Date	**February 28, 2020**	
To	**Caleb Jackson**	**Apollo Fabrication Group P/L**
From	**Yuguang Li**	**YGL Consulting**
Subject	**10–12 Telegraph Street Young Extension**	
Job No	**2016j0006**	
Document No	**CA01**	**Rev B**

1 Scope

YGL Consulting has been engaged to review and comment on the fire construction methods to satisfy the BCA provisions under Section C. Contingent to further stakeholder consultation and fire engineering review, a combination of performance and deemed-to-satisfy (DtS) solutions may be proposed to meet the design intent achieved by practicable construction methods with respect to fire resisting construction.

The relevant fire safety provisions under BCA Sections D & E are assumed to comply with BCA deemed-to-satisfy provisions and not reviewed further as part of our scope. This review is based on the following information for the subject site.

- A set of drawings dated 24.02.2020 for Stage 2 -10 -12 Telegraph road, Young (received by YGL Consulting on 20/02/20
- A sketch indicating the fire separation between the workshop and paint shop/office area

All other fire related building features are assumed to comply with BCA deemed-to-satisfy provisions and not reviewed further as part of our scope.

This review and the recommended fire safety measures are also subject to the review of the project building certifier.

2 – Option 1 (No Sprinklers)

2.1 Fire Compartmentation Involving Varying Type of Construction

The subject building is primarily a Class 8 building for steel fabrication with ancillary Class 5 office use on both ground and first floors at the front of the building.

Under the BCA DtS provisions of Table 2.2, the maximum floor and volume limits are:

- 5,000m2 and 30,000m3 respectively for Class 8 Type A construction,
- 3,500m2 and 21,000m3 respectively for Class 8 Type B construction, and
- 3,000m2 and 18,000m3 respectively for Class 5 Type C construction

With the the fire separation between the workshop and paint shop/office area, the following are to be implemented:

- Fire compartment 1 - Workshop fire compartment floor and volume to be under the Type A limits
- Fire compartment 2 - Paint shop fire compartment floor and volume to be under the Type B limits
- Fire compartment 3 - Office fire compartment floor and volume to be under the Type C limits

2.2 Fire Walls

The fire wall between all fire compartments shall be in accordance with C2.7; i.e. achieving an FRL of 240/240/240 by masonry or concrete construction; PARTICULARLY:

- The fire wall extends through all storeys and spaces in the nature of storeys that are common to that part and any adjoining part of the building.
- The fire wall is carried through to the underside of the roof covering.
- Where the roof of one of the adjoining parts is lower than the roof of the other part, the fire wall extends to the underside of the covering of the higher roof, or not less than 6 m above the covering of the lower roof;
- Building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained.

2.3 Fire Rating Provisions (in addition to Fire Walls)

For Fire compartment 1 & 2, the concessions under Spec C1.1 clause 2.5 applies where the portal frame steel columns are permitted to be non-fire rated. Any non-loadbearing external walls located within 3m of the site boundaries are to be fire rated for up to 240 minutes; otherwise no fire rating required. This would likely be achieved by concrete construction.

For Fire compartment 3 which is a two storey Class 5 building, there is generally no fire rating requirements except for those walls located within 3m of the side boundary where 90 minutes FRL is to be provided.

The roof for all fire compartments may be non-fire rated and should be non-combustible, as the rise in storeys is less than 3 (Spec C1.1 clause 3.5 'Roof: Concession').

3 Option 2 (With Sprinklers)

Under the BCA C2.3 'Large isolated buildings', the subject development may be considered as a large isolated building, where the provision of sprinklers and perimeter access potentially permit the building to go over the limit of Type A. However the building is proposed to be built right to the west boundary, such that perimeter vehicle access for fire brigade cannot be provided. Therefore sprinklers provide higher level of safety but do not provide the flexibility in floor and volume.

4 Summary

Option 1 allows the construction of a compartmentalised building with the combination of Type A, Type B & Type C with the limits under Table C2.2. The fire walls between all three (3) fire compartments shall comply with BCA C2.7.

