PJ316 - WANGARTTA SPORTS AQUATIC CENTER - CHAIN/ AMENITIES - 41 SCHILLING DR, WANGARATTA VIC

ELECTRICAL SERVICES

SHEET LIST TABLE	
DRAWING NUMBER	SHEET TITLE
PJ316-E000	COVER SHEET& SPECIFICATION
PJ316-E050	SITE PLAN
PJ316-E100	PROPOSED FLOOR PLAN LIGHTING LAYOUT
PJ316-E200	PROPOSED FLOOR PLAN POWER LAYOUT
PJ316-E201	PROPOSED ROOF PLAN POWER LAYOUT
PJ316-E300	PROPOSED FLOOR PLAN FIRE DETECTION LAYOUT

SPECIFICATION

THIS SPECIFICATION, UNLESS SPECIFICALLY STATED OTHERWISE, CALLS FOR THE PROVISION OF SYSTEMS COMPLETE IN EVERY RESPECT, FIT AND READY FOR CONTINUOUS, SAFE, EFFICIENT OPERATION. THE CONTRACTOR SHALL THEREFORE SUPPLY, DELIVER, INSTALL, TEST, COMMISSION AND SET TO WORK THE SYSTEMS AND THEY SHALL BE COMPLETE WITH ALL NECESSARY ANCILLARY AND MINOR ITEMS, WHETHER EXPRESSLY INDICATED ON THE DRAWINGS OR SPECIFICATION OR NOT.

1. PROJECT DESCRIPTION

THE PROJECT CONSISTS OF CONSTRUCTION OF A EXTENDION TO EXISTING SPORT FACILITY.

2. DEFINITION OF TERMS

WHERE THE FOLLOWING TERMS ARE USED THROUGHOUT THE CONTRACT DOCUMENTS, THE TERMS BELOW SHALL BE DEFINED AS FOLLOWS:

PROVIDE: SUPPLY, INSTALL, PROVIDE CONNECTIONS TO, PROVIDE SUPPORTS AND ANCILLARY SYSTEMS TEST, COMMISSION AND WARRANTY.

INCLUDES: INCLUDES BUT MAY NOT BE LIMITED TO.

CODE: THE CURRENT EDITIONS OF ALL RELEVANT AND GOVERNING CODES, STANDARDS, REGULATIONS, GUIDELINES AND BYLAWS

CONSULTANT: OFEK ENGINEERS

APPROVED EQUAL: APPROVED EQUAL: WITH WRITTEN APPROVAL FROM THE CONSULTANT FOR USE INSTEAD OF THE SPECIFIED PRODUCT OR METHOD. TO GAIN WRITTEN APPROVAL, THE CONTRACTOR MAY BE REQUIRED TO SUBMIT SUPPORTING DOCUMENTATION, PRODUCT SAMPLES AND/OR CALCULATIONS.

3. LIGHTING

3.1 PROVIDE NEW LUMINARES AND EMERGENCY AND EXIT LUMINAIRES, ASSOICATED WIRING SUPPORTS. WIRING SHALL BE 2.5MM2 MINIMUM WITH WHITE PVC SHEATH.

4. LIGHTING CONTROL

4.1 ALL NEW LIGHTING SHALL BE CONNECTED TO THE EXISTING DALI/C -BUS LIGHTING CONTROL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY DALI DRIVERS, C-BUS DEVICES, CONTROL CABLING, PROGRAMMING, TESTING, COMMISSIONING, AND ANCILLARY EQUIPMENT REQUIRED TO INTEGRATE THE NEW LIGHTING INTO THE EXISTING LIGHTING CONTROL SYSTEM. COORDINATE ALL CONTROL REQUIREMENTS WITH THE CLIENT AND LIGHTING CONTROL CONTRACTOR PRIOR TO INSTALLATION.

5. EMERGENCY LIGHTING AND EXIT SIGNS

5.1 PROVIDE NEW EMERGENCY AND EXIT LUMINARIES, ASSOCIATED WIRING AND SUPPORTS. WIRING SHALL BE 2.5MM ² MINIMUM WITH WHITE PVC SHEATH.

5.2 EXIT AND EMERGENCY LIGHTING SHALL BE STAND ALONE COMPREHENSIVE SELF-TEST. THE SYSTEM SHALL SELF-TEST EVERY 2 WEEKS FOR ELECTRONIC, DIODE AND BATTERY FUNCTION. EVERY 3 MONTHS A BATTERY HEALTH TEST WILL RUN A CYCLE BY DRAINING THE BATTERY TO 90MINS AND RECHARGING AS STIPULATED UNDER ASNZ2293. THE HEALTH OF THE PRODUCT AND FAULTS, IF ANY, SHALL BE MADE VISIBLE ON THE INDICATOR LIGHT ON THE PRODUCT HOUSING. THE INDICATOR WILL BE ALLOWED TO BE VISIBLE WITH THE INSTALLATION.

5.3 EMERGENCY AND EXIT LIGHTING FIXTURES SHALL BE COMPLETE AS PER THE PROJECT DRAWING. THE PRODUCTS MUST BE COMPLIANT TO ASNZ2293 WITH A MINIMUM BATTERY LIFE OF 120MINS ON SUPPLY. FULL 5 YEAR WARRANTY IS TO BE PROVIDED INCLUDING BATTERY AND DIODE AND ELECTRONICS FROM THE MANUFACTURER. NIMH BATTERIES TO BE PROVIDED FOR ENVIRONMENTAL HEALTH AND PRODUCT STABILITY REDUCING THE RISK OF COMBUSTION.

5.4 MAINTENANCE TESTS WILL BE AVAILABLE FROM THE PRODUCT INDICATORS TO BE REPORTED TO THE EMERGENCY AND EXIT LOG BOOK.

6. POWER

6.1 MODITY EXISTING DISTRIBUTION BOARDS WITH NEW RCD CIRCUIT BREAKERS TO THE DISTRIBUTION BOARD TO ACCOMMODATE NEW LIGHTING AND POWER SUB-CIRCUITS TO SUIT THE FITOUT.

6.2 PROVIDE NEW POWER OUTLETS, ASSOCIATED WIRING AND SUPPORTS. WIRING SHALL BE 2.5MM ² MINIMUM WITH BLACK PVC SHEATH AS SHOWN ON THE DRAWINGS.

6.3 PROVIDE CIRCUIT LABELS AT THE DISTRIBUTION BOARDS AND ON ACTUAL OUTLETS AND SWITCHES. THE LABELS SHALL INDICATE CIRCUIT NUMBERS CORRESPONDING TO THE CIRCUIT BREAKER NUMBERS ON THE SWITCHBOARDS.

6.4 DISCONNECT, REMOVE AND MAKE SAFE ALL REDUNDANT CABLING.

6.5 CONTRACTOR TO BALANCES THE LOAD EQUALLY ACROSS THE THREE PHASES WHEN CARRYING OUT THE INITIAL FITOUT AND, ANY SUBSEQUENT TENANT FITOUT MODIFICATIONS. PRE AND POST FITOUT WORKS READINGS OF THE ELECTRICAL INSTALLATION SHALL BE PROVIDED TO CONFIRM THAT PROPER BALANCING HAS OCCURRED.

7. COMMUNICATIONS SYSTEMS

7.1 PROVIDE NEW CATEGORY 6A CONNECTIVITY STRUCTURED CABLING SYSTEM AND ACHIEVE FULL WARRANTY.

7.2 ALL IT SERVICES WORK TO BE DISCUSSED AND COORIDINATED WITH THE CLIENT BEFORE INSTALLATION TAKE PLACE. THIS IS TO CONFIRM SCOPE OF WORK.

7.3 CONNECTION TO THE EXISTING NBN TO BE PROVIDED FROM THE EXISTING SPORT PAVILION.

8. SECURITY SYSTEM

8.1 PROVIDE NEW SECURITY SYSTEM, ASSOIATED WIRING AND SUPPORTS AS SHOWN ON THE DRAWINGS.

9. FIRE DETECTION OCCUPANT WARNING SYSTEM

9.1 PROVIDE NEW DETECTION OCCUPANT WARNING SYSTEM IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS.

9.2 WITH RELEVANT AUSTRALIAN STANDARDS AND PROVIDE INDEPENDENT CERTIFICATION OF THE WORKS INCLUDING PAYMENT OF COSTS UPON COMPLETION OF WORKS. ALL TESTS RESULTS TO BE SUBMITTED CARRY OUT ALL SYSTEM TESTS AND COMMISSINING IN ACCORDANCE TOGETHER WITH "AS INSTALLED" DRAWINGS.

9.3 ANY TIME A MINIMUM OF 75DBA IS TO BE ACHIEVED THROUGHOUT A SOUND PRESSURE OF 10 DBA ABOVE THE AMBIENT LEVEL AND AT THE BUILDING.

10. GENERAL REQUIREMENTS OF CONTRACT

10.1 PRIOR TO COMMENCING WORKS ON SITE, REVIEW THE EXISTING SITE CONDITIONS TO ESTABLISH BUILDING ACCESS PROVISIONS, CEILING CLEARANCES AND RESTRICTIONS WHICH WILL IMPACT ON THE DESIGN OF THE WORKS, CAPACITY OF EXISTING POWER SUPPLY FOR ELECTRICAL SERVICES PLANT WHICH WILL BE RETAINED AND FOR ANY NEW PLANT TO BE INSTALLED.

10.2 THE SUB-TRADE CONTRACTOR SHALL FORWARD ALL RELEVANT NOTICES, ARRANGE FOR INSPECTIONS AND PAY ALL FEES TO THE ELECTRICAL INSPECTORS AS REQUIRED IN CONNECTION WITH THIS CONTRACT.

10.3 THE INSTALLATION SHALL COMPLY WITH THE FOLLOWING STANDARDS:

AS/NZS 3000 - WIRING RULES
AS 3008.1 -CABLES FOR ALTERNATING VOLTAGES
AS 3439.1 - LOW VOLTAGE SWITCH GEAR AND CONTROL GEAR ASSEMBLIES
AS 1680: INTERIOR LIGHTING - PARTS 1 , 2 , 2.1 , 2.2 ,2.3
AS/NZ 2293: EMERGENCY EVACUATION LIGHTING FOR BUILDINGS
AS/NZS 1670: FIRE DETECTION AND WARNING SYSTEM
NATIONAL CONSTRUCTION CODE 2018
HEALTH DEPARTMENT REGULATIONS
FIRE AUTHORITY REQUIREMENTS
VICTORIAN SERVICE & INSTALLATION RULES

10.4 NOISY WORKS ARE TO BE UNDERTAKEN OUT OF NORMAL WORKING HOURS TO AVOID DISRUPTION TO OTHER AREAS OR AS AGREED WITH THE TENANT.

10.5 TESTING, COMMISSIONING, MAINTENANCE AND DEFECTS LIABILITY FOR THE COMPLETED WORK. THIS SHALL INCLUDE:

DEFECTS LIABILITY FOR 52 WEEKS FROM DATE OF PRACTICAL COMPLETION
FULL MAINTENANCE DURING THE DEFECTS LIABILITY PERIOD.

10.6 AT THE COMPLETION OF THE PROJECT THE ELECTRICAL CONTRACTOR UNDERTAKE A DETAILED INSPECTION OF THE INSTALLATION TO ENSURE COMPLIANCE WITH THE REGULATIONS.

THE INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 8 OF AS/NZS 3000 AND SHALL INCLUDE THE FOLLOWING:

VISUAL INSPECTION
CONTINUITY AND RESISTANCE OF THE EARTHING SYSTEM
CONTINUITY OF CONDUCTORS
INSULATION RESISTANCE
POLARITY
CORRECT CIRCUIT CONNECTIONS
SWITCHING
LOADING OF CIRCUITS
RCD TEST AS APPLICABLE

A REPORT INCLUDING ALL TEST RESULTS, IN AN APPROVED FORMAT, SHALL BE SUBMITTED TO THE CONSULTING ENGINEER BEFORE PRACTICAL COMPLETION. THREE COPIES OF THE REPORT SHALL BE SUPPLIED WITH THE MAINTENANCE MANUALS.

ALLOW ALL COSTS ASSOCIATED WITH THIS INSPECTION AND REPORT.

10.7 ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, THIS SPECIFICATION AND OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.

10.8 IF ANY DISCREPANCY OCCURS ON THE CONSULTANTS DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATION, THE CONTRACTOR DURING TENDER SHALL ASSUME LARGER / GREATER QUANTITY / COST. ANY DISCREPANCY SHALL BE REFERRED TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORKS.

10.9 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT AUSTRALIAN STANDARDS AND CODES INCLUDING ALL REVISIONS, AND THE BYLAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.

10.10 ALL DIMENSIONS SHOWN SHALL BE VERIFIED ON SITE. CONSULTANTS DRAWINGS MUST NOT BE SCALED.

10.11 THE CONTRACTOR SHALL VISIT THE SITE TO ASCERTAIN THE TRUE NATURE OF WORKS. ANY UNCLEAR ISSUES SHALL BE CLARIFIED WITH THE CONSULTANTS. NO CLAIM SHALL BE ALLOWED FOR EXTRAS WHICH MAY ARISE THROUGH NEGLECT OF THIS ADVICE.

10.12 THE CONTRACTOR SHALL PAY ANY/ALL ASSOCIATED AUTHORITY FEES FOR THIS PROJECT.

10.13 THE WORKS SHALL BE CAREFULLY EXECUTED TO MINIMISE DISRUPTION TO OPERATION OF THE PREMISE. ALL PROPOSED INTERRUPTION OF POWER SHALL BE FULLY CO-ORDINATED WITH THE PROJECT MANAGER IN ADVANCE WITH A MINIMUM ONE-WEEK NOTICE.

10.14 ALL EQUIPMENT SHALL BE ORDERED IN ADEQUATE TIME TO MEET THE CONSTRUCTION PROGRAM.

10.15 PROVIDE OF 4 SETS OPERATION AND MAINTENANCE MANUALS INCLUDING"AS INSTALLED " DRAWINGS IN HARD COPIES AND AUTOCAD FORMAT.

11. SHOP DRAWINGS

11.1 PROVIDE SHOP DRAWINGS FOR ALL NEW LUMINAIRES, MOTION DETECTORS, EXIT AND EMERGENCY LUMINAIRES, SECURITY DEVICES, FIRE DETECTION, WARNING AND INTERCOM DEVICES.

11.2 SHOP DRAWINGS SHALL BE PROVIDED IN A TIMELY MANNER WITH ADEQUATE TIME ALLOWED IN THE OVERALL PROGRAM FOR SHOP DRAWINGS REJECTED FOR RE-SUBMISSION.

12. "AS INSTALLED " DRAWINGS

12.1 TO ENSURE THAT THE PRINCIPAL'S REQUIREMENTS ARE ACHIEVED, A DEDICATED SET OF WORKING DRAWINGS SHALL BE KEPT ON SITE FOR PROGRESSIVE MARKING UP OF "AS INSTALLED " DETAILS BY THE CONTRACTOR'S SITE PERSONNEL. THE SUPERINTENDENT OR CONSULTANT MAY INSPECT THESE DRAWINGS DURING THE PROGRESS OF THE WORKS TO ENSURE THAT ON-SITE MODIFICATIONS ARE BEING ACCURATELY RECORDED.

12.2 DURING THE PROGRESS OF THE WORK, THE CONTRACTOR SHALL EMPLOY A COMPETENT DRAFTPERSON TO PROGRESSIVELY RECORD THE MODIFICATIONS ON THE WORKING DRAWINGS IN THE APPROVED ELECTRONIC FORMAT.

12.3 INFORMATION ON"AS INSTALLED " DRAWINGS SHALL INCLUDE BUT NOT LIMITED TO LAYOUTS, SINGLE LINE AND WIRING DIAGRAMS, EQUIPMENT SCHEDULES, CABLE TRAY AND CONDUIT RUNS REGARDING THE ACTUAL INSTALLATION.

12.4 PRIOR TO OR WITHIN ONE CALENDAR WEEK OF "PRACTICAL COMPLETION" BEING ACHIEVED, THE CONTRACTOR SHALL PROVIDE "AS INSTALLED " DRAWINGS FOR THE WORKS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL PROVIDE FOUR SETS OF HARD COPIES AND ELECTRONIC FILES ON CD-ROM TO THE PRINCIPAL WITHIN TWO WEEKS OF RECEIVING APPROVAL FROM THE SUPERINTENDENT OR THE CONSULTANT. FINAL PAYMENT OF THE CONTRACT SUM WILL NOT OCCUR UNTIL THIS REQUIREMENT IS FULFILLED.

12.5 THE CONTRACTOR SHALL RETAIN ONE SET OF THE "AS INSTALLED " DOCUMENT FOR USE BY THEM DURING THE DEFECT LIABILITY PERIOD.

Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	28/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

COVER SHEET & SPECIFICATION

Scale	N.T.S @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	**E000**	**T2**

Status

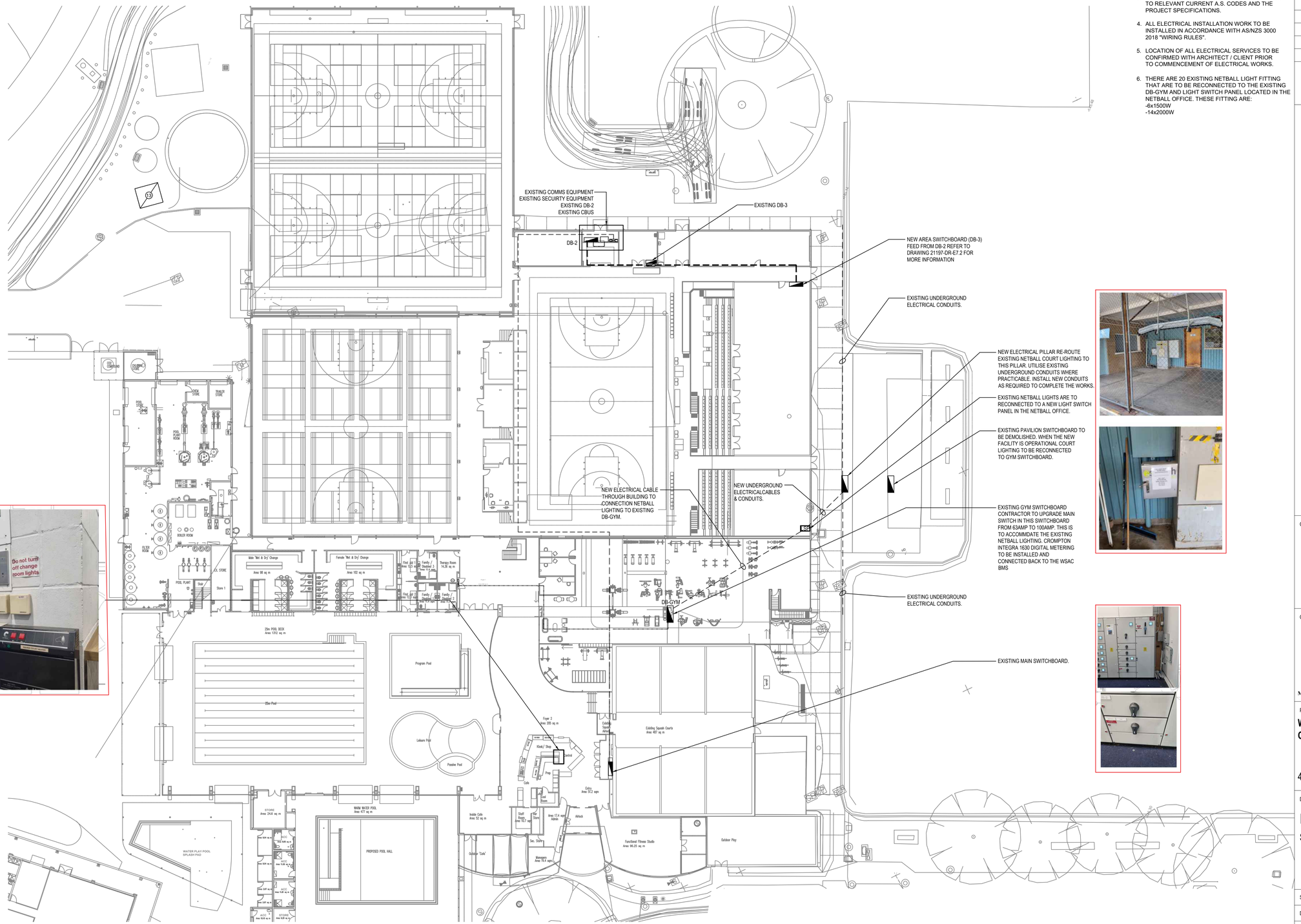
PRE TENDER ISSUE

Sheet No. - of -

© Ofek A1

GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.
3. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.
4. ALL ELECTRICAL INSTALLATION WORK TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000 2018 "WIRING RULES".
5. LOCATION OF ALL ELECTRICAL SERVICES TO BE CONFIRMED WITH ARCHITECT / CLIENT PRIOR TO COMMENCEMENT OF ELECTRICAL WORKS.
6. THERE ARE 20 EXISTING NETBALL LIGHT FITTING THAT ARE TO BE RECONNECTED TO THE EXISTING DB-GYM AND LIGHT SWITCH PANEL LOCATED IN THE NETBALL OFFICE. THESE FITTING ARE:
   -6x1500W
   -14x2000W



Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	28/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

SITE PLAN

Scale	N.T.S @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	**E050**	**T2**

Status

PRE TENDER ISSUE

Sheet No. - of -

© Ofek A1

LIGHTING TABLE

TYPE	SUPPLIER	MODEL	DESCRIPTION	FINISH	CCT	POWER	OUTPUT	EFFICACY	IP RATING	IK RATNG	SDCM	DIMMING	IMAGE
L1	BLUELAB	22W PCB	SURFACE MOUNTED BATTEN	WHITE	-	22 W	-	-	IP65	-	-	DALI/CBUS	
L2	BLUELAB	U2B-M110-840-025S	RECESSED KITCHEN LIGHT.	WHITE	4000K	10W	-	-	IP65	IK07	-	DALI/CBUS	
L3	BLUELAB	U2312R1/NLDT1	PMMA MICROPRISM DIFFUSER WIDE ANGLE BEAM	WHITE	4000K	27W	3250	-	IP44	-	-	DALI/CBUS	
L4	BLUELAB	HUSKY	SURFACE MOUNTED WEATHER PROOF BATTEN	WHITE	-	-	-	-	IP65	IK08	-	DALI/CBUS	
D1	BLUELAB	SAAW0812-10	COB LED RECESSED WHITE DOWNLIGHT WITH REMOTE DRIVER	WHITE	4000K	10W	3250	-	IP44	-	-	DALI/CBUS	
D2	BLUELAB	SAAW081265-10	COB LED RECESSED WHITE DOWNLIGHT WITH REMOTE DRIVER	WHITE	4000K	10W	2500	-	IP65	IK07	-	DALI/CBUS	
D3	BLUELAB	WHAW1010 10	SURFACE MOUNTED DOWN LIGHT, WHITE fINISH 60 DEGREE BEAM INTEGRAL DRIVER	WHITE	4000K	10W	-	-	IP65	IK07	-	DALI/CBUS	
EM1	BLUELAB	K1R222	RECESSED EMERGENCY WITH ELONGATED OPTICS C0:C90 D800:A25, EST+ SELF-TESTING AND DIAGNOSING SYSTEM.	WHITE	4000K	2.8 W	-	2.8 W	IP42	IK04	>3	-	
EM2	BLUELAB	K1R212	RECESSED EMERGENCY WITH ANTI-PANIC OPTICS C0:C90 A630:A630, EST+ SELF TESTING AND DIAGNOSING SYSTEM	WHITE	4000K	2.8 W	-	2.8 W	IP42	IK04	>3	-	
EX1	BLUELAB	K1R142/A	ETAP K1 UNIVERSALLY MOUNTED EXIT	WHITE WITH GREEN SIGN	4000K	0.9 W	-	0.9 W	IP42	IK04	>3	-	
EX	EXISTING 1200 mm BATTENS												

GENERAL NOTES:

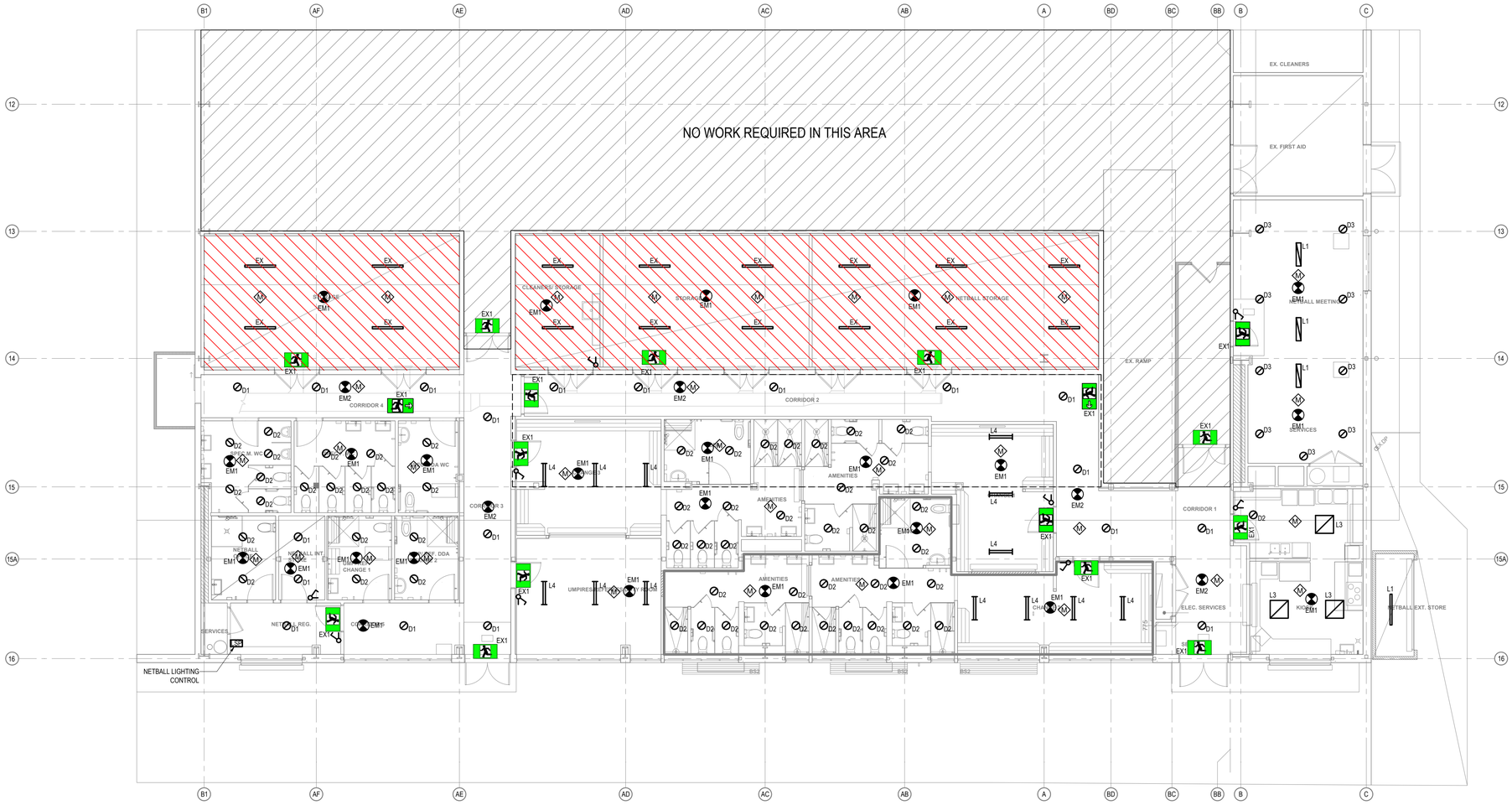
1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.
3. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.
4. ALL ELECTRICAL INSTALLATION WORK TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000 2018 "WIRING RULES".
5. LOCATION OF ALL ELECTRICAL SERVICES TO BE CONFIRMED WITH ARCHITECT / CLIENT PRIOR TO COMMENCEMENT OF ELECTRICAL WORKS.
6. ALL OUTDOOR LIGHTING TO BE CONNECTED TO PE CELL AND TURN ON/OFF WITH DAYLIGHT. PROVIDE TIME SWITCH TO ALL EXTERNAL LIGHTING TO SWITCH ON FROM 6PM TO 7AM WITH DAYLIGHT SENSOR.
7. ALL LIGHT SWITCH SENSORS SHALL NOT OVERRIDE LIGHT SENSORS.
8. TIME SETTING FOR ALL PIR PRESENCE DETECTOR SENSORS EXCEPTION IN AMENTIES AT MINIMUM 10 MINUTES. AMENTIES AREAS ARE TO BE AT A MINMUM OF 30 MINUTES.
9. LIGHT SWITCHES IN ACCESSIBLE WCS ARE TO BE LARGE ROCKER OR TOGGLE SWITCHES WHICH ARE MIN 30x30mm OR MIN 25mm FOR PUSH PAD SWITCHES.

LEGEND

- EXISTING LIGHT FITTING TO BE REUSED AND ADJUSTED TO SUIT NEW STORE LAYOUTS.
- NO WORK REQUIRED IN THIS AREA
- EXISTING LIGHT FITTING IN THIS AREA TO BE REUSE.

NOTES:

APPROX. 14 x 1200 LONG LED EXISTING BATTEN LIGHTS UNDER GRANDSTAND . TO BE RESED AND RELOCATED TO NEW STORE LAYOUT.



Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	28/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

PROPOSED FLOOR PLAN LIGHTING LAYOUT

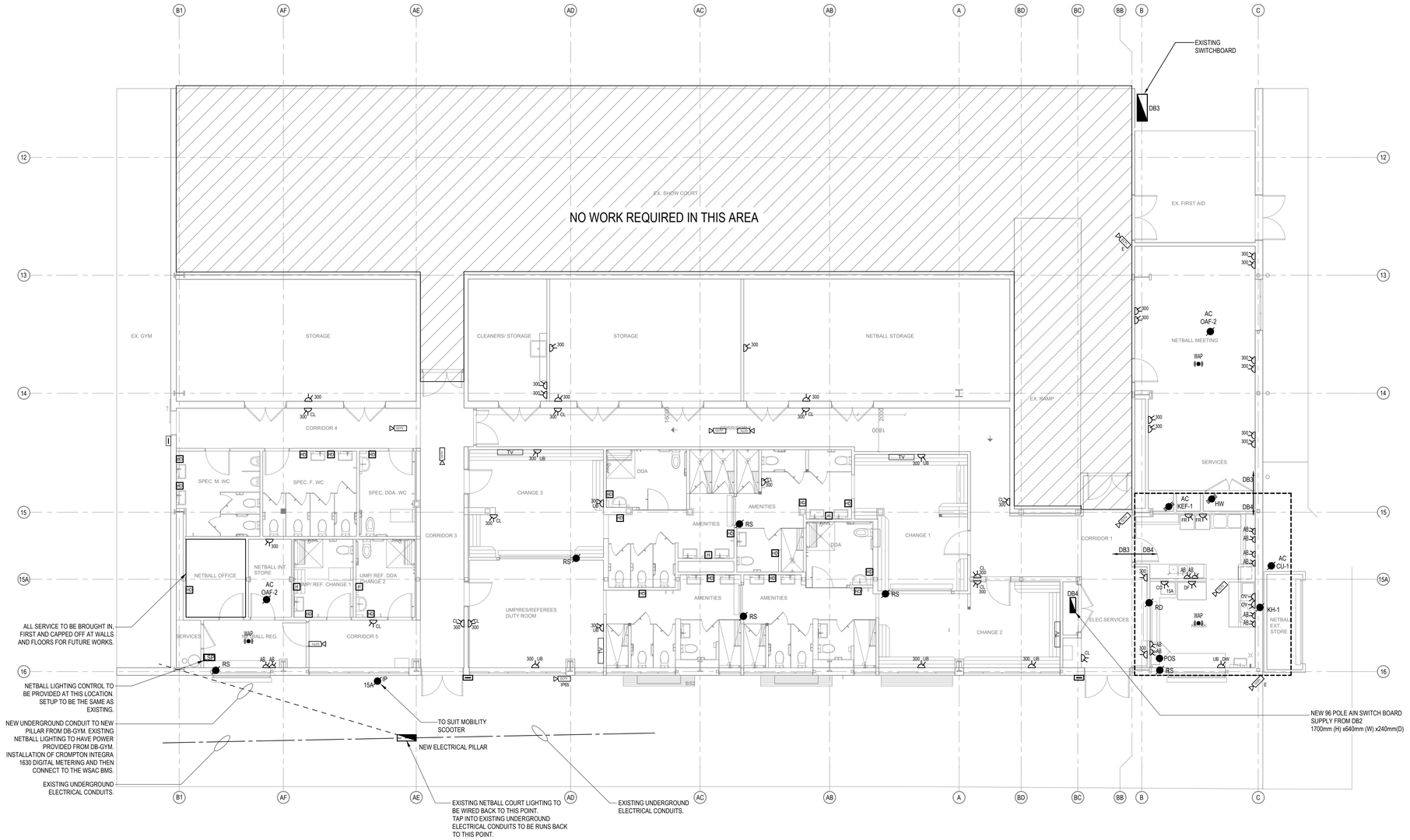
Scale	1 : 100 @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR
Project No.	PJ316	Drawing No.	E100
Revision	T2		

Status

PRE TENDER ISSUE

Sheet No. - of -

© Ofek A1



GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.
3. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.
4. ALL ELECTRICAL INSTALLATION WORK TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000 2018 "WIRING RULES".
5. LOCATION OF ALL ELECTRICAL SERVICES TO BE CONFIRMED WITH ARCHITECT / CLIENT PRIOR TO COMMENCEMENT OF ELECTRICAL WORKS.
6. ELECTRICAL CONTRACTOR TO PROVIDE SECURITY CONTRACTOR WITH ELECTRICAL NEEDS.
7. PROVIDE ALL SWITCHES AND CONTROLS AT 900-1100mm AFFL AND NO LESS THAN 500mm FOR INTERNAL CORNERS.
8. WHERE PROVIDED, THE GPOS IN ACCESSIBLE SANITARY FACILITIES MUST BE 600-1100mm AFFL AND NO LESS THAN 500mm FROM AN INTERNAL CORNER.
9. ELECTRICAL CONTRACTOR TO WORK WITH MECHANICAL AND HYDRAULIC TO ENSURE THAT ALL EQUIPMENT IS SUPPLIED.
10. PREFERRED CONTRACT FOR THE SECURITY SYSTEM IS:
    Security 1 Solutions Pty Ltd.
    1/4 Pressnell Ln, Wodonga VIC 3690. Australia. PO Box 337, VIC 3689, Australia.
    Contact Richard Hall.
11. THE BUILDER/CONTRACTOR IS TO ALLOW FOR A MINIMUM OF 5x600mm CEILING ACCESS PANEL AND REPAINT CEILING TO PROVIDE OR ASSIST WITH CABLE RUNS FROM DB-3 THE NEW WORKS.

NOTES:

1. WILL ADD MECHANICAL AND HYDRAULIC EQUIPMENT WHEN FINALISED .
2. CONFIRM DATA REQUIREMENTS .
3. CONFIRM LOCATION EXISTING SERVER OR LOCATION OF EXISTING.

LEGEND:

- CEILING - DOUBLE DATA OUTLET / AP - CEILING
- CCTV - SINGLE DATA CCTV. NOTE: SINGLE DATA FOR CCTV TO BE FITTED OFF IN SOFFIT WITH SOFFIT BLANKING PLATE FOR FUTURE INSTALLATION.
- TV - TV LOCATION. SUPPLY 2xDGPO AND 2XDATA.
- HD - HAND DRYER.
- H - HAND DRYER. NO MORE THAN 2 PER CIRCUIT.
- SECURITY CARD READER.
- 1-WAY LIGHT SWITCH.
- POINT OF SALE (2xDGPO AND 2xDATA)
- RS - ISOLATOR TO SUIT ROLL SHUTTERS.
- X - DOUBLE GPO (X IS THE DISTANCE FROM FLOOR. ALL LOCATION AND HEIGHTS TO BE CONFIRMED ONSITE.)
- AUDIO DATA OUTLETS
- B - BLUETOOTH WALL PANEL. SEE DETAIL.
- WAP - ROOF MOUNTED WIFI ROUTER
- NO WORK REQUIRED IN THIS AREA

ABBREVIATION

AB	-	ABOVE BENCH
DB	-	DISTRIBUTION BOARD
UB	-	UNDER BENCH
FR	-	FREEZER OR FRIDGE
HW	-	HOT WATER
EX	-	EXHAUST
USB	-	POWER OUTLET TO BE PROVIDED WITH USB PORT.
CM	-	COFFEE MACHINE
OG	-	COFFEE GRINDER
OV	-	COMBI OVEN
RS	-	ROLLER SHUTTER
CL	-	CLEANERS OUTLET
RH	-	RANGE HOOD
PS	-	PROTECTOR SCREEN
E	-	EXISTING
IPXX	-	IP RATING
POS	-	POINT OF SALE

Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	28/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

PROPOSED FLOOR PLAN POWER LAYOUT

Scale	1 : 100 @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	E200	T2

Status

PRE TENDER ISSUE

Sheet No. - of -

© Ofek A1

GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.
3. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.
4. ALL ELECTRICAL INSTALLATION WORK TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000:2018 "WIRING RULES".
5. LOCATION OF ALL ELECTRICAL SERVICES TO BE CONFIRMED WITH ARCHITECT / CLIENT PRIOR TO COMMENCEMENT OF ELECTRICAL WORKS.
6. ELECTRICAL CONTRACTOR TO PROVIDE SECURITY CONTRACTOR WITH ELECTRICAL NEEDS.
7. PROVIDE ALL SWITCHES AND CONTROLS AT 900-1100mm AFFL AND NO LESS THAN 500mm FOR INTERNAL CORNERS.
8. WHERE PROVIDED, THE GPOS IN ACCESSIBLE SANITARY FACILITIES MUST BE 600-1100mm AFFL AND NO LESS THAN 500mm FROM AN INTERNAL CORNER.
9. ELECTRICAL CONTRACTOR TO WORK WITH MECHANICAL AND HYDRAULIC TO ENSURE THAT ALL EQUIPMENT IS SUPPLIED.
10. PREFERRED CONTRACT FOR THE SECURITY SYSTEM IS:
    Security 1 Solutions Pty Ltd.
    1/4 Pressnell Ln, Wodonga VIC 3690. Australia. PO Box 337, VIC 3689, Australia.
    Contact Richard Hall.

