9 WALKER
FOR THE CITY OF WOLLONG

STRE
GH.

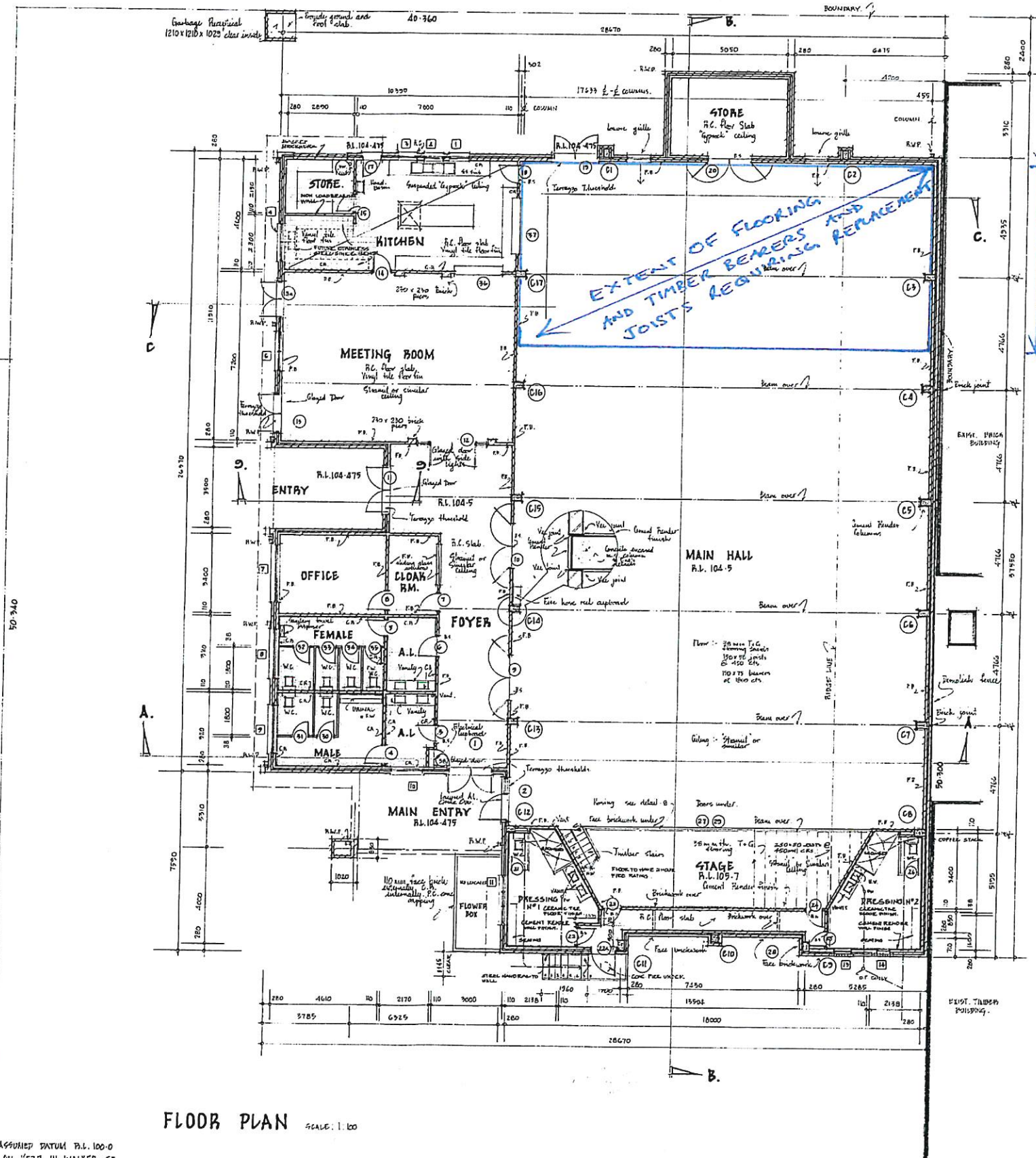
KEY	AMENDMENT	DATE	SCALE
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3	REVISED DRAWING	10/12/20	1:100
4	REVISED DRAWING	10/12/20	1:100
5	REVISED DRAWING	10/12/20	1:100
6	REVISED DRAWING	10/12/20	1:100
7	REVISED DRAWING	10/12/20	1:100
8	REVISED DRAWING	10/12/20	1:100
9	REVISED DRAWING	10/12/20	1:100
10	REVISED DRAWING	10/12/20	1:100
11	REVISED DRAWING	10/12/20	1:100
12	REVISED DRAWING	10/12/20	1:100
13	REVISED DRAWING	10/12/20	1:100
14	REVISED DRAWING	10/12/20	1:100
15	REVISED DRAWING	10/12/20	1:100
16	REVISED DRAWING	10/12/20	1:100
17	REVISED DRAWING	10/12/20	1:100
18	REVISED DRAWING	10/12/20	1:100
19	REVISED DRAWING	10/12/20	1:100
20	REVISED DRAWING	10/12/20	1:100