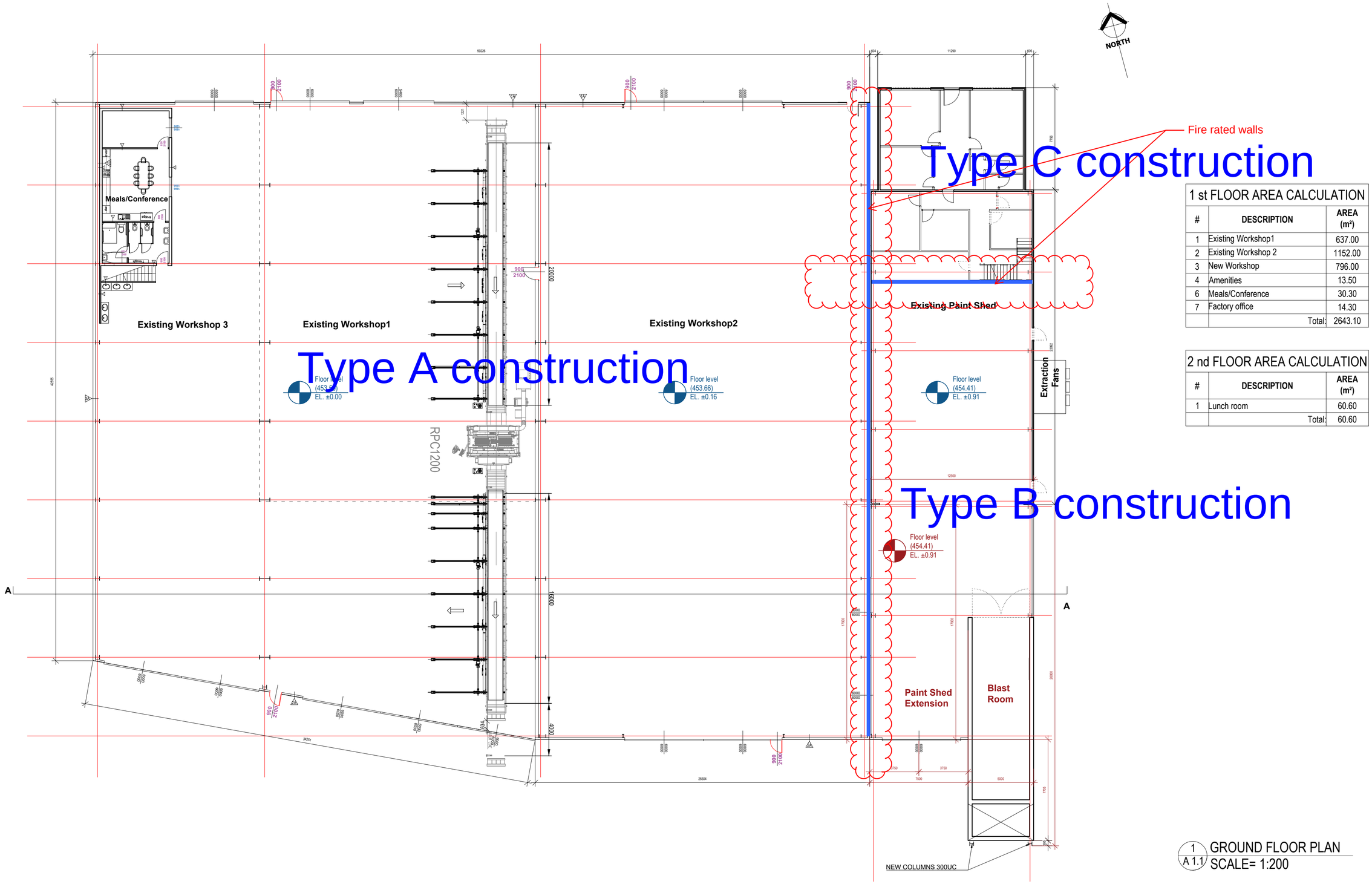
Option 2 provide higher level of safety but do not provide the flexibility in floor and volume.