NOTES:

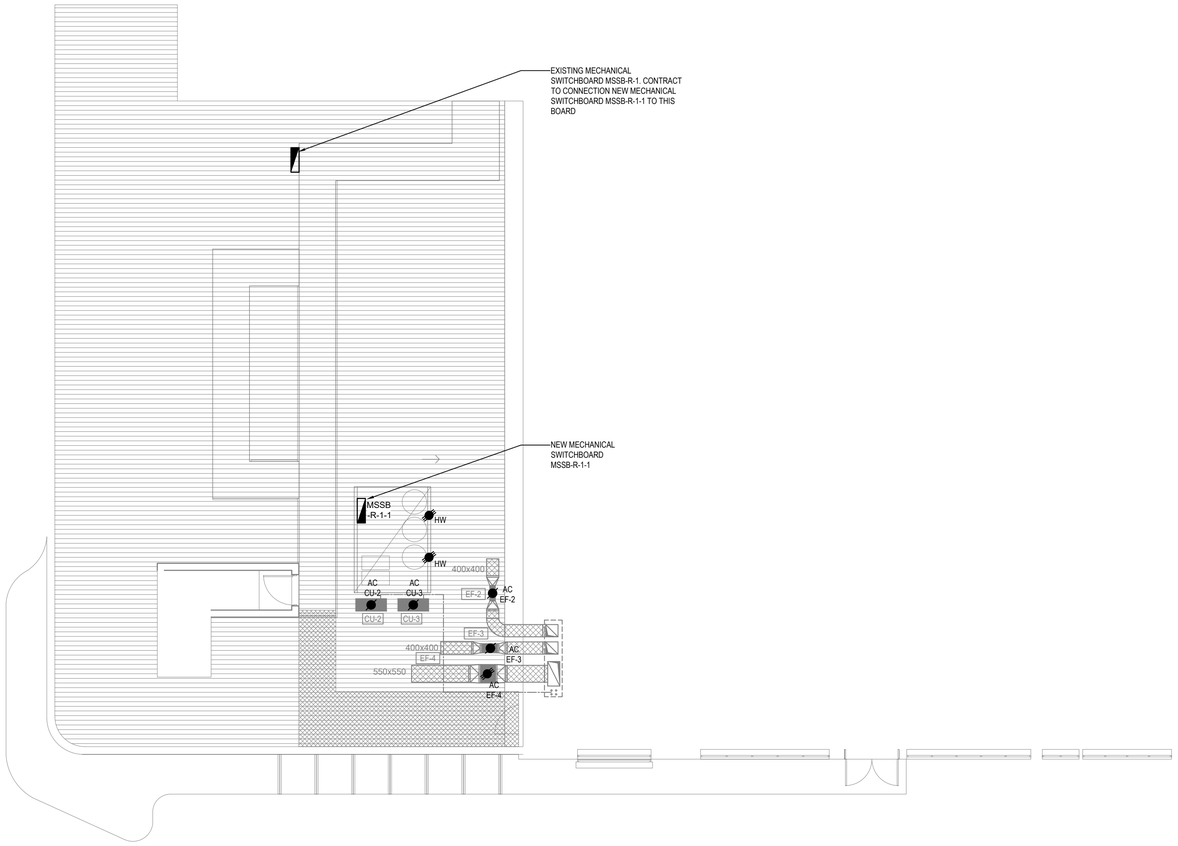
1. WILL ADD MECHANICAL AND HYDRAULIC EQUIPMENT WHEN FINALISED .
2. CONFIRM DATA REQUIREMENTS .
3. CONFIRM LOCATION EXISTING SERVER OR LOCATION OF EXISTING.

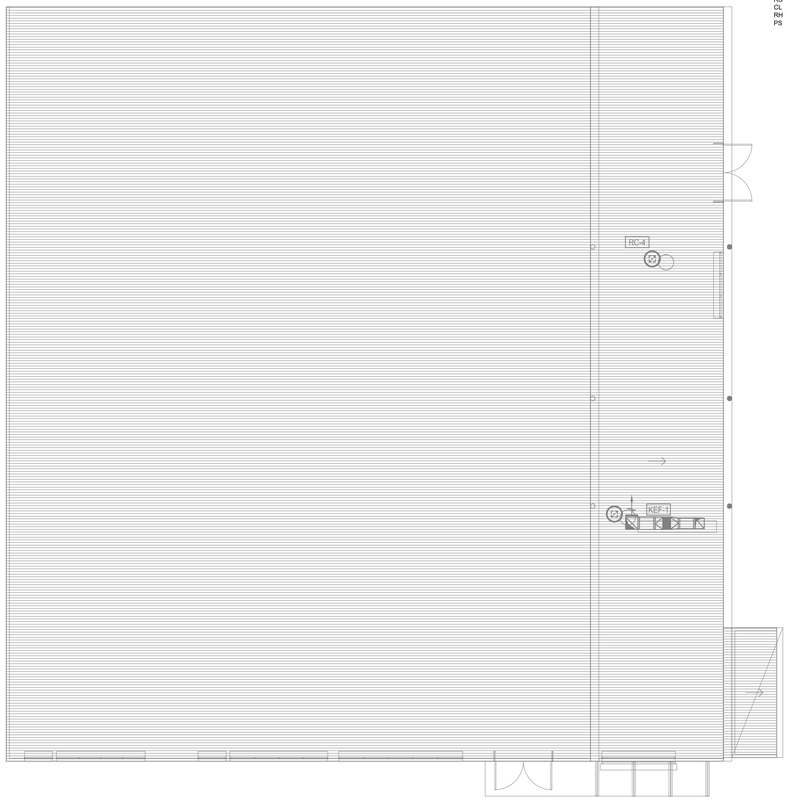
LEGEND:

- CEILING - DOUBLE DATA OUTLET / AP - CEILING
- SDV - SINGLE DATA CCTV. NOTE: SINGLE DATA FOR CCTV TO BE FITTED OFF IN SOFFIT WITH SOFFIT BLANKING PLATE FOR FUTURE INSTALLATION.
- TV - TV LOCATION. SUPPLY 2xDGPO AND 2XDATA.
- HD - HAND DRYER. NO MORE THAN 2 PER CIRCUIT.
- SECURITY CARD READER.
- 1-WAY LIGHT SWITCH.
- RS - ISOLATOR TO SUIT ROLL SHUTTERS.
- X - DOUBLE GPO (X IS THE DISTANCE FROM FLOOR. ALL LOCATION AND HEIGHTS TO BE CONFIRMED ONSITE.)
- AUDIO DATA OUTLETS
- BLUETOOTH WALL PANEL. SEE DETAIL.
- WAP - ROOF MOUNTED WIFI ROUTER
- NO WORK REQUIRED IN THIS AREA

ABBREVIATION

AB	-	ABOVE BENCH
DB	-	DISTRIBUTION BOARD
UB	-	UNDER BENCH
FR	-	FREEZER OR FRIDGE
HW	-	HOT WATER
EX	-	EXHAUST
USB	-	POWER OUTLET TO BE PROVIDED WITH USB PORT.
CM	-	COFFEE MACHINE
OG	-	COFFEE GRINDER
OV	-	COMBI OVEN
RS	-	ROLLER SHUTTER
CL	-	CLEANERS OUTLET
RH	-	RANGE HOOD
PS	-	PROTECTOR SCREEN





Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	28/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

PROPOSED ROOF PLAN POWER LAYOUT

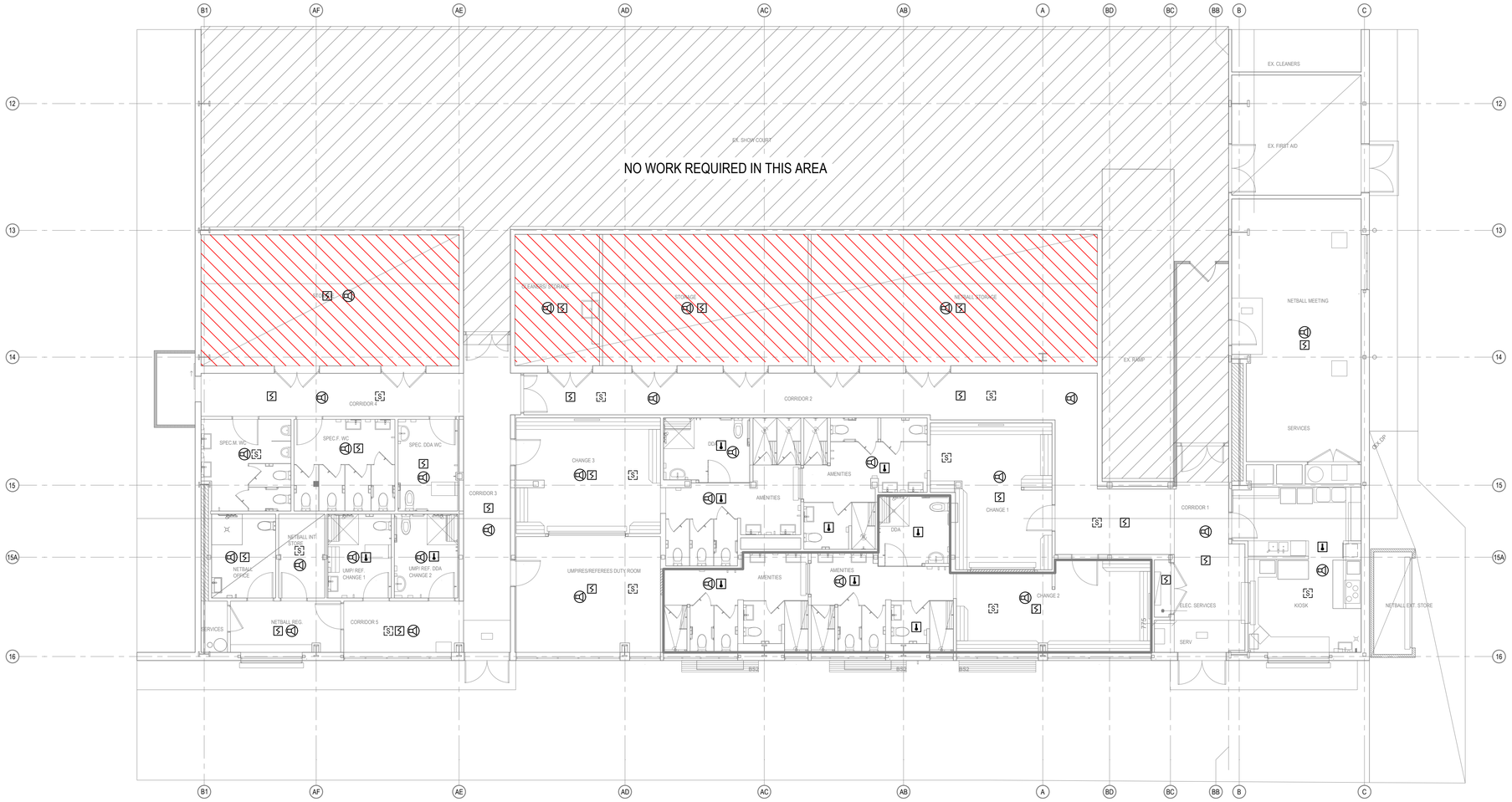
Scale	1 : 100 @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	E201	T2

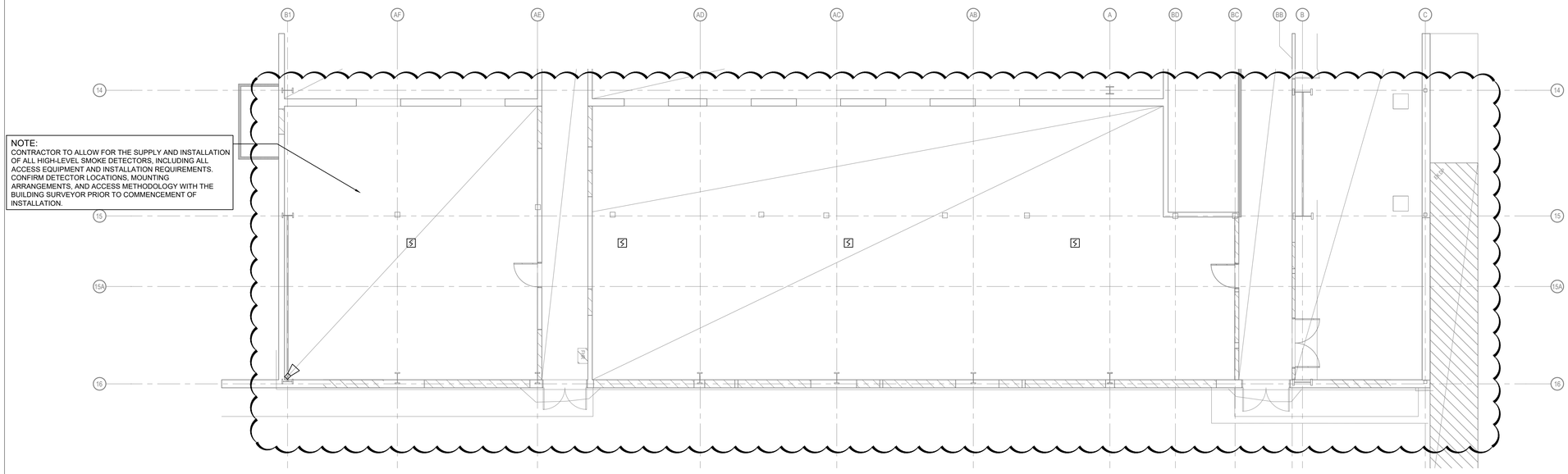
Status
PRE TENDER ISSUE

Sheet No. - of -

© Ofek A1



GROUND FLOOR PLAN



NOTE:
CONTRACTOR TO ALLOW FOR THE SUPPLY AND INSTALLATION OF ALL HIGH-LEVEL SMOKE DETECTORS, INCLUDING ALL ACCESS EQUIPMENT AND INSTALLATION REQUIREMENTS. CONFIRM DETECTOR LOCATIONS, MOUNTING ARRANGEMENTS, AND ACCESS METHODOLOGY WITH THE BUILDING SURVEYOR PRIOR TO COMMENCEMENT OF INSTALLATION.

FIRST FLOOR PLAN

GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.
3. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.
4. ALL FIRE INSTALLATION WORK TO BE INSTALLED IN ACCORDANCE WITH AS/NZS 3000 2018 "WIRING RULES".
5. LOCATION OF ALL FIRE SERVICES TO BE CONFIRMED WITH ARCHITECT / CLIENT PRIOR TO COMMENCEMENT OF FIRE WORKS.
6. TIME SETTING FOR ALL PIR PRESENCE DETECTOR SENSORS EXCEPTION IN AMENTIES AT MINIMUM 10 MINUTES. AMENTIES AREAS ARE TO BE AT A MINIMUM OF 30 MINUTES.
7. PREFERRED CONTRACT FOR THE DRY FIRE SYSTEM IS:
   Wormald Pty Ltd.
   Unit 2A, 39 Bennu Circuit, Albury NSW 2640
   www.wormald.com.au.
8. CONTRACTOR TO ALLOW FOR 5 ADDITIONAL SMOKE AND/OR HEAT DETECTOR. ANY LEFTOVER SMOKE AND/OR HEAT DETECTORS ARE TO BE PROVIDED TO THE CLINT FOR SPARES.

LEGEND:

- HEAT DETECTOR
- SMOKE DETECTOR
- INCEILING SMOKE DETECTOR
- EWIS SPECKER
- EWIS SOUNDER
- EXISTING FIRE DETECTORS AND ALIKE IN THESE AREA ARE TO BE REUSE.
- NO WORK REQUIRED IN THIS AREA

Rev	Date	Amendment Description	By	Chk
A	27/01/26	PRELIMINARY ISSUE	AH	BA
B	11/05/26	PRE TENDER ISSUE	AH	BA
T1	29/05/26	TENDER ISSUE	AH	BA
T2	24/06/26	TENDER ISSUE	AH	BA

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

ELECTRICAL SERVICES

PROPOSED FLOOR PLAN FIRE DETECTION LAYOUT

Scale	1 : 100 @ A1	Checked	HR
Date	24/06/2026	Approved	HR
Drawn	BA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	E300	T2

Status
TENDER ISSUE

Sheet No. - of -

© Ofek A1

PJ316 -WANGARATTA CHANGE ROOMS, 41 SCHILLING DRV, WANGARATTA, VIC 3677

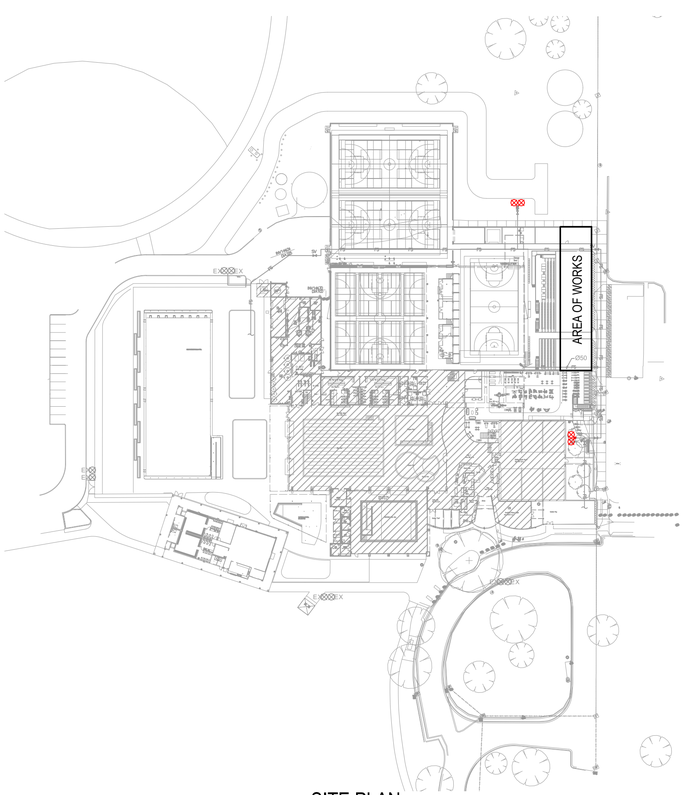
HYDRAULIC SERVICES

LINETYPES

EXISTING SITE SEWER DRAIN	S
EXISTING SITE WATER SERVICE	W
EXISTING SITE FIRE SERVICE	ExFS
ABOLISH Ex SERVICE	X
PROPOSED SEWER	
PROPOSED GREASY DRAIN	Gr
PROPOSED VENT	
PROPOSED GREASY VENT	GrV
PROPOSED COLD WATER	
PROPOSED HOT WATER	
PROPOSED TEMPERED WATER	
PROPOSED FIRE SERVICE	

SYMBOLS

BACKFLOW PREVENTION DEVICE	
CHECK VALVE	
FIRE EXTINGUISHER	40BE DRY CHEM
FIRE HOSE REEL (NEW / Ex TO BE DEMOLISHED)	
FIRE HYDRANT	
FLOOR WASTE GULLY	G
HOSE TAP	HT
INSPECTION OPENING TO SURFACE	
ISOLATION VALVE	
ISOLATION VALVE IN CAST IRON BOX	
PUMP	
TEMPERING VALVE	T
THERMOSTATIC MIXING VALVE	TMV
TRAP PRIMER	TP
TUNDISH	



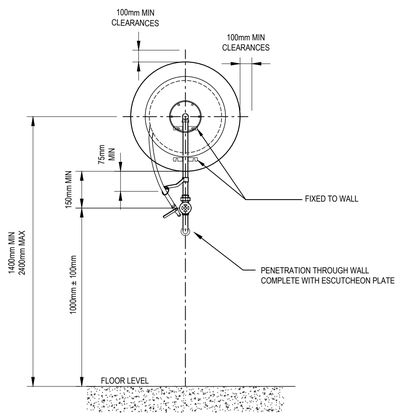
SITE PLAN
SCALE 1:1000

GENERAL NOTES:

1. CONTRACTOR SHALL LODGE ALL APPLICATIONS IN ORDER TO OBTAIN ALL NECESSARY APPROVALS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE RELEVANT AUTHORITIES RELATING TO THE HYDRAULICS & FIRE SERVICES PRIOR TO COMMENCING WORK ON SITE.
2. Ex SITE WATER AND SEWER DRAINS ARE LOCATED IN AREA OF WORKS. INCLUDE INVESTIGATIONS TO CONFIRM DEPTH CONDITION AND LOCATION OF SERVICE PRIOR TO ANY WORKS.
3. Ex FIRE SERVICE SUPPLY IS ASSUMED TO BE SUITABLE BASED ON Ex INFORMATION. CONTRACTOR SHALL INCLUDE INVESTIGATION OF Ex FIRE SERVICE DIAMETER & PIPE PROVING TO IDENTIFY ITS LOCATION INCLUDING IDENTIFYING THE NEAREST FIRE HYDRANTS. THESE FIRE HYDRANTS SHALL BE TESTED BY AN APPROVED FIRE TESTER TO CONFIRM PRESSURES AND FLOWS. LOCATIONS TO THESE FIRE HYDRANTS SHALL BE PRESENTED AND CONFIRMED TO BE SUITABLE.
4. THE DRAWINGS FOR THESE SERVICES ARE DIAGRAMMATIC ONLY AND DO NOT PURPORT TO SHOW ALL FITTINGS OFFSETS OR OTHER DETAILS AS NECESSARY FOR THE COMPLETE INSTALLATION OF THE SERVICE.
5. ALLOW FOR THE PROVISION AND INSTALLATION OF ALL ITEMS REQUIRED FOR ALL FIXINGS, SUPPORTS, SIGNAGE, TERMINATIONS, CONNECTIONS AND COMPLIANCE WITH ALL THE RELEVANT AUTHORITIES.
6. COORDINATE ALIGNMENT OF SERVICES WITH ALL OTHER SERVICES AND ALLOW TO PASS OVER OR UNDER AS REQUIRED TO CROSS SERVICES MAINTAINING MINIMUM CLEARANCES AS REQUIRED IN RELEVANT STANDARDS.
7. ALL INGROUND PIPEWORK SHALL INCLUDE MARKING DETECTOR TAPE AS PART OF THE TRENCH BACKFILL. ALL PIPEWORK UNDERSIDE OF SLAB SHALL INCLUDE SAW-CUTTING, SPOIL REMOVED, SAND BEDDING, BACKFILLED WITH FCR AND DOWELLS TO STRUCTURAL ENGINEERS DETAILS.
8. UPON COMPLETION OF THESE WORKS, THE CONTRACTOR SHALL CLEAN UP THE SITE AND CARRY AWAY ALL SURPLUS MATERIALS AND DEBRIS ARISING FROM THIS CONTRACT TO THE SATISFACTION OF THE SUPERVISOR.
9. ALL EXTERNAL INGROUND ISOLATING VALVES SHALL BE LOCATED IN ACCESSIBLE POSITIONS AND BE PROVIDED COMPLETE WITH PVC RISER AND CAST IRON COVERS THAT ARE FLUSH TO SURROUNDING FINISHED SURFACES. ALL COVERS SHALL HAVE A MINIMUM OF 150mm WIDE AND DEEP CONCRETE SURROUND.
10. ALL FIRE SERVICES VALVES SHALL BE LABELED, WITH INGROUND VALVES HAVING A METALLIC ENGRAVED NUMBER ADJACENT TO ISOLATION VALVE TO FRV REQUIREMENTS. ALL REDUNDANT VALVES SHALL BE LABELLED "NOT IN USE"
11. ALL PIPE DIAMETERS NOTED ON DRAWINGS REFER TO THE INTERNAL DIAMETERS. I.E. Ø100 = 125PE100 SDR11 PIPE

ABBREVIATIONS

BASIN	BSN
CLEANERS SINK	CL.SK
COLD WATER	CW
DISCONNECTOR GULLY	DG
FALSE CEILING	F/C
FIRE HYDRANT	FH
FIRE HOSE REEL	FHR
FLOOR WASTE	FW
FROM ABOVE	F/A
FROM BELOW	F/B
GREASY	Gr
HIGH LEVEL	H/L
HOSE TAP	HT
HOT WATER	HW
OVERFLOW RELIEF GULLY	ORG
PRESSURE LIMITING VALVE	PLV
RAINWATER	RW
SHOWER	SHR
SINK	SK
TUNDISH	TD
THERMOSTATIC MIXING VALVE	TMV
TEMPERED WATER	TW
TO ABOVE	T/A
TO BELOW	T/B
VENT	V
WASTE	W



FIRE HOSE REEL DETAIL
NOT TO SCALE

HYDRAULICS SPECIFICATION

1. SCOPE OF WORKS

- LODGE ALL PLANS AND APPLICATIONS WITH NORTH EAST WATER AND PAY ALL ASSOCIATED FEES AND CHARGES TO OBTAIN ALL NECESSARY PERMITS AND THE LIKE TO COMMENCE WORK.
- SUPPLY AND INSTALL ALL SANITARY WARE, EQUIPMENT AND TAPWARE (AS STATED IN ARCHITECTURAL DOCUMENTATION).
- INCLUDE TO INVESTIGATE AND LOCATE Ex INGROUND DRAINAGE AND WATER SERVICE WITH PIPE LOCATING AND CCTV DRAINS TO DETERMINE CONDITION, LOCATION AND DEPTH.
- LOCATE & CUT IN NEW WATER SUPPLY FROM Ex SERVICE COMPLETE WITH ISOLATION VALVE EXTEND TO PROPOSED CHANGE ROOMS AND RETICULATE TO ALL FITTINGS, FIXTURES AND APPLIANCES.
- ALL INGROUND DRAINAGE SHALL BE Ø100 UPVC DWV FOR SEWER DRAINAGE AND Ø110HDPE FOR GREASY DRAIN.
- SUPPLY & INSTALL SEWER DRAINAGE AND SANITARY PLUMBING TO ALL FITTINGS, FIXTURES AND APPLIANCES.
- SUPPLY & INSTALL NEW GREASE ARRESTOR FOR KIOSK TO NORTH EAST WATER TRADE WASTE DEPARTMENTS REQUIREMENTS.
- EXTEND NEW FIRE SERVICES SUPPLY FROM EXISTING SITE INFRASTRUCTURE TO SERVICE FIRE HOSE REELS.
- CONFIRM ALL WASTE AND WATER POINTS FOR EACH FIXTURE & EQUIPMENT PRIOR TO INSTALLATION.
- PROVIDE ENWARE AQUABLEND OR APPROVED THERMOSTATIC MIXING VALVES (TMV) TO MAINTAIN TEMPERATURES TO EACH BASIN & SHOWER. PROVIDE IN STAINLESS STEEL BOX WITH LOCKABLE HINGED DOORS.
- ALLOW TO ENGAGE INDEPENDENT TESTING AGENCY TO TEST ALL COMPONENTS OF THESE PROPOSED NEW WORKS.

2. GENERAL NOTES

- INSTALLATION SHALL BE DESIGNED AND INSTALLED BY A SUITABLY QUALIFIED REGISTERED BUILDING PRACTITIONER.
- ALL WORKS SHALL COMPLY FULLY WITH AS 3500 NATIONAL PLUMBING AND DRAINAGE CODE - PLUMBING STANDARDS REGULATIONS - NATIONAL CONSTRUCTION CODE (FORMERLY THE BUILDING CODE OF AUSTRALIA) AND ALL OTHER CODES, STANDARDS OR BY-LAWS AS ADOPTED BY THE NORTH EAST WATER.
- ALL FIRE SERVICES SHALL BE INACCORDANCE WITH NCC 2022, AS2419-2021 AND AS2441.
- PRIOR TO COMMENCEMENT OF WORKS THE CONTRACTOR SHALL ALLOW TO DETERMINE THE EXACT LOCATION AND DEPTH OF EXISTING SEWERS TO ENSURE SUITABILITY FOR CONNECTION. THE SUPERINTENDENT SHALL BE NOTIFIED IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
- PRIOR TO COMMENCEMENT OF WORKS, CONFIRM DEPTHS OF Ex WATER SERVICES TO ENSURE APPROPRIATE COVERS ARE PROVIDED ON NEW SLABS.
- EXISTING SERVICES LOCATIONS SHOWN ARE TAKEN FROM PREVIOUSLY AS DESIGNED DOCUMENTATION AND NOT AS CONSTRUCTED AND AS SUCH ARE ASSUMED ONLY. EXACT LOCATIONS SHALL BE VERIFIED BY SITE INVESTIGATION AND DUE ALLOWANCES MADE.
- CONTRACTOR SHALL COORDINATE ALL INGROUND WORKS WITH EXISTING AND PROPOSED STRUCTURAL FOOTINGS AND BEAM LAYOUTS. FOR FULL EXTENT OF STRUCTURAL INGROUND FOOTINGS/BEAMS, REFER TO DRAWING No. S03. ALL SERVICES THAT ARE REQUIRED TO BE PLACED IN PROPOSED FOOTINGS AND BEAMS SHALL BE FULLY WRAPPED TO ALLOW MOVEMENT TO TEH REQUIREMENTS OF THE MANUFACTURER AND AS3500.2 AND SHALL BE PLACED AT A DEPTH TO ACHIEVE THE MINIMUM COVER REQUIREMENTS NOMINATED BY THE STRUCTURAL ENGINEER.
- CONTRACTOR SHALL ENSURE THAT ALL FITTINGS, FIXTURES, MATERIALS ETC USED WITHIN THIS PROJECT HAVE ALL THE APPROPRIATE AUSTRALIAN STANDARDS, APPROVALS AND WATER MARKS AS APPLICABLE.
- THE EXACT LOCATIONS OF WATER AND WASTE POINTS REQUIRED FOR ALL FITTINGS, FIXTURES AND APPLIANCES SHALL BE FULLY COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION.
- EXACT LOCATIONS OF TMV'S & TEMPERING VALVES SHALL BE COORDINATED WITH THE ARCHITECT & BUILDER PRIOR TO INSTALLATION TO INCLUDE ANY ADDITIONAL SUPPORTS OR PROTECTION.
- ISOLATING VALVES SHALL BE PROVIDED FOR EACH ROOM AND FIXTURE AND SHALL BE LOCATED IN POSITIONS THAT WILL NOT BECOME AN OH&S ISSUE FOR MAINTENANCE.
- PROVIDE 25mm ARMAFLEX LAGGING TO ALL HOT AND TEMPERED WATER PIPE WORK.
- PROVIDE METAL SHEATHING TO ALL EXPOSED HOT WATER PIPEWORK.
- RETICULATED WATER SUPPLIES TO ALL FITTINGS, FIXTURES AND APPLIANCES SHALL BE BY MAINS PRESSURE RESTRICTED TO A MAXIMUM PRESSURE OF 500KPA AT POINT OF USE.
- ALL BELOW GROUND SERVICES SHALL BE SUBJECTED TO REQUIRED TESTS & INSPECTIONS PRIOR TO BACKFILLING.
- ALL SAW-CUTTING AND CORING SHALL BE PRIOR APPROVED BY RELEVANT STRUCTURAL ENGINEER PRIOR TO CARRYING OUT ANY WORKS.
- THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A "REGISTERED TESTING COMPANY" APPROVED BY THE WATER AUTHORITY TO PROVIDE A CERTIFIED TESTING PROGRAM FOR ALL DRAINAGE, WASTES, WATER SUPPLIES & FIRE SERVICES FOR THE COMPLETE INSTALLATION ABOVE GROUND, BELOW SLAB AND IN-GROUND ALL TESTED TO COMPLY WITH AS 3500.
- ALLOW FOR THE REMOVAL OF SURPLUS SPOIL RUBBISH AND DEBRIS ASSOCIATED WITH THESE HYDRAULIC WORKS.
- THESE DRAWINGS ARE DIAGRAMMATIC ONLY. IT SHALL BE THE HYDRAULIC CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH ALL OTHER BUILDING ELEMENTS AND SHALL ALLOW FOR SAME IN TENDER PRICE.
- HYDRAULIC'S CONTRACTOR SHALL ALLOW FOR ALL NECESSARY OFFSETS, BENDS, ALTERING PIPES, IO'S, ETC. WHICH ARE NOT SHOWN ON DRAWINGS, HOWEVER, ARE REQUIRED DUE TO ONSITE CONDITIONS AND PLUMBING REGULATIONS.
- ALL SEWER, DOMESTIC HOT & COLD WATER SERVICES ARE TO BE INSTALLED IN ACCORDANCE WITH AS3500 AND OTHER RELEVANT STANDARDS AND AUTHORITY REQUIREMENTS.
- HYDRAULICS CONTRACTOR SHALL ENSURE ALL PIPES, MATERIALS, FIXTURES AND FITTINGS ARE APPROVED FOR USE AND CONNECTION TO THE RELEVANT WATER AUTHORITY SYSTEM AND HAVE THE RELEVANT AUSTRALIAN STANDARD MARKINGS. ANY PIPE, MATERIALS, FIXTURES AND FITTINGS FOUND NOT TO HAVE THE APPROPRIATE APPROVALS WILL BE REJECTED AND REPLACED AT HYDRAULIC CONTRACTOR'S COST.

3. NOTICES AND FEES

LODGE ALL NECESSARY DOCUMENTS AND APPLICATIONS WITH NORTH EAST WATER IN RELATION TO THESE NEW PLUMBING WORKS.

4. LICENSED PLUMBERS

INSTALLATION SHALL BE INSTALLED BY A SUITABLY QUALIFIED REGISTERED BUILDING PRACTITIONER.

5. INSPECTION OF SITE

THE HYDRAULICS CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMISSION OF TENDER TO ASCERTAIN THE FULL EXTENT OF WORKS. NO VARIATION WILL BE ACCEPTED FOR FAILURE OF CONTRACTOR TO CARRY OUT INITIAL VISIT.

6. MATERIALS

ALL SEWER DRAINAGE PIPES & FITTINGS SHALL BE UPVC UNLESS NOTED OTHERWISE.

ALL GREASY DRAINS SHALL BE HDPE, SIZES INDICATE MIN INTERNAL DIAMETERS, EG Ø100 = Ø110

ALL EXPOSED WASTE PIPE AND TRAPS SHALL BE FORMED USING CHROME PLATED BRASS.

ALL EXPOSED WATER SERVICES AND MAIN PIPE RUNS LOCATED IN CEILINGS SHALL BE FORMED OF TYPE 'B' COPPER. ALL IN-WALL RETICULATION SHALL BE REHAU XLPE OR APPROVED SIMILAR

ALL HOT WATER PIPES SHALL BE THERMALLY INSULATED TO ACHIEVE MINIMUM R VALUE OF 3 (25mm THICK INSULATION TO BE USED AS A MINIMUM). ALL EXTERNALLY LOCATED PIPES SHALL INCLUDE ALUMINUM SHEATHING TO PROTECT INSULATION FROM EXPOSURE.

ALL FIRE SERVICES BELOW GROUND SHALL BE SDR11 PE100 BUTT WELDED OR COPPER TUBE TYPE B.

ALL FIRE SERVICES ABOVE GROUND SHALL BE GALVANISED STEEL MEDIUM

7. TEMPERATURE CONTROL

PROVIDE TEMPERATURE CONTROL TO ALL ABLUTION FIXTURES. ALL DDA FIXTURES SHALL BE PROVIDED WITH THERMOSTATIC MIXING VALVES SET AT 45°C. ALL TEMPERATURE CONTROL DEVICES SHALL BE LOCATED BEHIND ACCESSIBLE STAINLESS STEEL BOXES WITH HINGED LOCKABLE ACCESS PANEL DOORS FLUSH WITH WALL SURFACE.

8. FIRE HOSE REELS

PROVIDE NEW FIRE HOSE REELS UTILISING THE EXISTING SUPPLY.

ALL FIRE HOSE REELS SHALL HAVE 36m HOSE LENGTHS AND BE COMPLETE WITH ALL SUPPORTS, SIGNAGE ETC. TO MEET THE REQUIREMENTS OF AS2441.

9. FIRE SERVICES

AT COMPLETION OF WORKS ENGAGE AN APPROVED FIRE TESTER TO CARRY OUT A FLOW AND HYDROSTATIC TEST ON THE NEW WORKS. REPORT SHALL BE SUBMITTED FOR APPROVAL AND SHALL HAVE NO OUTSTANDING ITEMS. ANY ITEMS REMAINING OUTSTANDING SHALL BE RECTIFIED BY THE CONTRACTOR.

10. TUNDISHES

ALL TUNDISHES REQUIRED FOR THE MECHANICAL SERVCES CONDENSATE SHALL BE COORDINATED WITH THE BUILDER, MECHANICAL CONTRACTOR AND ARCHITECT. ALL IN-WALL TUNDISHES SHALL BE PROVIDED COMPLETE WITH BRITEX D-TDW OR APPROVED SIMILAR STAINLESS STEEL BOX WITH VIEWING PANEL. TUNDISHES DISCHARGING DIRECT TO DRAINS SHALL BE FITTED WITH HEPVO (OR APPROVED SIMILAR) WATERLESS TRAP INSTALLED TO MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS. ALL EXPOSED TUNDISHES SHALL BE CHROME PLATED.

11. TRAP PRIMERS

ALL FLOOR WASTES SHALL BE PRIMED FROM A WASTE DISCHARGE. ALL UN-PRIMED TRAPS SHALL BE PROVIDED WITH PRESSURE DROP TRAP PRIMERS (MIFAB MR-500 OR APPROVED SIMILAR) LOCATED UPSTREAM OF A FIXTURE TO ALLOW DETECTION OF PRESSURE DROP. ALL TRAP PRIMERS SHALL BE PROVIDED COMPLETE WITH ISOLATION VALVE TO THE SUPPLY AND DRAIN CONNECTION TO FLOOR WASTE TRAP.

12. HOT WATER PLANT

SUPPLY, INSTALL & COMMISSION 2No. 315Ltr RHEEM MAINS ELECTRIC HOT WATER UNITS (3 x 4.8KW EA) MANIFOLD COMPLETE WITH DUAL RECIRULATING PUMPS PROVIDED WITH TIMERS THAT CONTROL OPERATION TO PREVENT COMBINED OPERATION AND HAVING 50% LOAD PROVIDED PER DAY. OPERATION OF PUMPS SHALL COMMENCE 1 Hr PRIOR TO OPENING OF FACILITY AND SWITCH OFF 2Hrs AFTER CLOSURE, INCLUDING ANY CLEANING OPERATIONS. HOURS TO BE COORDINATED WITH FACILITY OPERATORS.

KIOSK SHALL BE PROVIDED WITH RHEEM OR APPROVED SIMILAR 50Ltr HOT WATER UNIT (1 x 4.8kW) COMPLETE WITH SAFE-TRAY.

13. AS INSTALLED DRAWINGS AND MAINTENANCE MANUALS

ON COMPLETION OF THE WORKS, AND PRIOR TO THE ISSUE OF THE NOTICE OF PRACTICAL COMPLETION, THE CONTRACTOR SHALL SUPPLY ON USB STICK, AN "AS-INSTALLED "CAD" & "PDF" FORMAT DRAWING OF THE INSTALLATION. THE CONTRACTOR SHALL ALSO PROVIDE ONE (1) SET OF PRINTS OF THESE DRAWINGS BOUND INTO THE OPERATING AND MAINTENANCE INSTRUCTIONS AS FURTHER SPECIFIED HEREIN.

THE SUPPLY OF ALL NECESSARY INFORMATION FOR THE SATISFACTORY OPERATION AND MAINTENANCE OF THE SERVICES SHALL FORM PART OF THIS CONTRACT. THE CONTRACTOR SHALL PROVIDE ONE (1) COPY IN "PDF" TO THE SUPERINTENDENT FOR ASSESSMENT PRIOR TO PROVIDING A HARDCOPY AND ELECTRONIC VERSION. INSTRUCTIONS SHALL BE SUPPLIED WITH THE "AS INSTALLED" DRAWINGS IN CAD FORMAT AND SHALL BE SUPPLEMENTED BY DIAGRAMS AND SPARE PARTS SCHEDULES. TENDERERS SHOULD NOTE THAT THE SUPPLY OF INSTRUCTIONS AND "AS INSTALLED" DRAWINGS IS A CONDITION OF PRACTICAL COMPLETION.