TR-671
SK03 rev 1

SAFRI G.A

EXIST. BRICK
PUBLIC TOILET
R.L. 103.59.

EXIST. BRICK BABY HEALTH
CENTRE
R.L. 102.9.



FLOOR PLAN SCALE: 1:100

ASSUMED DATUM R.L. 100.0
ON: HEAR IN WALKER ST.

TR-671
SK05 rev1

SA 421

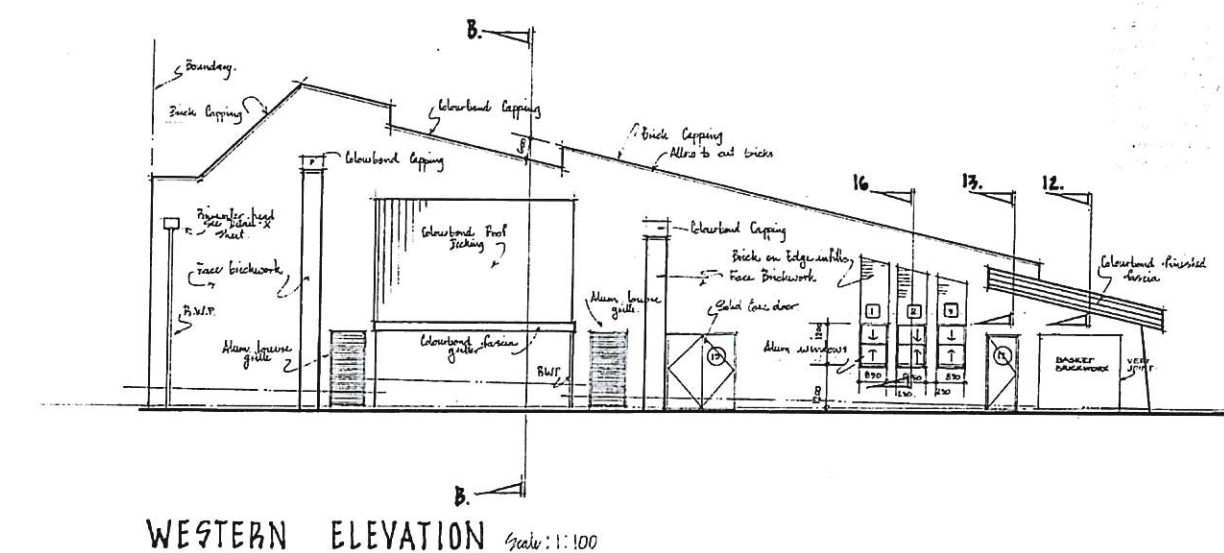
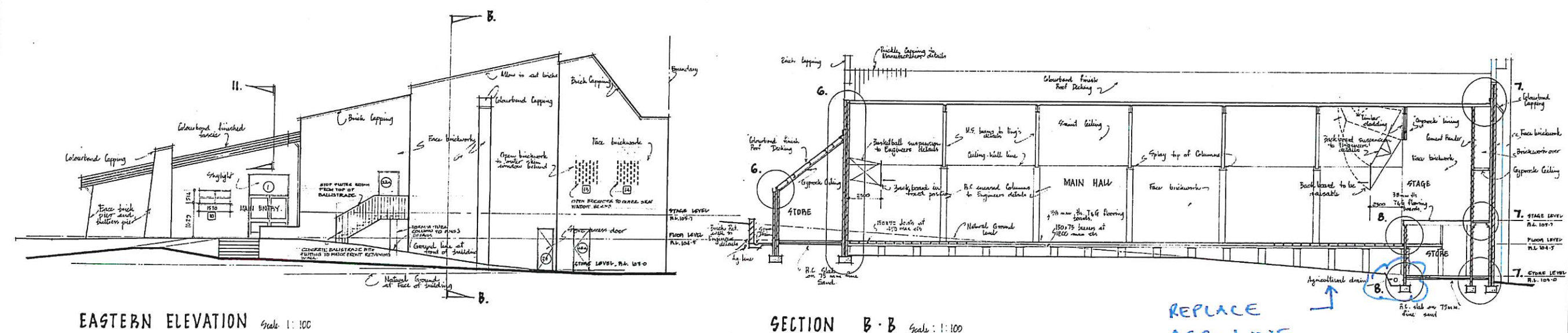
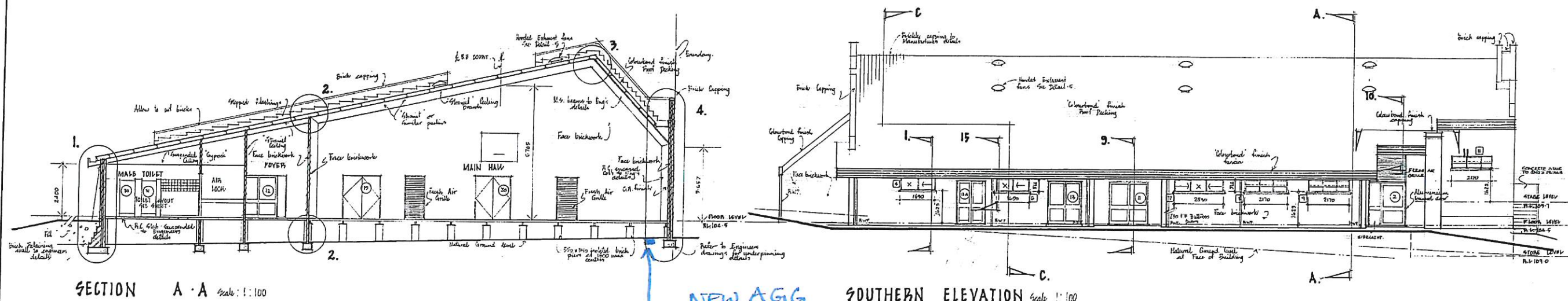
CONTRACTOR
SHALL
VERIFY ALL
MEASUREMENTS
AT THE
BUILDING