Kind regards,

Yuguang Li

Fire Safety Engineer

Category C10 Accredited Certifier – Fire Safety Engineering Compliance (BPB0774) in NSW



1 st FLOOR AREA CALCULATION		
#	DESCRIPTION	AREA (m²)
1	Existing Workshop1	637.00
2	Existing Workshop 2	1152.00
3	New Workshop	796.00
4	Amenities	13.50
6	Meals/Conference	30.30
7	Factory office	14.30
	Total:	2643.10

2 nd FLOOR AREA CALCULATION		
#	DESCRIPTION	AREA (m²)
1	Lunch room	60.60
	Total:	60.60

1 / A 1.1 GROUND FLOOR PLAN
SCALE= 1:200

ISSUE	DATE	REASON FOR REVISION
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UNIQUE CAD EXPERIENCE

Client: APOLLO FABRICATION GROUP Pty Ltd

Project: Paint Shed Roof Extension-
10 - 12 Telegraph road, Young

Drawing: PROPOSED FLOOR PLAN

Job Number:

No. in Set: 5

Sheet No.: A 1.1

Scale: 1 : 200

Revision No.:

Date: 24.02.2020

Revision Date.:

Drawn: MG

A2

10 TELEGRAPH RD YOUNG

HYDRAULIC SERVICES

SYMBOLS

- DIRECTION OF FLOW
- SERVICE
- SIZE
- H04 — CONTINUED ON DWG
- DROPPER
- RISER
- TEE
- CAPPED OFF SERVICE
- DIRECTION OF FLOW IN PIPE
- REDUCER
- ISOLATION VALVE
- BALANCING VALVE
- BALL VALVE
- FLOAT VALVE
- CHECK VALVE (WATER SERVICE) REFLUX VALVE (DRAINAGE)
- SV IN PATH BOX
- SOLENOID VALVE
- RPZD
- STRAINER
- TUNDISH
- FLOOR WASTE
- BUCKET TRAP FLOOR WASTE
- OVERFLOW RELIEF GULLY/YARD GULLY
- BOUNDARY TRAP
- AIR ADMITTANCE VALVE
- CLEAR OUT
- IPMF
- PUMP
- METER
- TMV
- PRESSURE GAUGE
- FILTER
- PRESSURE REDUCING VALVE
- PRESSURE LIMITING VALVE
- HOT WATER UNIT
- HOSE TAP
- GAS REGULATOR
- GAS METER
- ELECTRICAL CONTROL PANEL
- OVERLAND FLOW PATH
- PENETRATION

SYMBOLS

- SEWER MANHOLE
- KERB INLET PIT
- STORMWATER HEADWALL
- SPREADER
- FIRE HOSEREEL
- FIRE HYDRANT
- DOWNPIPE
- RAINWATER OUTLET
- STORMWATER PIT (WITH COVER)
- STORMWATER PIT (WITH GRATE)
- SQUARE RAINWATER OUTLET

PIPEWORK

- STORMWATER
- STORMWATER RISING MAIN
- SUB-SOIL
- SEWER
- SEWER RISING MAIN
- VENT
- TRADE WASTE
- TRADE WASTE RISING MAIN
- COLD WATER
- HOT WATER
- HOT WATER RETURN
- WARM WATER
- WARM WATER RETURN
- NON POTABLE COLD WATER
- GAS
- FIRE HYDRANT
- FIRE HOSE REEL
- SPRINKLER LINE
- RECYCLED WATER
- RAINWATER
- FLOW SYSTEMS
- ELECTRICAL
- CAST IN
- EXISTING COLD WATER
- EXISTING HOT WATER
- EXISTING SPRINKLER
- EXISTING STORMWATER
- EXISTING SUBSOIL
- EXISTING SEWER
- EXISTING VENT
- EXISTING TRADE WASTE VENT
- EXISTING GAS
- EXISTING FIRE HYDRANT
- EXISTING FIRE HOSE REEL
- EXISTING TELSTRA
- EXISTING DELETE

DRAWING SCHEDULE

DWG No.	Scale	Drawing Title
H000	NTS	HYDRAULIC SERVICES COVER SHEET AND LEGEND
H201	1:200	HYDRAULIC SERVICES GROUND LEVEL PRESSURE SERVICES