THE MANUALS SHALL INCLUDE THE FOLLOWING AS A MINIMUM: (FOR ELECTRONIC VERSION EACH SECTION SHALL BE LOCATED IN SEPARATE FOLDERS)

- THE MANUALS SHALL BE SUPPLIED IN A COMBINED BINDER WITH THE PROJECT NAME CLEARLY DISPLAYED ON THE COVER.
- THE MANUALS SHALL BE SPLIT INTO SECTIONS WITH APPROPRIATE DIVIDERS AND AN INDEX SUCH AS
  - GENERAL DESCRIPTION OF SERVICES (SEWER, COLD WATER, HOT WATER, ETC),
  - AS-BUILT DRAWINGS,
  - DETAILS OF ALL FIXTURES AND FITTINGS, PIPES, VALVES,
  - PLUMBING CERTIFICATES,
  - SCHEDULES,
  - WARRANTIES ETC.,
- ALL INFORMATION SHEETS SHALL BE SUPPLIED IN INDIVIDUAL PLASTIC POCKETS OR FOLDERS.
- AN APPROPRIATE STORAGE DISK CONTAINING THE AS-INSTALLED DRAWINGS IN CAD & PDF FORMAT (INCLUDING CTB FILE) SHALL BE PROVIDED CLEARLY LABELLED WITH THE PROJECT NAME AND THE DRAWINGS CONTAINED. A SET OF FULL SIZE HARD COPY DRAWINGS SHALL BE SUPPLIED WITHIN THE MANUALS.
- THE AS-INSTALLED DRAWINGS SHALL SHOW RUNNING CHAINAGES, DEPTHS, OFFSETS AND THE LIKE.
- THE HYDRAULICS CONTRACTOR SHALL INSERT THEIR OWN COMPANY NAME AND DETAILS TO EACH DRAWING (AS-BUILT DRAWINGS BECOME THE RESPONSIBILITY OF THE HYDRAULIC CONTRACTOR).
- ALL AS-INSTALLED DRAWINGS SHALL BE CLEAR AND LEGIBLE TO THE SATISFACTION OF THE SUPERINTENDENT.

14. PROTECTION

CONTRACTOR SHALL BE AWARE THAT WORKS WILL BE CARRIED OUT DURING THE FACILITIES OPERATION AND THEREFORE WHERE WORK ARE CARRIED OUT OUTSIDE THE DESIGNATED AREA OF WORKS, PROVIDE AND ERECT WHERE NECESSARY ALL REQUIRED WATCHING, LIGHTING BARRIERS AND PEDESTRIAN CROSSINGS TO ENSURE THE SAFETY OF ALL WORKMEN, STAFF AND THE FACILITIES VISITORS.

WORKS ASSOCIATED WITH HIGH NOISE POLLUTION SHALL NOT BE CARRIED OUT WITHOUT PRIOR CONSENT PROVIDED BY THE FACILITY OPERATORS.

ISOLATION OF SERVICES SHALL NOT OCCUR WITHOUT PRIOR WRITTEN CONSENT BY THE FACILITIES REPRESENTATIVE.

15. TESTING AND COMMISSIONING

TEST AND COMMISSION ALL HYDRAULIC SERVICES IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS, INCLUDING BUT NOT LIMITED TO AS3500 AND THE NCC (FORMERLY THE BCA).

TESTING OF ALL BACKFLOW PREVENTION DEVICES AND TEMPERATURE CONTROL DEVICES INSTALLED AS PART OF THESE WORKS.

TEST AND COMMISSION THE HOT WATER SERVICE IN ITS ENTIRETY TO ENSURE NEW LOOP AND EXISTING LOOPS OPERATE SATISFACTORILY.

16. WARRANTY AND FREE SERVICE

ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF TWELVE (12) CALENDAR MONTHS FROM THE DATE OF PRACTICAL COMPLETION. THE COST OF ALL LABOUR AND MATERIALS EXPENDED IN MAINTAINING THE WARRANTY SHALL BE BORNE BY THE CONTRACTOR.

17. COMMISSIONING

THE CONTRACTOR SHALL ENGAGE NECESSARY APPROVED TESTERS TO CARRY OUT ALL COMMISSIONING TO ENSURE OPERATION OF FACILITY MEETS COMPLIANCE AND ITS DESIGNED INTENT. PROVIDE COMPLETED REPORTS WITHOUT ANY OUTSTANDING ITEMS OR FAILURES. ANY INCOMPLETE WORKS SHALL BE RECTIFIED AND TESTS REPEATED IF REQUIRED, AT NO COST TO THE PROJECT.

FIRE SERVICES SHALL INCLUDE THE ENGAGEMENT OF AN APPROVED FIRE TESTER TO CONDUCT A FLOW AND HYDROSTATIC TEST ON THE NEW HYDRANT AND HOSE REEL SYSTEM COMPLETE WITH A FINAL REPORT THAT HAS NO OUTSTANDING ITEMS.

ALL BACKFLOW PREVENTION DEVICES SHALL BE CERTIFIED BY AN APPROVED CONTRACTOR TO BE PRESENTED TO EAST GIPPSLAND WATER AT COMPLETION OF PROJECT.

ALL TEMPERATURE CONTROL DEVICES SHALL BE PROVIDED WITH A LABEL, NUMBER, LOCATION AND TEMPERATURE READING AT 5, 10s OF INITIAL START.

18. SEISMIC RESTRAINTS

PROVIDE SEISMIC RESTRAINTS ON PLANT AND EQUIPMENT IN COMPLIANCE WITH THE BUILDING CODE OF AUSTRALIA AND AS 1170.4.

RESTRAINT SHALL BE PROVIDED ON ALL ITEMS LISTED IN AS 1170.4.

THE DESIGN PARAMETERS TO BE USED IN DESIGNING TO AS 1170.4 SHALL BE OBTAINED FROM THE STRUCTURAL ENGINEER (AT THE CONTRACTORS EXPENSE), INCLUDING:

- SITE FACTOR
- ACCELERATION CO-EFFICIENT
- IMPORTANCE FACTOR
- HEIGHT FACTORS
- STRUCTURAL PERIOD.

ALL SEISMIC RESTRAINTS PROPOSED AND INSTALLED FOR BUILDING SERVICES AS PART OF THESE WORKS SHALL BE REVIEWED AND CERTIFIED BY A QUALIFIED STRUCTURAL ENGINEER.

Rev	Date	Amendment Description	By	Chk
T1	26/05/26	TENDER ISSUE	DA	HR
T2	26/06/26	TENDER ISSUE	DA	HR
T3	6/07/26	TENDER ISSUE	DA	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE / AMENITIES

41 SCHILLING DRIVE, WANGARATTA, 3677

Drawing Title

HYDRAULIC SERVICES

SEWER DRAINAGE & WATER SERVICES LAYOUT

Scale	1:100 @ A1	Checked	HR
Date	02/07/2025	Approved	HR
Drawn	DA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	H001	T3

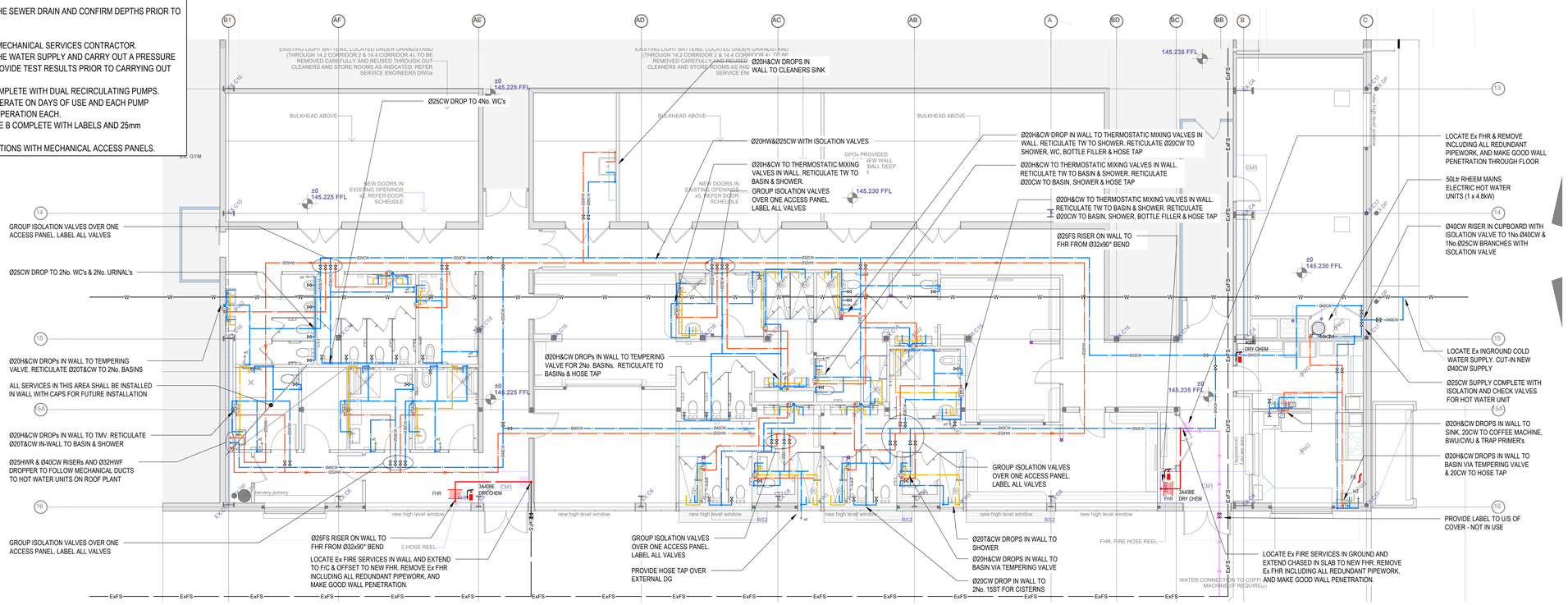
Status: TENDER ISSUE

Sheet No. 1 of 3

© Ofek A1

NOTE

1. ALLOW TO INVESTIGATE THE LOCATION OF THE SEWER DRAIN AND CONFIRM DEPTHS PRIOR TO CARRYING OUT ANY WORKS.
2. ALL GREASY DRAINS SHALL BE HDPE
3. COORDINATE ALL TUNDISHES REQUIRED BY MECHANICAL SERVICES CONTRACTOR.
4. ALLOW TO INVESTIGATE THE LOCATION OF THE WATER SUPPLY AND CARRY OUT A PRESSURE AND FLOW TEST TO CONFIRM ADEQUACY. PROVIDE TEST RESULTS PRIOR TO CARRYING OUT ANY WORKS.
5. PROVIDE HOT WATER PLANT CONSISTING COMPLETE WITH DUAL RECIRCULATING PUMPS. PUMPS SHALL BE FITTED WITH TIMERS TO OPERATE ON DAYS OF USE AND EACH PUMP OPERATING ALONE FOR HALF OF THE DAYS OPERATION EACH.
6. ALL MAIN PIPES SHALL BE COPPER TUBE TYPE B COMPLETE WITH LABELS AND 25mm INSULATION FOR HOT WATER.
7. COORDINATE WATER ISOLATION VALVE LOCATIONS WITH MECHANICAL ACCESS PANELS.

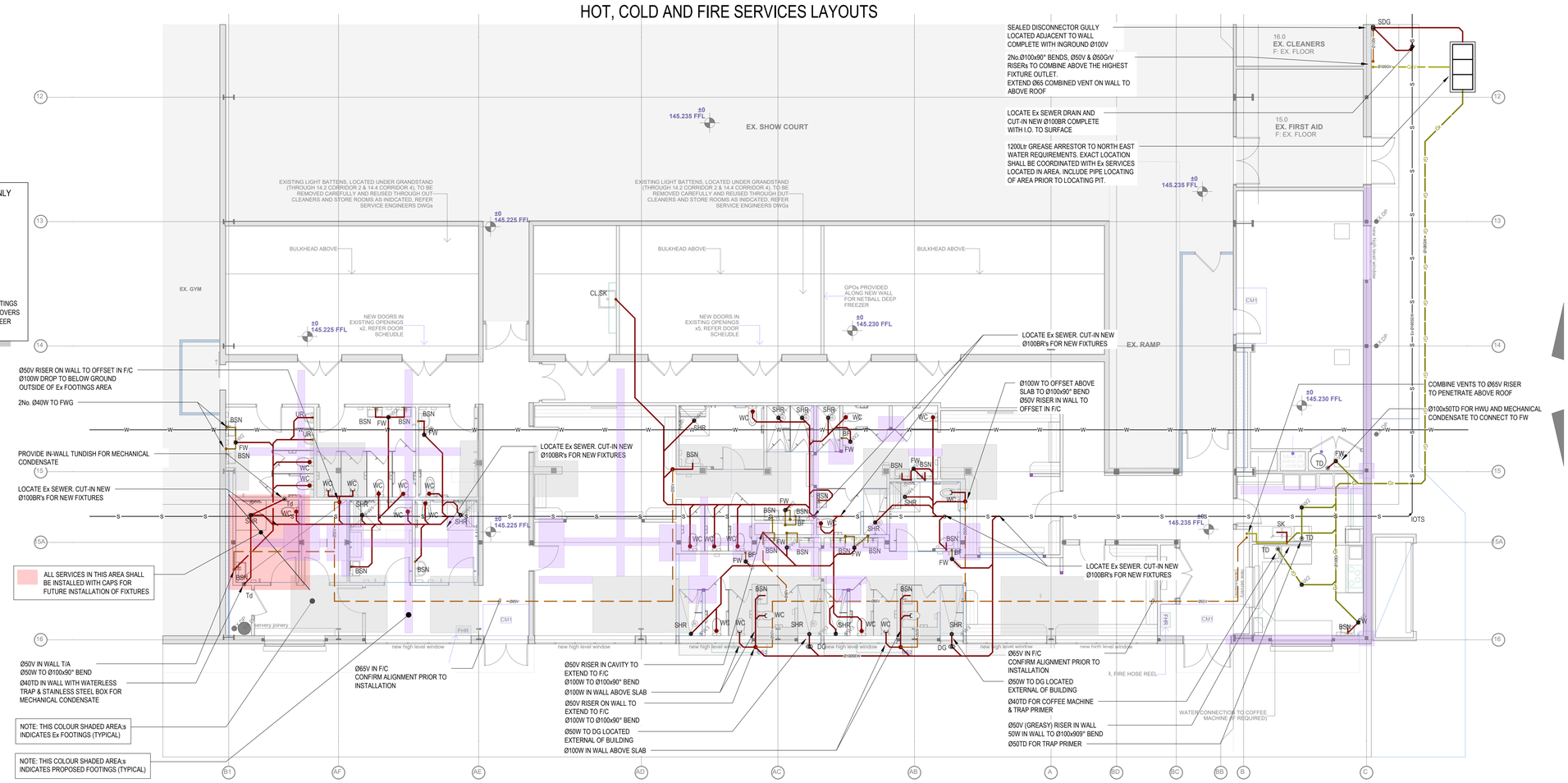


HOT, COLD AND FIRE SERVICES LAYOUTS

FOOTINGS ARE INDICATED FOR INFORMATION ONLY AND DO NOT PURPORT TO SHOW ALL. FOR FULL EXTENT OF FOOTINGS REFER TO STRUCTURAL DRG. No. S03

EXISTING FOOTINGS

PROPOSED FOOTINGS
ALL SERVICES WITHIN PROPOSED FOOTINGS SHALL BE WRAPPED AND PLACED AT COVERS AS APPROVED BY STRUCTURAL ENGINEER



SEWER AND GREASY DRAINAGE LAYOUTS

Rev	Date	Amendment Description	By	Chk
T1	26/05/26	TENDER ISSUE	DA	HR
T2	26/06/26	TENDER ISSUE GIT RELOCATED, FHR AMENDED, NOTES ADDED	DA	HR
T3	6/07/26	TENDER ISSUE	DA	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE / AMENITIES

41 SCHILLING DRIVE, WANGARATTA, 3677

Drawing Title

HYDRAULIC SERVICES

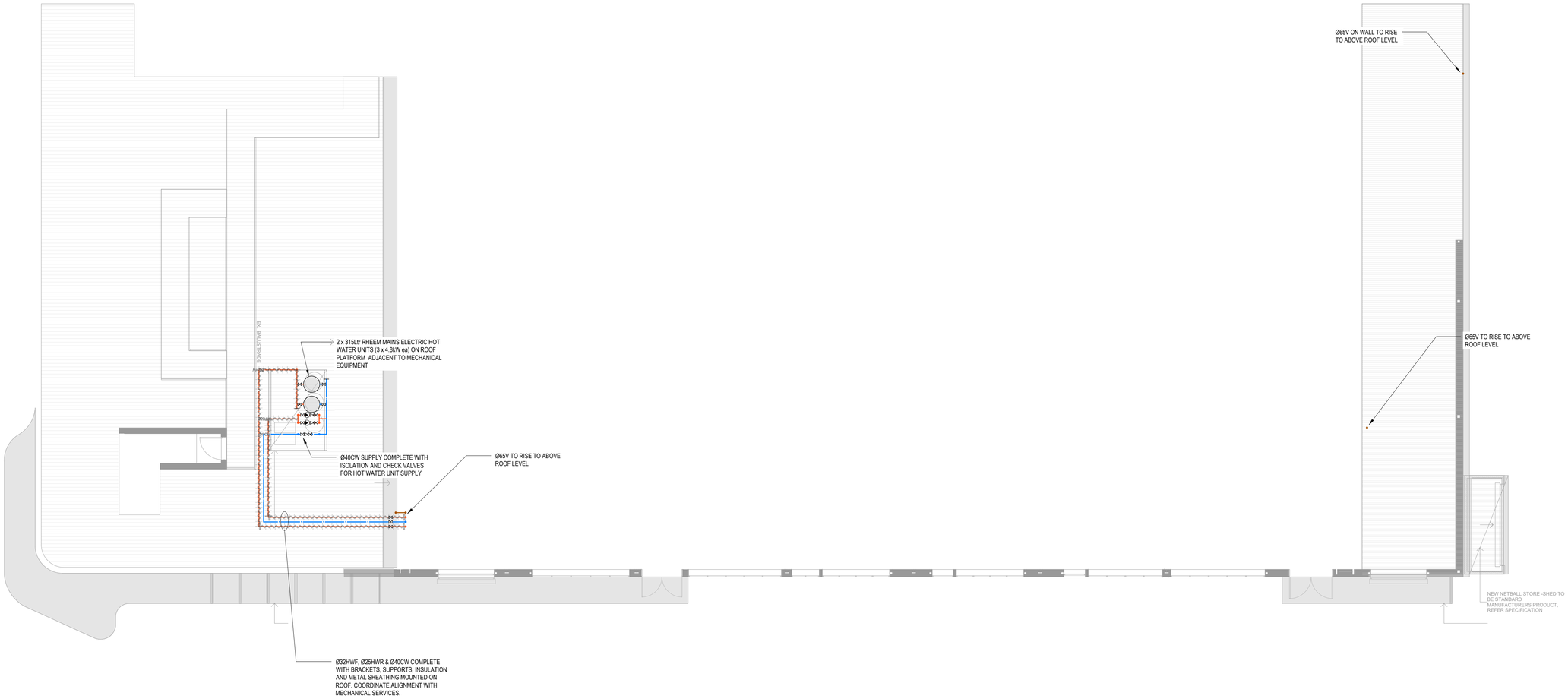
SEWER DRAINAGE & WATER SERVICES LAYOUT

Scale	1:100 @ A1	Checked	HR
Date	02/07/2025	Approved	HR
Drawn	DA	Verified	HR
Project No.	Drawing No.	Revision	
PJ316	H100	T3	