**SYDNEY G. HIRST & KENNEDY PTY. LTD.
ARCHITECTS**
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2085
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH COMMUNITY CENTRE
LOTS 8 AND 9 WALKER ST., HELENSBURGH.
FOR THE CITY OF WOLLONGONG.

KEY	AMENDMENT	DATE	KEY	AMENDMENT	DATE	SCALE	JOB No.
	DELIVERED BY THE ARCHITECT TO THE CONTRACTOR FOR THE CONTRACTOR TO VERIFY	1/1/77	A	NEW STAIR LANDING - 1000 x 1000	10/1/77	Scale: 1:100	1014
				ALTER PRESSING ROOM - P. 22		DATE	DRAWN BY
				SWITCH DOORS, 1, 2, 12, 13, 14, 15, OUT.		October 1977	K.P. & G.C.
				DELIVERED BY THE ARCHITECT TO THE CONTRACTOR FOR THE CONTRACTOR TO VERIFY			DRAWING No.
				2000 x 2000 x 1000 x 1000 x 1000 x 1000			4. A.



REPLACE
AGG LINE

TR-671
SK06 rev 1

SA 421

CONTRACTOR
SHALL
VERIFY ALL
MEASUREMENTS
AT THE
BUILDING



SYDNEY G. HIRST & KENNEDY PTY. LTD.
ARCHITECTS
20 MARKET STREET, WOLLONGONG, N.S.W. 2500
PHONES 29 9822, 29 9744
115 WILLOUGHBY ROAD, CROWS NEST, N.S.W. 2065
PHONES 43 5181, 43 4947

PROPOSED HELENSBURGH COMMUNITY CENTRE
AT LOTS 8 AND 9 WALKER ST., HELENSBURGH.
FOR THE CITY OF WOLLONGONG.

KEY	AMENDMENT	DATE	SCALE	JOB No.
A	DELETED WINDOWS, S12, HMMR DOORS 23.5A NEW DOORS & STAIRS & RAMP STAIRS, NEW STAIRS 13.4 & 2.3A, NEWER RAILINGS, ELEVATOR RELOCATE, CHANGE WINDOW A, RELOCATE NEW, CHANGE DOOR 5 WITH VENT COVER, DETAIL B TO CHANGE RAMP DOOR 2A.	1-6-78	Scale: 1"=1'-0"	1014
			DATE	DRAWN BY
			October 1977	K.P. & a.c.
				6. A.