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC ONLY AND HAVE BEEN PREPARED FOR THE PURPOSE OF INDICATING THE DESIGN INTENT AND SCOPE OF WORKS OF THE HYDRAULIC SERVICES UNDER D & C CONTRACT.
2. IT IS THE RESPONSIBILITY OF THE BUILDER AND/OR PLUMBING SUBCONTRACTOR TO INVESTIGATE AND COORDINATE BEFORE AND DURING THE CONSTRUCTION PHASE ALL EXISTING SERVICES WHICH WILL EFFECT THE INSTALLATION OF THESE SERVICES.
3. HYDRAULIC DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE HYDRAULIC SERVICES SPECIFICATION AND WITH RELEVANT ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
4. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT CODES AND AUSTRALIAN STANDARDS.
5. POSITION AND LEVELS OF AUTHORITIES MAINS AND/OR EXISTING SERVICES ARE INDICATIVE ONLY AND ARE TO BE CHECKED PRIOR TO COMMENCING ANY WORK.
6. DO NOT SCALE FROM THIS DRAWING, REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSION SETOUT.

ABBREVIATIONS

A/C	AIR CONDITIONING
AAV	AIR ADMITTANCE VALVE
AHD	AUSTRALIAN HEIGHT DATUM
AS	AUSTRALIAN STANDARDS
B	BASIN
BBQ	BARBEQUE
BCA	BUILDING CODE OF AUSTRALIA
BCWU	BOILING CHILLED WATER UNIT
BDO	BALCONY DRAIN OUTLET
BP	BAYONET POINT
BT	BOUNDARY TRAP
BTFW	BUCKET TRAP FLOORWASTE
BTH	BATH
BV	BALL VALVE / BALANCING VALVE
BWU	BOILING WATER UNIT
CD	CONDENSATE DRAIN
CI	CAST IRON
CIC	CAST IN COLUMN
CICL	CAST IRON CEMENT LINED
CIS	CAST IN SLAB
CL	CEILING LEVEL
CO	CLEAR OUT
CP	CHROME PLATED
CS	CLEANERS SINK
CST	CONDENSATE STACK
CT	COOK TOP
CU	COPPER
CV	CONTROL VALVE
CW	COLD WATER
DIS	DISABLED
DCV	DOUBLE CHECK VALVE
DE	DIESEL EXHAUST
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DICL	DUCTILE IRON CEMENT LINED
DP	DOWNPIPE
DTU	DRAINAGE TURN UP
DW	DISHWASHER
DWG	DRAWING
EX	EXISTING
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
EW	EYE WASH
EXT	EXTINGUISHER
FC	FUME CUPBOARD
FCR	FOR CONTINUATION REFER
FFL	FINISHED FLOOR LEVEL
FH	FIRE HYDRANT
FHBV	FIRE HYDRANT BOOSTER VALVE
FHR	FIRE HOSE REEL
FH	FIRE HYDRANT VALVE
FIP	FIRE INDICATOR PANEL
FRC	FIBRE REINFORCED CONCRETE
FSL	FINISHED SURFACE LEVEL
FU	FIXTURE UNITS
FV	FLUSH VALVE
FW	FLOORWASTE
GA	GREASE ARRESTOR
GAL	GALVANISED
GAS	GAS SERVICE
GD	GRATED DRAIN
GL	GROUND LEVEL
GM	GAS METER
GMS	GALVANISED MILD STEEL
GR	GAS REGULATOR
GST	GREASE STACK

ABBREVIATIONS cont.