Status: TENDER ISSUE

Sheet No. 2 of 3

© Ofek A1



Rev	Date	Amendment Description	By	Chk
T1	26/05/26	TENDER ISSUE	DA	HR
T2	26/06/26	TENDER ISSUE	DA	HR
T3	6/07/26	TENDER ISSUE	DA	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia

Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE / AMENITIES

41 SCHILLING DRIVE, WANGARATTA, 3677

Drawing Title

HYDRAULIC SERVICES

ROOF PLANT LAYOUT

Scale	1:100 @ A1	Checked	HR
Date	02/07/2025	Approved	HR
Drawn	DA	Verified	HR

Project No.	Drawing No.	Revision
PJ316	**H200**	**T3**

Status

TENDER ISSUE

Sheet No. 2 of 3

© Ofek A1

PJ316 - WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

MECHANICAL SERVICES

LEGEND

- DUCTWORK INTERNALLY INSULATED WITH MINIMUM R-VALUE OF 3.0
- DUCTWORK INTERNALLY INSULATED WITH MINIMUM R-VALUE OF 2.0
- DUCTWORK INTERNALLY INSULATED WITH MINIMUM R-VALUE OF 1.2
- DUCTWORK INTERNALLY INSULATED WITH MINIMUM R-VALUE OF 1.2 WITH MELINEX
- DUCTWORK WITHOUT INSULATION
- EXISTING DUCTWORK

DUCTWORK EQUIPMENT / ACCESSORIES

- FLEXIBLE DUCT.
- EXHAUST LINEAR BAR GRILL C/W VOLUME DAMPER.
- NEW SLOT DIFFUSER C/W AIR BOOTS.
- INLINE FAN.
- T — TEMPERATURE SENSOR.
- CC — CENTRAL CONTROLLER.
- CO_2 — CARBON DIOXIDE SENSOR.
- CP — REMOTE THERMOSTAT DIGITAL CONTROLLER.
- MS — MOTION SENSOR.
- NRD — NON-RETURN DAMPER
- M — MOTORISED DAMPER
- A / P — DENOTES CEILING MOUNTED ACCESS PANELS PROVIDED BY BUILDER. THE MECHANICAL CONTRACTOR MUST PROVIDE THE REQUIRED INFORMATION i.e.: SIZE, TYPE, ETC., AND TO CO-ORDINATE WITH THE BUILDER AND ARCHITECT FOR FINAL LOCATIONS.
- AP
- FLEXIBLE DUCT SPIGOT C/W V.C.D. SIZE AS NOTED. FLEXIBLE DUCT TO BE CONNECTED AIRTIGHT.
- REFRIGERANT PIPE
- CONDENSATE PIPEWORK
- TD — TUNDISH
- SINGLE FLOW TYPE
- WALL MOUNTED AC UNIT
- DOOR UNDERCUT (20mm) BY BUILDER
- CONTROL VOLUME DAMPER
- FILTER
- NATURAL VENTILATION
- OUTDOOR CONDENSER (SIDE BLOW)
- OUTDOOR CONDENSER (VERTICAL BLOW)

AIR REGISTERS

- CEILING SUPPLY AIR DIFFUSER 4 WAY BLOW, C/W INTERNALLY INSULATED PLENUM BOX
- 2 AND 3 WAY BLOW CEILING SUPPLY AIR DIFFUSER.
- CEILING SUPPLY AIR DIFFUSER RADIAL SWIRL BLOW, COMPLETE WITH INTERNALLY INSULATED PLENUM BOX
- CEILING RETURN AIR GRILLE C/W PLENUM BOX.
- CEILING EXHAUST AIR GRILLE C/W PLENUM BOX.

GENERAL ITEMS

- AREA SHOWN ON REFERRED DRAWING
- 1 / M1001
- 1 / M3001 — SECTION SHOWN ON REFERRED DRAWING

AIR REGISTER / EQUIPMENT IDENTIFICATION

X / XXX — AIR REGISTER TYPE:
S=SUPPLY, R=RETURN, E=EXHAUST, L=LOUVRE, LS=LINEAR SLOT, DG=DOOR GRILLE, UC=UNDER CUT, MW=MOTORISED WINDOW
"xxx" = AIR FLOW L/s
"-" = AIR FLOW UNSPECIFIED
"XX" = UNDER CUT SIZE IN MILLIMETER

AHU-01 — MECHANICAL EQUIPMENT
EXAMPLE: AIR HANDLING UNIT 01

CONTROL SYMBOLS

MSSB / BMS — MSSB - MECHANICAL SWITCHBOARD
BMS - BUILDING MANAGEMENT SYSTEM SWITCH BOARD

AH — AFTER HOURS SWITCH

TC — DENOTES WALL MOUNTED WIRED CONTROL THERMOSTAT MOUNTED AT 1500mm AFFL U.N.O

C — CONTROL STATION

ABBREVIATIONS

AC	AIR CONDITIONING UNIT
AFFL	ABOVE FINISHED FLOOR LEVEL
A/P	ACCESS PANEL
CCW	CONDENSER COLD WATER
C/W	COMPLETE WITH
CU	CONDENSER UNIT
DC	DOOR UNDERCUT
DW	DRAIN WELL / SOAK WELL
(E)	EXISTING
EC	EVAPORATIVE COOLER
EF	EXHAUST FAN
ESP	ELECTROSTATIC FILTER
FD	FIRE DAMPER
KEF	KITCHEN EXHAUST FAN
WL	WEATHERPROOF LOUVRE
H/L	HIGH LEVEL
L/L	LOW LEVEL
TD	TUNDISH
N	NEW
MAF	MAKE-UP AIR FAN
MSSB	MECHANICAL SWITCHBOARD
OAF	OUTDOOR AIR FAN
PAC	PACKAGED AIR CONDITIONER
R	TO BE RELOCATED
RAF	RELIEF AIR FAN
RC	ROOF COWL
VCD	VOLUME CONTROL DAMPER

GENERAL NOTES

THE FOLLOWING NOTES SHALL APPLY: -

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE GENERAL NOTES.

2. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.

3. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED. REFER TO ARCHITECTS DRAWINGS FOR DIMENSIONS.

4. MATERIAL AND WORKMANSHIP SHALL CONFORM TO RELEVANT CURRENT A.S. CODES AND THE PROJECT SPECIFICATIONS.

5. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND ALL RELEVANT AUSTRALIAN STANDARDS, INCL. AS1668.1, AS1668.2. AS4254, AS1677 AND ALL NCC REQUIREMENTS, INCLUDING SECTION J.

6. PROVIDE SEISMIC BRACING/RESTRAINTS TO RESIST HORIZONTAL AND VERTICAL EARTH QUAKE FORCES FOR MECHANICAL EQUIPMENT, PIPEWORK AND DUCTWORK TO MEET SECTION 8 OF AS 1170.4. MECHANICAL PLANT, EQUIPMENT & SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS SECTION 8 OF AS 1170.4. BUILDER/CONTRACTOR TO PROVIDE STATEMENT AND CERTIFICATION AT END OF PROJECT THAT THE SERVICES INSTALLATION COMPLY WITH SECTION 8 OF AS 1170.4.

7. SUPPLY AND INSTALL SUPPLY AIR DUCTWORK AND RETURN AIR PLENUM BOX WITH 50MM INTERNAL ACOUSTIC LINING FOR DUCTED A/C SYSTEMS.

8. SUPPLY AIR CUSHION BOX TO BE SELECTED BY AIR GRILLE MANUFACTURER TO SUIT AIRFLOW AND SHALL HAVE A MINIMUM OF 25MM INTERNAL LINING AND A 90 DEGREE CONNECTION POINT (I.E. FLEXIBLE CONNECTION SHALL NOT BE DIRECTLY ABOVE THE GRILLE).

9. ALL RETURN AIR GRILLES SHALL BE SUPPLIED WITH 90 DEGREE SHEET METAL CUSHION HEAD BOXES LINED WITH 25MM INSULATION.

10. ALL FANS SHALL HAVE SUITABLE FLEXIBLE CONNECTIONS BETWEEN THE FAN AND THE DUCTWORK. FLEXIBLE CONNECTIONS MAY NOT BE SHOWN ON THE DESIGN DRAWINGS FOR CLARITY.

11. THE FINAL THERMOSTAT LOCATION SHALL BE APPROVED BY THE CLIENT AND THE CONSULTANT PRIOR TO INSTALLATION.

12. MINIMUM 2000mm ACOUSTIC FLEXIBLE DUCTWORK PRIOR TO CONNECTION TO SUPPLY AIR DIFFUSER CUSHION BOX TO MINIMISE NOISE

13. ALL DUCT SIZES SHOWN ARE INTERNAL AIRWAY SIZE, ADDITIONAL 75mm FOR INTERNAL INSULATION SHALL BE CONSIDERED.

14. FINAL DIFFUSER LOCATION AND HEIGHT SHALL BE COORDINATED WITH THE ARCHITECT DURING SHOP DRAWINGS STAGE.

15. WHERE PIPEWORK PENETRATES FIRE/SMOKE RATED WALL, SHAFT/RISER AND FIRE/SMOKE COMPARTMENT, AN AIRTIGHT FIRE RATED SEALANT SHALL BE PROVIDED. OPENING SHALL BE SEALED FIRE RATED WHERE REQUIRED. FIRE RATE ALL MECHANICAL SERVICES IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA.

16. ALL AIR CONDITIONING SUPPLY & RETURN DUCTWORK TO BE SEALED & INSULATED IN ACCORDANCE WITH NCC SECTION J.

17. REFRIGERANT PIPES NOT SHOWN FOR CLARITY - ALL INDOOR UNITS TO BE CONNECTED TO THE OUTDOOR UNIT IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS ALL REFRIGERANT PIPEWORK TO BE INSULATED AS PER MANUFACTURERS REQUIREMENTS & NCC SECTION J.

18. ALL REFRIGERANT PIPEWORK & FITTING TO BE INSTALLED IN ROOF/CEILING/WALL SPACE UNLESS NOTED OTHERWISE.

19. DRAINS FROM A/C UNIT TO BE CONNECTED TO THE CLOSEST MECHANICAL TUNDISH.

20. PROVIDE TURNING VANES FOR BENDS WHERE POSSIBLE.

21. MOUNTING OF EQUIPMENT ON THE STRUCTURE ROOF SHALL BE INSPECTED & APPROVED BY A STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

22. ALL EXISTING EQUIPMENT TO BE CLEANED, SERVICED AND CALIBRATED AS REQUIRED.

FLEXIBLE DUCT SCHEDULE

NOMINAL AIRFLOW (L/s)	MIN. DIAMETER (mm)
0 - 40	150 Ø
41 - 80	200 Ø
81 - 150	250 Ø
151 - 220	300 Ø
221 - 330	350 Ø
331 - 425	400 Ø
426 - 540	450 Ø
541 - 650	500 Ø

NOTE: FLEXIBLE DUCT SHALL BE ACOUSTIC INSULATED (MIN. R1.0)

RETURN / EXHAUST & TRANSFER GRILLE SCHEDULE

TAG	AIRFLOW (L/s)	FACE SIZE (mm)	TYPE
E1	0 - 30	150x150	LINEAR BAR GRILLE C/W CUSHION HEAD U.N.O 95% FREE AREA HOLYOAKE OR EQUAL
E2	35 - 75	200x200	
E3	76 - 125	250x250	
E4	126 - 180	300x300	
SW1	0 - 150	500x100	
R1	361 - 700	600x600	
R2	701 - 1050	600x900	
R3	1051 - 1400	600x1200	
TG1	0 - 50	600x100	
TG2	51 - 100	600x150	

DUCTWORK & FITTINGS IN AN AIR-CONDITIONING SYSTEM

LOCATION OF DUCTWORK AND FITTING	MINIMUM INSULATION R-VALUE
WITHIN A CONDITIONED SPACE	1.2
WHERE EXPOSED TO DIRECT SPACE	3.0
ALL OTHER LOCATIONS	2.0

SHEET LIST TABLE

DRAWING NUMBER	SHEET TITLE
M000	MECHANICAL SERVICES - LEGEND, GENERAL NOTES & SCHEDULES
M001	MECHANICAL SERVICES - SPECIFICATION & SCOPE OF WORK
M100	MECHANICAL SERVICES - GROUND FLOOR PLAN HVAC LAYOUT
M200	MECHANICAL SERVICES - ROOF & UPPER FLOOR PLAN HVAC LAYOUT

DOOR GRILLE SCHEDULE

TAG	DIMENSION (mm)	NOMINAL AIR (L/s)	REMARKS
U	UNDERCUT (25)	-	MIN. 65% FREE AREA
A	600 x 150	0 - 100	
B	600 x 200	101 - 150	
C	600 x 300	151 - 225	
D	600 x 450	226 - 350	
E	600 x 600	351 - 450	
F	600 x 900	451 -600	

NOTE:
DOOR GRILLES TO BE POWDERCOATED TO MATCH DOORS.

COMMERCIAL KITCHEN EXHAUST CANOPY SCHEDULE

DESIGNATION	SERVED	EXHAUST AIRFLOW (L/s)	SUPPLY AIRFLOW (L/s)	TYPE	SIZE (mm)	REMARKS
KH-1	KITCHEN COOKING APPLIANCES	1000	N/A	WALL	2000L x 1100D x 600H	SUPPLY & INSTALL KITCHEN CANOPY COMPLETE WITH EXHAUST COLLARS, SS GREASE FILTERS & LIGHTS.

NOTES
- KITCHEN HOOD SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 8 OF AS 1170.4 COMPLETE WITH SEISMIC BRACING. - SUBMIT KITCHEN CANOPY SHOP DRAWINGS FOR REVIEW AND COORDINATION.

ROOF COWL SCHEDULE

DESIGNATION	AIRFLOW RATES (L/s)	EXTERNAL STATIC PRESSURE (pa)	NECK SIZE (mm)
RC- 1	0 - 50	5	150Ø OR 150x150
RC- 2	51-100	5	200x200
RC- 3	101-200	5	350x350
RC- 4	201-300	5	500x500
RC- 5	351-600	5	650x650

NOTES:
COORDINATE WITH BUILDER FOR ROOF PENETRATIONS AND DRAWINGS.
ALLOW DUCT TRANSITION FOR CONNECTION TO ROOF COWL.
ROOF COWLS TO BE COLORBOND/ PAINTED TO MATCH THE ROOF.

SUPPLY AIR GRILLE / DIFFUSER SCHEDULE

TAG #	AIRFLOW (L/s)	NOMINAL FACE SIZE (mm)	REMARKS / TYPE
D1	REFER DWG	595 x 595	SWIRL SUPPLY AIR DIFFUSER C/W INSULATED CUSHION HEAD HOLYOAKE OR EQUAL
D2	REFER DWG	450 x 450	
D3	REFER DWG	300 x 300	
BG1	REFER DWG	REFER DWG	LINEAR BAR GRILLE WITH FIXED FRONT BLADES AND ADJUSTABLE BLADES BEHIND C/W PLENUM HOLYOAKE OR EQUAL.
BG2	REFER DWG	REFER DWG	LINEAR BAR GRILLE WITH CUSHION HEAD HOLYOAKE OR EQUAL.

NOTES:
1. CONTRACTOR TO SUBMIT GRILLE/DIFFUSER SAMPLE FOR APPROVAL BY ARCHITECTS.

AIR COOLED SPLIT AIR CONDITIONER HEAT PUMP SCHEDULE

DESIGNATION OUTDOOR (CAPACITY)	DESIGNATION INDOOR	LOCATION SERVED	DESCRIPTION INDOOR AC TYPE	MAKE	SUPPLY AIRFLOW (L/s)	NOMINAL TOTAL CAPACITY (kW)	NOMINAL SENSIBLE CAPACITY (kW)	HEATING CAPACITY (kW)	POWER SUPPLY (MCA) (A/V/PH)	REMARKS
CU - 1 RXYMQ6B2	AC - 1.1 AC - 1.2 FXAQ63BVM	NETBALL MEETING	WALL MOUNTED	DAIKIN	AS STD	8.0 EACH	5.8 EACH	9.0 EACH	30 / 240 / 1	PROVIDE INTERFACE/MODULE CARD FOR CONNECTION TO EXISTING BMS T'STAT CONTROLLER TO BE MOUNTED NEXT TO ROOM LIGHT SWITCH
CU - 2 RXV25	AC-2 FTXV25	NETBALL OFFICE	WALL MOUNTED	DAIKIN	AS STD	2.5	2.77	3.2	15 / 240 / 1	PROVIDE INTERFACE/MODULE CARD FOR CONNECTION TO EXISTING BMS T'STAT CONTROLLER TO BE MOUNTED NEXT TO ROOM LIGHT SWITCH
CU - 3 RXV25	AC-3 FTXV25	NETBALL REG.	WALL MOUNTED	DAIKIN	AS STD	2.5	2.77	3.2	15 / 240 / 1	PROVIDE INTERFACE/MODULE CARD FOR CONNECTION TO EXISTING BMS T'STAT CONTROLLER TO BE MOUNTED NEXT TO ROOM LIGHT SWITCH

NOTES:
1. EQUIPMENT ELECTRICAL REQUIREMENTS INDICATIVE ONLY. CONTRACTOR TO CONFIRM WITH EQUIPMENT MANUFACTURER.
2. MANUFACTURES RECOMMENDED MAXIMUM PIPE LENGTH NOT TO BE EXCEEDED.
3. UNIT TO BE INVERTER TYPE & R32 REFRIGERANT.
4. ALL AC UNITS SHALL BE PROVIDE WITH INTERFACE/MODULE CARD FOR CONNECTIONS TO EXISTING BMS

FAN SCHEDULE

DESIGNATION	LOCATION SERVED	DESCRIPTION	MAKE	AIRFLOW RATE (L/s)	EXT. STATIC (pa)	SPEED (RPM)	MOTOR kW	POWER SUPPLY V/ ph/ FLA	REMARKS
KEF-1	ROOF/ KITCHEN CANOPY	KITCHEN EXHAUST	FANTECH	Max. 1000 Min. 600	375	1020	1.5	415/3/5	PROVIDE VSD. FAN COMPLY WITH AS 1668.1. OUTLET AIR DISCHARGE Min. 5m/s.
EF-1	ROOF/ KITCHEN	EXHAUST FAN	FANTECH	100	90	1380	0.1	240/1/5	PROVIDE NRD, SPEED CONTROLLER. FAN OPERATE VIA ON-OFF WALL SWITCH COMPLETE WITH LED LIGHTS NEXT TO ROOM LIGHT SWITCH.
EF-2	ROOF/ AMENITIES	EXHAUST FAN	FANTECH	905 (80 L/s FOR FUTURE)	180	1485	0.5	240/1/5	PROVIDE NRD, SPEED CONTROLLER. FAN SHALL OPERATE DURING TENANT OPERATION HOURS WITH TIME CLOCK CONTROL.
EF-3	ROOF/ AMENITIES	EXHAUST FAN	FANTECH	570	180	1201	0.5	240/1/5	PROVIDE NRD, SPEED CONTROLLER. FAN SHALL OPERATE DURING TENANT OPERATION HOURS WITH TIME CLOCK CONTROL.
EF-4	ROOF/ AMENITIES	EXHAUST FAN	FANTECH	1660	210	897	2.6	415/3/5	PROVIDE NRD, VSD. FAN SHALL OPERATE DURING TENANT OPERATION HOURS WITH TIME CLOCK CONTROL.
OAF-1	OFFICE	OUTDOOR FAN	FANTECH	20	75	1896	0.05	240/1/5	PROVIDE NRD, SPEED CONTROLLER. FAN OPERATE VIA ON-OFF WALL SWITCH
OAF-2	MEETING ROOM	OUTDOOR AIR FAN	FANTECH WJ-250SILKIT	300	80	2570	0.19	240/1/5	PROVIDE NRD, SPEED CONTROLLER. FAN OPERATE VIA ON-OFF WALL SWITCH COMPLETE WITH LED LIGHTS NEXT TO ROOM LIGHT SWITCH

NOTES:
- FAN MOTORS FOR DUCTED SYSTEMS SHALL BE SIZED TO ALLOW FOR 110% DESIGN AIRFLOW AGAINST THE CORRESPONDING INCREASE IN SYSTEM RESISTANCE (120%).
- FAN MOTOR kW IS INDICATIVE ONLY, TO BE CONFIRMED BY MANUFACTURER.
- FAN NOISE SELECTION SHALL MEET AS 2107.
- COORDINATE WITH ELECTRICAL TRADE FOR POWER SUPPLY.
- PROVIDE EQUIPEMENT WEIGHTS TO STRUCTURAL ENGINEER/BUILDER BEFORE INSTALLATION.
- ROOF FANS TO BE COLORBOND / PAINTED TO MATCH THE ROOF.
- ALL FANS SHALL BE PROVIDE WITH INTERFACE/MODULE CARD FOR CONNECTIONS TO EXISTING BMS

Rev	Date	Amendment Description	By	Chk
A	26/01/26	PRELIMINARY ISSUE	DT	HR
B	14/04/26	PRELIMINARY ISSUE	DT	HR
C	11/05/26	PRE TENDER ISSUE	DT	HR
T1	22/05/26	TENDER ISSUE	DT	HR
T2	03/07/26	TENDER ISSUE	DT	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project
WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title
MECHANICAL SERVICES
LEGEND, GENERAL NOTES & SCHEDULES

Scale	NTS @ A1	Checked	HR
Date	03/07/2026	Approved	HR
Drawn	AH	Verified	HR

Project No.	Drawing No.	Revision
PJ316	M000	T2

Status
TENDER ISSUE

Sheet No. of

© Ofek A1

GENERAL:

1. THESE NOTES SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.

2. ALL DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO THE START OF ANY WORK. ENGINEERS DRAWINGS AND/OR SKETCHES SHALL NOT BE SCALED.

3. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE RELEVANT CURRENT A.S. CODES AND TO THE PROJECT SPECIFICATIONS.

4. ALL HYDRAULIC WORK SHALL BE IN ACCORDANCE WITH THE CURRENT REGULATIONS AND REQUIREMENTS OF ALL RELEVANT STATUTORY AUTHORITIES

REFERENCE DOCUMENTS:

1. GENERAL

EXCEPT AS WHERE STATED IN WRITTEN CONTRACT OR SPECIFICATION TO THE CONTRARY, ALL WORK SHALL MEET THE REQUIREMENTS OF RELEVANT AUSTRALIAN STANDARDS OR CODES OF PRACTICE, DATA SHEETS AND DRAWINGS.

THE LATEST ISSUE OF THE AFOREMENTIONED DOCUMENTS AT THE TIME OF THE CONTRACT, SHALL FORM PART OF THIS SPECIFICATION.

2. AUSTRALIAN STANDARDS

AS - 1170.4	EARTHQUAKE CODE.
AS - 1167	WELDING AND BRAZING - FILLER METALS.
AS - 1345	IDENTIFICATION OF THE CONTENTS OF PIPES, CONDUITS AND DUCTS.
AS - 1432	COPPER TUBES FOR PLUMBING, GAS FITTING AND DRAINAGE APPLICATION.
AS - 1668.1	THE USE OF VENTILATION & AIR CONDITIONING IN BUILDINGS (FIRE & SMOKE CONTROL IN BUILDING)
AS-1668.2	THE USE OF VENTILATION & AIR CONDITIONING IN BUILDINGS (MECHANICAL VENTILATION IN BUILDING)
AS-3000	SAA WIRING RULES
AS-3500	PLUMBING & DRAINAGE CODES
AS-4041	PRESSURE PIPING
AS-4254	DUCTWORK FOR AIR HANDLING SYSTEMS IN BUILDINGS
AS-4426	THERMAL INSULATION OF PIPEWORK, DUCTWORK & EQUIPMENT

3. CODES OF PRACTICE

BUILDING ACT 2003 AND BUILDING REGULATIONS 2018
PLUMBING REGULATIONS 2008
NATIONAL CONSTRUCTION CODE/ BUILDING CODE OF AUSTRALIA
ENVIRONMENT PROTECTION AUTHORITY REGULATIONS
LOCAL AUTHORITY REGULATIONS
OCCUPATIONAL HEALTH & SAFETY - PLANT REGULATIONS

4. SCOPE OF WORK

SUPPLY, INSTALL, COMMISSION AND WARRANT EXHAUST SYSTEMS TO SERVE TOILETS, KITCHEN, CHANGE ROOMS AND STORE INCLUDING FAN, INSULATION, DUCTWORK, SPEED CONTROLLER, NON RETURN DAMPERS, RUN ON TIMER, LABELLING, EQUIPMENT PLATFORM, VIBRATION ISOLATIONS, SEISMIC RESTRAINTS, AND ASSOCIATED WIRING, POWER SUPPLY, ELECTRICS AND CONTROLS.

SUPPLY, INSTALL, COMMISSION AND WARRANT NEW AIR CONDITIONING SYSTEMS AS SHOWN ON DRAWINGS AND AS PER EQUIPMENT SCHEDULES. WORKS INCLUDES DUCTWORK, PIPEWORK, ACOUSTIC INSULATION, DIFFUSERS, SUPPORTS, POWER SUPPLY, WIRING AND CONTROLS. WIRED THERMOSTAT CONTROLLER FOR AC's AS SHOWN ON DRAWINGS.

SUPPLY, INSTALL, COMMISSION AND WARRANT KITCHEN EXHAUST SYSTEM INCLUDING FAN, KITCHEN CANOPY, ACOUSTIC INSULATION, DUCTWORK, VARIABLE SPEED DRIVE, DAMPERS, CONTROL PANEL, LABELLING, EQUIPMENT PLATFORM, VIBRATION ISOLATIONS, SEISMIC RESTRAINTS, AND ASSOCIATED WIRING, POWER SUPPLY, ELECTRICS AND CONTROLS. PROVIDE COMMERCIAL KITCHEN CANOPY AS LISTED IN THE KITCHEN EXHAUST CANOPY SCHEDULE.

SUPPLY, INSTALL, COMMISSION AND WARRANT OUTDOOR AIR FAN SYSTEMS FOR SPACES AS INDICATED ON DRAWINGS. EACH SYSTEM C/W DEDICATED OUTSIDE AIR FAN, DUCTWORK, DAMPER, FILTERS, MOTORISED DAMPER, GRILLE, POWER SUPPLY AND CONTROLS. DEDICATED AIR INTAKE DUCT AND LOUVRE/ROOF COWL PROVIDED FROM OUTSIDE. POWER VIA LOCAL MSSB AND CONTROLS VIA LOCAL SWITCH AND BMS.

PROVIDE ELECTRICAL WORK INCLUDING SUPPLY AND INSTALLATION OF 1-OFF MECHANICAL SERVICES SWITCHBOARDS (MSSB) TO SERVE ALL MECHANICAL PLANT . MECHANICAL CONTRACTOR SHALL EXTEND AND WIRE FROM MECHANICAL SERVICES SWITCHBOARD TO ALL ITEMS OF MECHANICAL SERVICES PLANT AND EQUIPMENT AS REQUIRED INCLUDING ALL POWER AND CONTROL WIRING BETWEEN ISOLATORS, EQUIPMENT AND CONTROLS.

TESTING AND COMMISSIONING (BY NEBB/TACA CERTIFIED COMMISSIONING AGENT) OF ALL MECHANICAL PLANT AND PROVIDE REPORT AND CERTIFICATES OF COMPLIANCE.

O&M MANUAL DOCUMENTS INCLUDING SHOP DRAWINGS

ROUTINE MAINTENANCE DURING 12 MONTHS DEFECTS LIABILITY PERIOD AND WARRANTY INSTALLATION OF MECHANICAL PLANT FOR 12 MONTHS.

IDENTIFICATION AND LABELLING FOR ALL MECHANICAL PLANT.

TESTING AND COMMISSIONING OF ALL MECHANICAL PLANT AND PROVIDE CERTIFICATES OF COMPLIANCE.

5. PIPEWORK AND FITTINGS:

1. GENERAL

A. ALL PIPEWORK SHALL BE SUPERVISED TO COMPLETION UNDER THE DIRECTION OF A QUALIFIED AND SUITABLY EXPERIENCED TRADESPERSON.

B. ALL PIPEWORK WITHIN OCCUPIED AREAS OF THE BUILDING SHALL BE CONCEALED IN WALL CAVITIES, RISER SHAFTS AND THE CEILING SPACE EXCEPT FOR CONNECTIONS TO EXPOSED EQUIPMENT AND FITTINGS. ALL EXPOSED PIPEWORK SHALL BE PAINTED.

2. DRAIN PIPE

A. DRAIN PIPES SHALL BE TYPE B HARD DRAWN COPPER TUBE IN ACCORDANCE WITH AS 1432.

B. PIPING AND FITTINGS SHALL BE JOINED BY LAPPED BRAZED JOINTS IN ACCORDANCE WITH AS 3688. THE BRAZING ALLOY SHALL BE OF THE SILVER SOLDER TYPE IN ACCORDANCE WITH AS 1167.

C. THE PIPE SHALL BE OF THE PRE-INSULATED TYPE, AS SUPPLIED"BY ENFIELD METALS " AND CALLED "POLYLAG PREMIUM" OR APPROVED EQUIVALENT.

3. REFRIGERANT PIPE

A. REFRIGERANT SHALL BE TYPE A HARD DRAWN COPPER TUBE IN ACCORDANCE WITH AS 1432. PIPING AND FITTINGS SHALL BE JOINED BY LAPPED BRAZED JOINTS IN ACCORDANCE WITH AS 3688. THE BRAZING ALLOY SHALL BE OF THE SILVER SOLDER TYPE IN ACCORDANCE WITH AS 1167.

B. THE REFRIGERANT PIPE SHALL BE INSULATED WITH EXPANDED FOAM INSULATION TYPE 'ARMAFLEX' OR APPROVED EQUIVALENT.

C. REFRIGERANT PIPE SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

4. PIPE SUPPORTS

A. ALL PIPES SHALL BE PROPERLY AND SUBSTANTIALLY SUPPORTED BY HANGERS, BRACKETS CLIPS OR SUPPORTS, DESIGNED TO SUIT THE REQUIREMENTS OF EACH SUPPORT POINT.

B. SUPPORT SHALL BE OF A MATERIAL SIMILAR OR COMPATIBLE WITH THE PIPE BEING SUPPORTED, AND SHALL ALLOW FOR EXPANSION AND HAVE PROVISION FOR ADJUSTING GRADE AND ALIGNMENT.

C. FOR INSULATED PIPES, THE PIPE SUPPORT SHALL BE OF THE INSULATED TYPE, CONSISTING OF HIGH BEARING LOAD INSULATION.

D. HORIZONTAL PIPES SHALL BE NEATLY GROUPED TOGETHER WITH THE TOP SURFACE OF EACH PIPE BEING AT THE SAME LEVEL.

E. HANGERS/SUPPORTS SPACINGS SHALL BE AS FOLLOWS:

NORMAL PIPE DIA (MM)	MAXIMUM SPACING (MM)
UP TO 15 INCLUSIVE	1800
20 TO 32 INCLUSIVE	2400
40 TO 80 INCLUSIVE	3000
100 TO 150 INCLUSIVE	3600

DUCTWORK AND FITTINGS:

1. GENERAL

THE DUCTWORK SHALL BE MADE AND INSTALLED AS PER AS4254 DUCTWORK FOR AIR HANDLING SYSTEMS IN BUILDINGS.

THE FOLLOWING TYPE OF DUCTWORK IS TO BE USED, IN THE LOCATIONS SHOWN ON CONTRACT DRAWINGS:-

TYPE 4 - INTERNAL, RECTANGULAR, INSULATED
TYPE 9 - INTERNAL, CIRCULAR, FLEXIBLE, INSULATED

2. FLEXIBLE DUCT CONNECTIONS

THE FLEXIBLE DUCT CONNECTIONS SHALL BE CONSTRUCTED FROM A FLEXIBLE SLEEVE WITH GALVANIZED STEEL EDGES.

THE FLEXIBLE SLEEVE SHALL BE NON-COMBUSTIBLE, FIRE RESISTANT, WEATHERPROOF AND AIR TIGHT.

THE SLEEVE SHALL BE VENTILEX, AS SUPPLIED BY "I & M INDUSTRIES" OR APPROVED EQUIVALENT.

THE METAL EDGES OF THE DUCT CONNECTION SHALL BE FITTED WITH GALVANIZED STEEL ANGLE FLANGES THAT MATCH THE ADJACENT DUCTWORK AND EQUIPMENT.

3. INSTALLATION OF FILTER CELLS TO DUCTWORK

WHERE DUCT PIECES HAVE FILTER CELLS INSTALLED, THE INNER CASE SHALL BE FITTED WITH THE APPROPRIATE SIZED GALVANIZED STEEL CHANNELS TO SUPPORT THE FILTER CELLS. IN ADDITION AN ACCESS PANEL SHALL BE INSTALLED ON THE SIDE OF THE DUCT PIECE TO FACILITATE THE REMOVAL OF THE FILTER CELLS.

THE SUPPORT CHANNELS AND ACCESS PANELS SHALL BE DESIGNED TO MINIMIZE THE AMOUNT OF AIR BYPASSING THE CELLS OR LEAKING INTO THE DUCT.

THE FILTER ACCESS PANELS SHALL BE OF THE TYPE SUPPLIED BY & M INDUSTRIES " OR APPROVED EQUIVALENT.

4. DUCT SUPPORTS

ALL DUCTS SHALL BE PROPERLY AND SUBSTANTIALLY SUPPORTED BY HANGERS, BRACKETS OR SUPPORTS DESIGNED TO SUIT THE REQUIREMENTS OF EACH SUPPORT POINT.

DUCT SUPPORTS SHALL PROVIDE RESISTANCE TO EARTHQUAKE LOADS IN ACCORDANCE WITH AS 1170.4.

THE SUPPORTS SHALL BE CONSTRUCTED FROM MILD STEEL ANGLES, CHANNELS, PLATES AND RODS, HOT DIPPED GALVANIZED AFTER FABRICATION.

THE MAXIMUM DISTANCE BETWEEN DUCT SUPPORTS SHALL BE 2400 MM.

5. GRILLES

AIR GRILLES SHALL CONFORM TO THE DETAILS NOMINATED ON CONTRACT DRAWINGS.

INSTALLATION OF THE GRILLES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

SURFACE PREPARATION & IDENTIFICATION:

1. ALL PARTS OF THE WORK INSTALLED SHALL BE PAINTED (UNLESS SPECIFICALLY EXCLUDED) WITH FIRST QUALITY PAINTS TO THE APPROVAL OF THE SUPERINTENDENT.

2. PAINT SHALL BE SUITABLE IN ALL RESPECTS FOR THE ENVIRONMENTAL CONDITIONS IN WHICH IT SHALL BE LOCATED AND SHALL BE CONFIRMED BY THE SUPERINTENDENT IF EXPOSED

3. ALL ITEMS OF PLANT, MACHINERY AND EQUIPMENT SUPPLIED PAINTED SHALL BE GIVEN ONE FINISHING COAT OF FULL GLOSS ENAMEL, EXCEPT WHERE THE MANUFACTURER'S STANDARD FINISH IS APPROVED BY THE SUPERINTENDENT.

4. ALL EQUIPMENT SHALL BE SUITABLY LABELED WITH EQUIPMENT NUMBERS TO MATCH THE EXISTING SITE CONDITION.

5. FOR EXTERNAL EQUIPMENT IDENTIFICATION LABELS SHALL BE STAINLESS STEEL (ETCHED). FOR INTERNAL EQUIPMENT IDENTIFICATION LABELS SHALL BE TRAFFOLITE.

ELECTRICAL:

1. GENERAL

A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT REGULATIONS AND REQUIREMENTS OF ALL RELEVANT STATUTORY AUTHORITIES.

B. THE REQUIREMENTS OF AS/NZS 3000:2000 - WIRING RULES, AND AS/NZS 3008.1.1 - SELECTION OF CABLES - AUSTRALIAN CONDITIONS, AND VICTORIAN SERVICE AND INSTALLATION RULES SHALL BE TAKEN AS THE MINIMUM STANDARD FOR THIS INSTALLATION.

2. POWER SUPPLY

A. FINAL CONNECTION POWER SUPPLY ISOLATORS AND CABLES/WIRING TO ALL NEW MECHANICAL PLANT BY MECHANICAL CONTRACTOR FROM MSSB COORDINATE ON SITE WITH ELECTRICAL TRADE FOR SUB-NAIN CABLES.

B. PROVIDE ELECTRICAL ISOLATORS TO ALL MECHANICAL PLANT FROM MSSB. SHALL SERVE, BUT NOT LIMITED TO, THE FOLLOWING MECHANICAL EQUIPMENT :-
- AIR CONDITIONING SYSTEMS
- EXHAUST FANS AND OUTDOOR AIR FANS.
- KITCHEN HOOD

C. A TIMER CONTROL FOR THIS SHALL BE INSTALLED IN ACCORDANCE WITH NCC SECTION J REQUIREMENTS.

D. COORDINATE WITH ELECTRICAL TRADE FOR CIRCUIT BREAKERS AND TERMINATION REQUIREMENTS ON SITE.

3. CABLES AND WIRING

A. UNDER NO CIRCUMSTANCES SHALL THE COLOUR GREEN OR GREEN/YELLOW BE USED FOR ANY WIRING OTHER THAN EARTHING IN ANY WIRING SYSTEM.

B. CABLES AND WIRING SIZING, SELECTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH SERVED MECHANICAL EQUIPMENTS MANUFACTURER'S REQUIREMENTS.

4. CONDUITS

A. CONDUITS USED THROUGHOUT THE INSTALLATION SHALL COMPLY WITH AS/NZS 3000:2007 - WIRING RULES, AS/NZS 2053 - CONDUITS AND FITTINGS FOR ELECTRICAL INSTALLATIONS, AND VICTORIAN SERVICE & INSTALLATION RULES.

B. THE MINIMUM CONDUIT SIZE IS TO BE 20 mm. ALL CONDUITS SHALL BE SIZED TO HAVE A MINIMUM OF 30% SPARE CAPACITY.

C. UNLESS SPECIFIED OTHERWISE, ALL CONDUITS AND CONDUIT FITTINGS SHALL BE OF RIGID HEAVY DUTY PVC, COLOURED ORANGE. LARGE RADIUS BENDS SHALL BE USED AT ALL MAJOR CHANGES IN DIRECTION.

D. GALVANIZED CONDUIT SHALL BE USED IN THE FOLLOWING LOCATIONS:

- WHERE EXPOSED TO DIRECT SUNLIGHT,
- WHERE EXPOSED TO TEMPERATURES AT OR ABOVE 60°C,
- WHERE EXPOSED TO RISK OF MECHANICAL DAMAGE.

E. CONDUITS SHALL BE INSTALLED IN STRAIGHT CONTINUOUS RUNS WHEREVER PRACTICAL. EASY SETS SHALL BE USED FOR ALL MINOR CHANGES OF DIRECTION AND CONDUITS SHALL IN NO PART BE UNDER STRESS.

F. ANY INCORRECTLY LOCATED OR DAMAGED CONDUIT CAUSED BY THE CONTRACTOR'S NEGLECT SHALL BE IMMEDIATELY RELOCATED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

G. DURING INSTALLATION AND BUILDING OPERATIONS, THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY CAPPED OR PLUGGED AND THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT THE INGRESS OF MOISTURE OR FOREIGN MATTER. IMMEDIATELY PRIOR TO DRAWING IN CABLES, THE CONDUITS SHALL BE THOROUGHLY SWABBED OUT.