GTU	GREASE TURN UP
GTVP	GREASE TRAP VENT PIPE
GV	GATE VALVE
GVP	GREASE VENT PIPE
H/L	HIGH LEVEL
HD	HEAVY DUTY
HDPE	HIGH DENSITY POLYETHYLENE
HT	HOSE TAP
HV	HIGH VOLTAGE
HW	HOT WATER
HWF	HOT WATER FLOW
HWM	HOT WATER METER
HWR	HOT WATER RETURN
HWU	HOT WATER UNIT
ID	INSIDE DIAMETER
IL	INVERT LEVEL
IM	ICE MACHINE
IO	INSPECTION OPENING
IPMF	INDUCT PIPE MICA FLAP
IR	IRRIGATION
IV	ISOLATION VALVE
KIP	KERB INLET PIT
KPA	KILOPASCAL
KW	KILOWATT
L	LITRES
L/L	LOW LEVEL
L/S	LITRES PER SECOND
LD	LIGHT DUTY
LPG	LIQUIFIED PETROLEUM GAS
LT	LAUNDRY TUB
LU	LOADING UNITS
M	METRE
M.HEAD	METRES HEAD
M/S	METRES PER SECOND
M3/HR	CUBIC METRES PER HOUR
MDPE	MEDIUM DENSITY POLYETHYLENE
MIN	MINIMUM
MJ	MEGAJOULES
MM	MILLIMETRES
MS	MILD STEEL
NG	NATURAL GAS
NPCW	NON-POTABLE COLD WATER
NPHW	NON-POTABLE HOT WATER
NPHWF	NON-POTABLE HOT WATER FLOW
NPHWR	NON-POTABLE HOT WATER RETURN
NRV	NON-RETURN VALVE
NTS	NOT TO SCALE
NY	NYLON
O/F	OVERFLOW
OD	OUTSIDE DIAMETER
ORG	OVERFLOW RELIEF GULLY
P/O	PUMP OUT
PDO	PLANTER DRAIN OUTLET
PG	PRESSURE GAUGE
PLV	PRESSURE LIMITING VALVE
PRV	PRESSURE RELIEF VALVE
PS	PAN SANITISER
PVC	POLYVINYL CHLORIDE
RCP	REFLECTED CEILING PLAN
RCP	REINFORCED CONCRETE PIPE
RHS	RECTANGULAR HOLLOW SECTION
RL	REDUCED LEVEL
RO	REVERSE OSMOSIS
RPZD	REDUCED PRESSURE ZONE DEVICE
RV	REFLUX VALVE
RW	RAINWATER

ABBREVIATIONS cont.

RWH	RAIN WATER HEAD
RWO	RAINWATER OUTLET
TWST	TRADE WASTE STACK
TWVP	TRADE WASTE VENT PIPE
TYP	TYPICAL
UIS	UNDERSIDE
UNO	UNLESS NOTED OTHERWISE
UPVC	UNPLASTICISED POLYVINAL CHLORIDE
UR	URINAL
UV	ULTRA VIOLET
VAC	VACUUM LINE
VB	VACUUM BREAKER
VCP	VITRIFIED CLAY PIPE
VP	VENT PIPE
WC	WATER CLOSET
WL	WATER LEVEL
WM	WASHING MACHINE (CLOTHES)
WST	WASTE STACK
WT	WASH TROUGH
WW	WARM WATER
WWF	WARM WATER FLOW
WWR	WARM WATER RETURN
X	REDUNDANT / REMOVE
S/S	STAINLESS STEEL
SDO	SPOON DRAIN OUTLET
SH	SLOP HOPPER
SHR	SHOWER
SIP	SEWER INSPECTION PIT
SK	SINK
SL	SURFACE LEVEL
SMH	SEWER MANHOLE
SO	SYPHONIC OUTLET
SOF	SYPHONIC OVERFLOW
SPD	SPREADER
SPR	SPRINKLER
SQ	SQUARE
SRM	SEWER RISING MAIN
SSD	SUBSOIL DRAINAGE
SSHR	SAFETY SHOWER
SSL	STRUCTURAL SLAB LEVEL
SSRM	SUBSOIL RISING MAIN
SST	SOIL STACK
SSVP	SOIL STACK VENT PIPE
ST	STACK
STD	SPRINKLER TEST DRAIN
SV	STOP VALVE
SW	STORMWATER
SWD	STORMWATER DRAINAGE
SWIP	STORMWATER INSPECTION PIT
SWP	STORMWATER PIT
SWRM	STORMWATER RISING MAIN
SYP	SYPHONIC
TB	THRUST BLOCK
TBR	TO BE REMOVED
TD	TUNDISH
TEL	TELECOMMUNICATION SERVICE
TG	TRENCH GRATE
TLV	TEMPERATURE LIMITING VALVE
TMV	THERMOSTATIC MIXING VALVE
TPRV	TEMPERATURE & PRESSURE RELIEF VALVE
TTD	TRAPPED TUNDISH
TWD	TRADE WASTE DRAINAGE
TWIP	TRADE WASTE INSPECTION PIT
TWRM	TRADE WASTE RISING MAIN

NOTE:
THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED IN THESE DRAWINGS.

DA ISSUE

NORTH

REVISION

ISSUE	AMENDMENT	DATE
01	DA ISSUE	04.05.21

ARCHITECT / PROJECT MANAGER

CLIENT

APOLLO FABRICATION GROUP PTY LTD

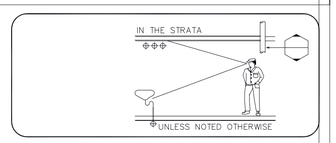
HYDRAULIC & FIRE SERVICES CONSULTANTS
PREPARED BY
ALIGN ENGINEERING GROUP
HYDRAULIC, CIVIL & FIRE CONSULTANTS
PO BOX 8013
PORT MACQUARIE
NSW 2444
T:0403 852 312
Email:alan.thomas.aeg@gmail.com ABN2878949310

PROJECT
10 TELEGRAPH ROAD
YOUNG

PROJECT No.	DATE	DRAWN	No IN SET	SCALE
AEG254	15.02.21	AT	02OF 03	1:100

DRAWING TITLE
HYDRAULIC SERVICES
COVER SHEET &
LEGEND

DRAWING No.	REVISION
H000	01



REFERENCE DRAWINGS			
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MECH	01	P1	03.04.19
ELEC	01	P1	03.04.19
RCP	01	P1	03.04.19
ARCH	01	P1	03.04.19
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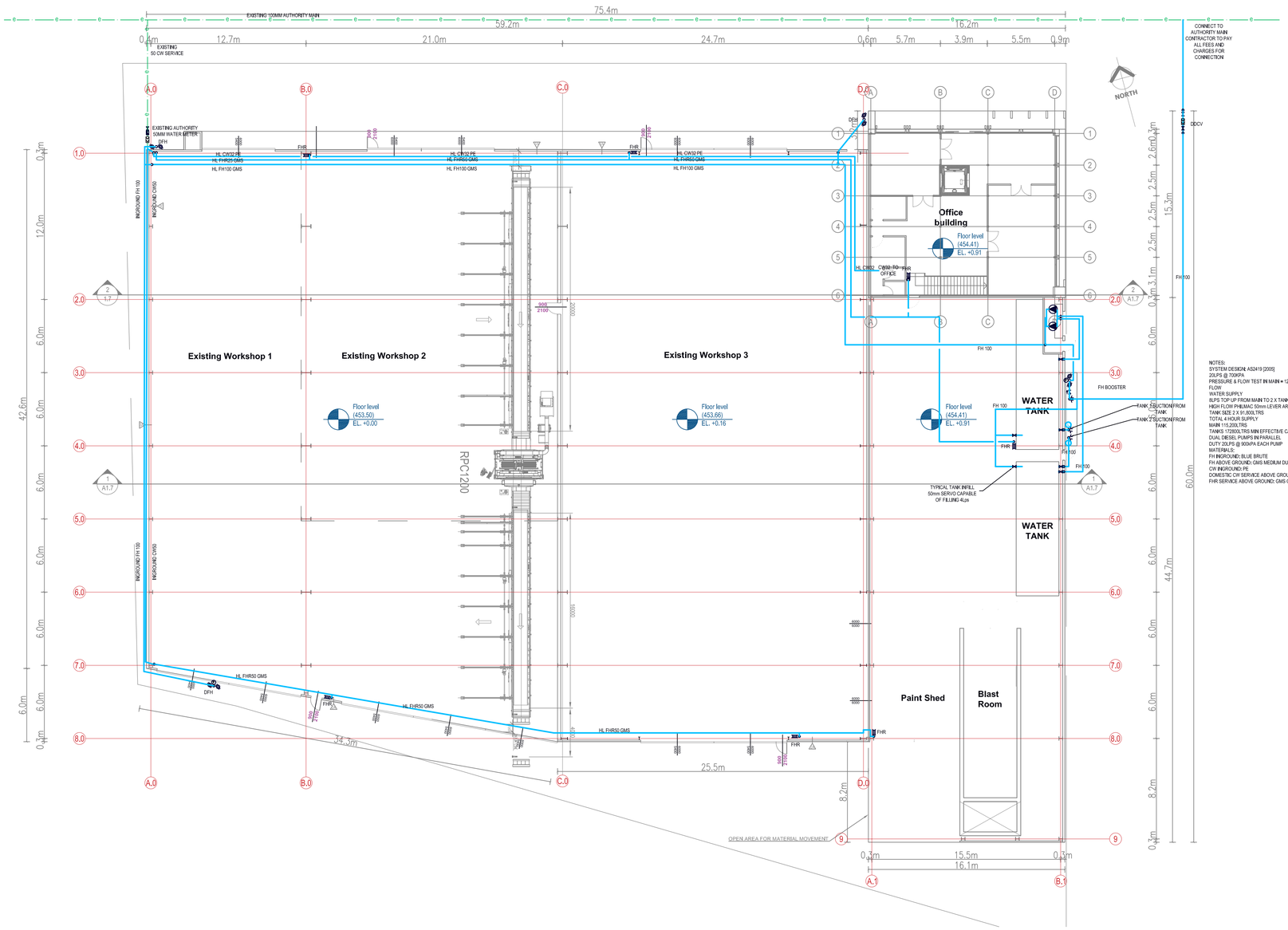

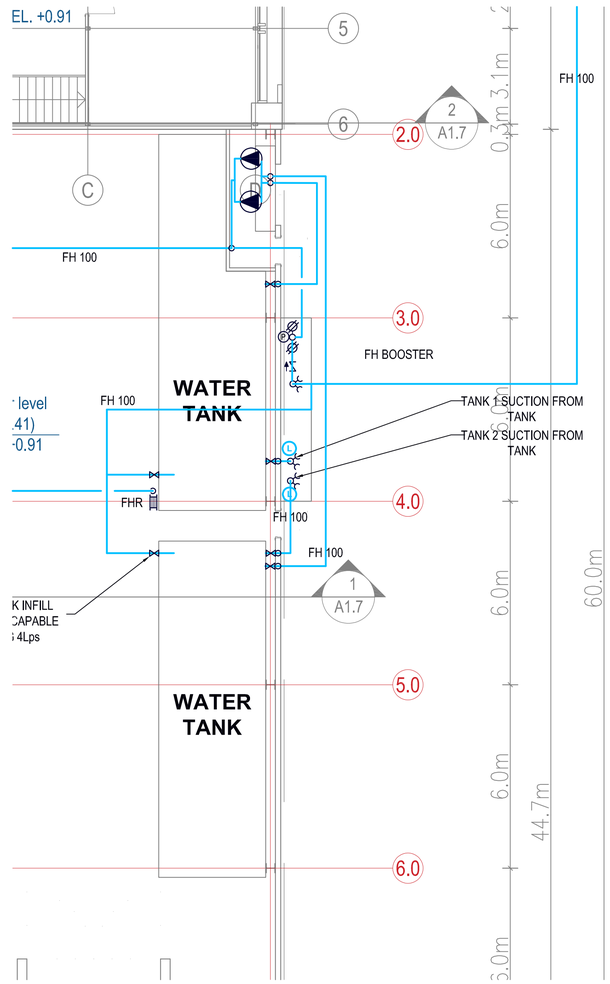

DA ISSUE

NORTH

REVISION

ISSUE	AMENDMENT	DATE
01	DA ISSUE	04.05.21
P1	CLIENT LOCATION REVIEW	15.02.21

ARCHITECT / PROJECT MANAGER

CLIENT

APOLLO FABRICATION GROUP PTY LTD

HYDRAULIC & FIRE SERVICES CONSULTANTS

PREPARED BY

ALIGN ENGINEERING GROUP
HYDRAULIC, CIVIL & FIRE CONSULTANTS
PO BOX 8013
PORT MACQUARIE
NSW 2444
T:0403 852 312
Email:alan.thomas.aeg@gmail.com ABN2878949310

PROJECT

10 TELEGRAPH ROAD
YOUNG

PROJECT No.	DATE	DRAWN	No IN SET	SCALE
AEG254	15.02.21	AT	02OF 03	1:200

DRAWING TITLE

HYDRAULIC SERVICES
GROUND LEVEL
PRESSURE SERVICES

DRAWING No.	REVISION
H201	01