CONTROLS & INSTRUMENTS:

1. GENERAL

A. ALL CONTROLS AND INSTRUMENTS NECESSARY FOR OPERATION OF MECHANICAL EQUIPMENT SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

B. AUTOMATIC CONTROLS SHALL PROVIDE INDEPENDENT STAND-ALONE OPERATION OF EQUIPMENT.

2. INSTRUMENTS

A. ALL INSTRUMENTS SHALL BE MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

B. BRACKETS, SUPPORT, FASTENERS, ETC, SHALL BE CONSTRUCTED FROM EITHER GALVANIZED STEEL, STAINLESS STEEL OR BRASS, DEPENDING ON THE APPLICATION. ALL MATERIALS ARE TO BE SIMILAR OR COMPATIBLE.

3. IDENTIFICATION

A. ALL CONTROLS AND INSTRUMENTS SHALL BE SUITABLY LABELED WITH NUMBERS TO MATCH THE EXISTING SITE CONDITIONS.

B. FOR EXTERNAL CONTROLS AND INSTRUMENTS IDENTIFICATION LABELS SHALL BE STAINLESS STEEL (ETCHED). FOR INTERNAL EQUIPMENT IDENTIFICATION LABELS SHALL BE TRAFFOLITE.

4. OPERATIONS DESCRIPTION OF THE MECHANICAL SYSTEM:

A. AIR CONDITIONONING SYSTEM EACH AIR CONDITIONING UNIT TO LINKED TO BMS AND BE PROVIDED WITH STAND-ALONE . WALL MOUNT HARD WIRED DIGITAL THERMOSTAT CONTROLLER. THERMOSTAT CONTROLLER LOCATION TO BE CONFIRMED ON SITE WITH ARCHITECTS/ENGINEER.

B. VENTILATION FAN.
REFER SCHEDULE OF VENTILATION FAN (M000) FOR FAN SEQUENCE OF OPERATION REQUIREMENTS.

FAN SHALL OPERATE DURING TENANT OPERATION HOURS WITH TIME CLOCK CONTROL.

C. OPERATION OF THE KITCHEN EXHAUST FAN (KEF-1) SHALL BE CONTROLLED BY A LOCAL CONTROL PANEL (WITH FAULT/ON/OFF STATUS) THAT IS MANUALLY OPERATED. CONTROL PANEL COMPLETE WITH PUSH BUTTONS "LOW-OFF-HIGH" SETTING FOR KEF. CONFIRM FINAL LOCAL CONTROL PANEL ON SITE.

DURING FIRE MODE, KITCHEN EXHAUST FANS SHALL CONTIUNE TO OPERATE AT FULL SPEED AND MAKEUP AIR FAN SHALL SHUT DOWN.
CONTRACTOR TO PROVIDE WARNING LABEL (NEXT TO KITCHEN CONTROL PANEL) INDICATING "WARNING: THIS KITCHEN VENTILATION SYSTEM SHALL NOT BE TURNED OFF DURING A FIRE"

MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING FOR ALL MECHANICAL EQUIPMENT.

D. ALL NEW MECHANICAL PLANT SHALL INTERFACE WITH EXISTING BMS SYSTEM. BMS CONTRACTOR SHALL UPGRADE GRAPHICS AND REPROGRAMMING. CONTROL POINTS FOR EQUIPMENT SHALL MATCH EXISTING EQUIPMENT. CONTRACTOR SHALL ENGAGE INCUMBENT BMS CONTRACTOR FOR THESE BMS WORKS.

NOISE AND VIBRATION:

1. GENERAL

A. ADDITIONAL PRECAUTIONS MAY BE NECESSARY TO ENSURE THAT OPERATION OF THE EQUIPMENT INSTALLED DOES NOT RESULT IN NOISE LEVELS OR VIBRATION TRANSMISSION ABOVE THE LIMITS SPECIFIED.

B. IN THE EVENT OF UNDUE NOISE OR VIBRATION OCCURRING IN ANY AREAS, TESTS SHALL BE MADE BY AN INDEPENDENT TESTING AUTHORITY AS DIRECTED BY THE SUPERINTENDENT.

2. AIR BORNE NOISE

A. OCTAVE BAND SOUND PRESSURE LEVELS IN THE OCCUPIED SPACES THROUGHOUT THE BUILDING DUE TO DUCT BORNE FAN NOISE, DUCT BORNE TURBULENCE NOISE, DUCT LEAKAGE, TURBULENCE NEAR DAMPERS AND AIR OUTLETS, SHALL BE AS LOW AS POSSIBLE AND IN PARTICULAR SHALL NOT EXCEED THE SPECIFIED MAXIMUM NOISE LEVELS.

B. WHEN MEASURED IN ROOMS, THE MAXIMUM PERMISSIBLE NOISE LEVEL AT A DISTANCE OF 15 METERS FROM THE SUPPLY AIR OUTLETS AND/OR EXHAUST AIR GRILLES SHALL BE 40dB(A) Max.

C. THE ATTENUATION OF FAN NOISE SHALL BE PROVIDED AS NECESSARY BY INTERNAL ACOUSTIC LINING OF DUCTWORK AND ACOUSTIC FLEXIBLE DUCTWORK.

STRUCTURE BORNE NOISE

3. A. THE TRANSMISSION OF NOISE AND VIBRATION TO THE STRUCTURE SHALL BE AS LOW AS POSSIBLE AND IN PARTICULAR THE FOLLOWING REQUIREMENTS SHALL BE MET.

B. FANS, PUMPS, RECIPROCATING COMPRESSORS AND SIMILAR EQUIPMENT (COMPLETE WITH PULLEYS, BELTS, ETC) SHALL BE BALANCED SO THAT OUT OF BALANCE FORCES DO NOT EXCEED THE REQUIREMENTS SPECIFIED ON THE DATA SHEETS. TEST CERTIFICATION SHALL BE PROVIDED ON REQUEST FOR ANY ITEMS OF EQUIPMENT.

C. EQUIPMENT SHALL BE ISOLATED ON MOUNTINGS OF THE TYPE SPECIFIED HAVING TRANSMISSIBILITY NOT EXCEEDING THE SPECIFIED. TYPES OF MOUNTINGS SHALL BE AS SPECIFIED ELSEWHERE.

D. ALL ROTATING AND RECIPROCATING EQUIPMENT SHALL BE CONNECTED TO THEIR RESPECTIVE DUCTWORK, PIPING AND ELECTRICAL POWER SUPPLIES WITH FLEXIBLE CONNECTIONS.

AS BUILT DRAWINGS & MANUALS

1. THE CONTRACTOR SHALL KEEP A COMPLETE RECORD ON PRINTS OF ALL ALTERATIONS AS THE INSTALLATION IS ACTUALLY BUILT, TO A SCALE OF NOT LESS THAN AS SHOWN ON THE CONTRACT DRAWINGS, AND SHALL SUBMIT THESE TO THE SUPERINTENDENT FOR CHECKING.

2. THE CONTRACTOR SHALL PROVIDE COMPLETED AS-BUILT AUTOCAD DRAWINGS.

3. THE CONTRACTOR SHALL PROVIDE THREE COPIES OF OPERATION AND MAINTENANCE MANUALS. EACH MANUAL TO INCLUDE CERTIFICATE OF COMPLIANCE ISSUED BY CONTRACTOR(S), VENDOR INFORMATION, AS-BUILT DOCUMENTS, TEST AND COMMISSIONING RESULTS, AND PERIODIC MAINTENANCE REQUIREMENTS. EACH MANUAL SHALL BE PROVIDED WITH A CD ROM OF ALL ELECTRONIC INFORMATION INCLUDING AUTOCAD DRAWING FILES.

TESTING AND COMMISSIONING:

GENERAL

1. A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING AND COMMISSIONING OF ALL HVAC SYSTEMS, WHICH INCLUDES NEW INSTALLATIONS.

B. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY EQUIPMENT, MATERIALS AND SERVICES FOR TESTING.

C. ALL EQUIPMENT SHALL BE FULLY CAPACITY AND FUNCTION TESTED. ALL PIPEWORK AND DUCTWORK SHALL BE FULLY CLEANED BEFORE TESTS ARE CARRIED OUT.

VENTILATION

2. A. TESTS SHALL BE GENERALLY CARRIED OUT AND DOCUMENTED IN ACCORDANCE WITH SMACNA MANUAL FOR THE BALANCING AND ADJUSTMENT OF AIR DISTRIBUTION SYSTEMS . ALL TESTING AND COMMISSIONING SHALL BE CARRIED OUT BY A NEBB CERTIFIED TECHNICIAN.

B. EXHAUST SYSTEMS

THE FAN SHALL BE ADJUSTED BY MEANS OF EITHER AN INTEGRAL DAMPER, OR BLADE PITCH, OR CHANGING PULLEYS TO GIVE THE SPECIFIED AIR QUANTITY TO WITHIN +10%, -0%.

ALL GRILLES SHALL BE ADJUSTED BY MEANS OF BALANCING DAMPERS TO GIVE THE AIR QUANTITIES SPECIFIED TO WITHIN +5%, -0%.

AIR LEAK TESTS SHALL BE CARRIED OUT ON THE AIR HANDLING SYSTEM IF THE AIR QUANTITY MEASURED AT THE FAN IS FOUND TO BE GREATER THAN 10% DIFFERENT FROM THE SUM OF THE AIR QUANTITIES AT THE GRILLES.

3. REFRIGERATION PIPEWORK

PRIOR TO CHARGING WITH REFRIGERANT GAS, ALL REFRIGERATION PIPEWORK SHALL BE TESTED WITH NITROGEN. THE TEST SHALL BE FOR A PERIOD OF EIGHT HOURS AT ONE AND A HALF TIMES WORKING PRESSURE.

4. CONTROLS AND INSTRUMENTS

ALL CONTROLS AND INSTRUMENTS SHALL BE FULLY FUNCTION TESTED IN THE PRESENCE OF A WITNESS NOMINATED BY THE SUPERINTENDENT.

5. ELECTRICAL

A. PRIOR TO ANY ELECTRICAL ENERGISATION, THE CONTRACTOR SHALL COMPLETE RELEVANT CHECKS REQUIRED FOR THE CERTIFICATE OF ELECTRICAL SAFETY.

B. THE CONTRACTOR SHALL SET ALL THERMAL OVERLOADS BASED ON MOTOR NAMEPLATE FULL LOAD CURRENTS, AND CHECK FOR OPERATION MANUALLY. DIRECTION OF ROTATION OF ALL DRIVES SHALL BE CHECKED ALONG WITH FUNCTIONAL CHECKS OF MOTOR ISOLATORS, STOP START STATIONS, SELECTOR SWITCHES AND SAFETY INTERLOCKS.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SETTING AND TESTING OF ALL AUTOMATIC CONTROLS TO GIVE CORRECT OPERATION OF THE SYSTEM TO THE SATISFACTION OF THE SUPERINTENDENT.

6. PERFORMANCE

A. ON COMPLETION OF SYSTEM COMMISSIONING THE CONTRACTOR SHALL CARRY OUT PERFORMANCE TESTS TO DEMONSTRATE OPERATION.

B. THE CONTRACTOR SHALL ALLOW TO MAKE ADJUSTMENTS AS DIRECTED BY THE SUPERINTENDENT TO IMPROVE PERFORMANCE AND SHALL REPEAT THE TEST TO THE SATISFACTION OF THE SUPERINTENDENT.

TABLE 1 COPPER PIPE SURFACES PAINTING

Surface Preparation	Degrease in accordance with AS 1627 Wipe clean with solvent soaked cloth.		
Surface Profile	Min	Max	
	First Coat	Second Coat	Third Coat
Material	Luxepoxy 4 White Primer	Acrathane IF 44663003	Repeat Second Coat
Bulletin No	PC 200	PC 218	
Thinner	Epoxy Thinner 92008925	Urethane Thinner 956630	
Colour	White	TBA	
Application	Brush or Roller	Brush or Roller	
Dry Film Thickness Min / Max	30 Microns 50 Microns	30 Microns 50 Microns	
Number of Packs	Two	Two	
Recoat Time 25 Deg CRH Min / Max	8 Hours Min No Max	16 Hours Min No Max	
Note: (1) This system must be applied in accordance with the schedule, specification, attachments, relevant data sheets and all other written instructions.			

TABLE 2 GALVANIZED STEEL PIPE SURFACES PAINTING

Surface Preparation	Degrease in accordance with AS 1627		
Surface Profile	Min	Max	
	First Coat	Second Coat	Third Coat
Material	Galvanized Iron Primer 63213521	Dulux Acrylic Gloss Enamel	Repeat second coat for full opacity
Bulletin No	AP 154		
Thinner	Water	Water	
Colour	Pale Yellow	TBA	
Application	Brush, Roller or Spray	Brush, Roller or Spray	
Dry Film Thickness Min / Max	18 Microns 25 Microns	20 Microns 30 Microns	
Number of Packs	One	One	
Recoat Time 25 Deg CRH Min / Max	2 Hours Min 6 Hours Max	2 Hours Min No Max	
Note: (1) This system must be applied in accordance with the schedule, specification, attachments, relevant data sheets and all other written instructions.			

Rev	Date	Amendment Description	By	Chk
A	26/01/26	PRELIMINARY ISSUE	DT	HR
B	14/04/26	PRELIMINARY ISSUE	DT	HR
C	11/05/26	PRE TENDER ISSUE	DT	HR
T1	22/05/26	TENDER ISSUE	DT	HR
T2	03/07/26	TENDER ISSUE	DT	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

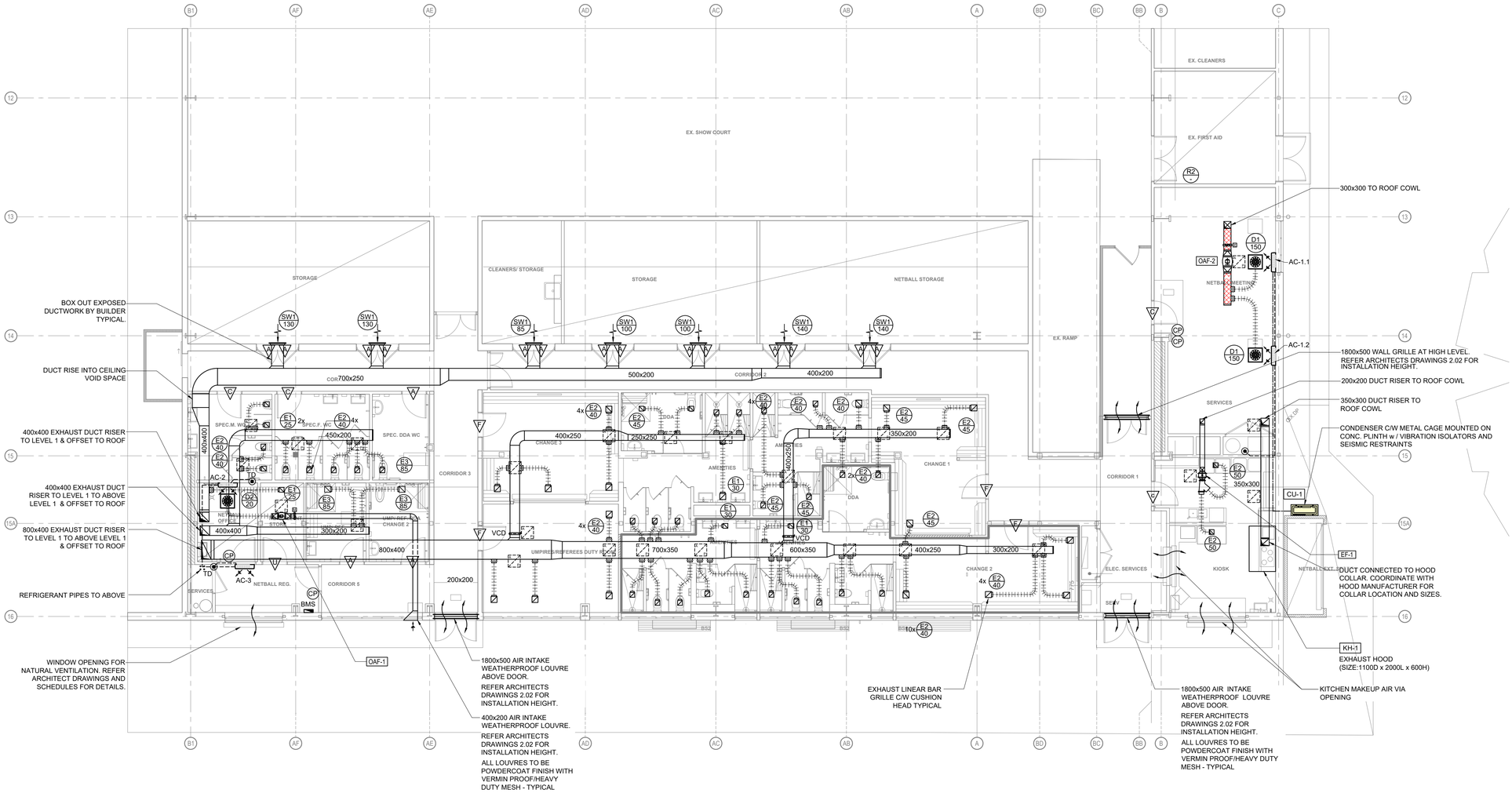
MECHANICAL SERVICES

SPECIFICATION & SCOPE OF WORK

Scale	NTS @ A1	Checked	HR
Date	03/07/2026	Approved	HR
Drawn	AH	Verified	HR
Project No.	PJ316	Drawing No.	M001
Revision	T2		
Status	TENDER ISSUE		
Sheet No.	of	© Ofek A1	

GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. PROVIDE NECESSARY TRANSITIONS AND OFFSETS TO SUIT FAN/COWL CONNECTIONS. COORDINATE WITH STRUCTURE AND OTHER SERVICES.
3. POSITION OF MECHANICAL PLANT AND DUCTWORK LAYOUT ARE INDICATIVE AND DIAGRAMMATIC ONLY, FINAL PANT AND DUCTWORK LOCATION TO BE CONFIRMED ON SITE CONTRACTOR TO MAKE ALLOWANCE FOR DUCT OFFSETS AND TRANSITION. CONTRACTOR TO PROVIDE.
4. MOUNTING OF EQUIPMENT ON THE STRUCTURE SHALL BE INSPECTED & APPROVED BY A STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
5. FINAL LOCATIONS OF CONTROLS TO BE CONFIRMED BY SITE SUPERVISOR PRIOR TO INSTALLATION. INSTALLATION.
6. MAINTAIN FIRE SEPARATION AS SPECIFIED BY THE BUILDING CERTIFIER ESPECIALLY WHEN CONSIDERING PENETRATION OF WALLS AND BETWEEN FIRE COMPARTMENTS.
7. BUILDER TO PROVIDE CEILING ACCESS PANELS AS SHOWN ON THIS DRAWING.
8. MECHANICAL CONTRACTOR TO PROVIDE AC CONDENSATE DRAIN PIPES TO NEAR TUNDISHES. COORDINATE WITH HYDRAULIC TRADE ON SITE FOR FINAL TUNDISHES LOCATION.
9. KITCHEN DUCTWORK SHALL BE MANUFACTURED TO AS 1668.2. PROVIDE DUCT ACCESS PANEL FOR KITCHEN DUCTWORK EVERY 3m AND ELBOW.
10. ALL EXPOSED REFRIGERANT PIPES SHALL BE PROVIDED WITH METAL CLADDING TO PROTECT FROM OUTDOOR WEATHER
11. ALL LOUVRES TO BE POWDERCOAT FINISH WITH VERMIN PROOF/HEAVY DUTY MESH.



Rev	Date	Amendment Description	By	Chk
A	26/01/26	PRELIMINARY ISSUE	DT	HR
B	14/04/26	PRELIMINARY ISSUE	DT	HR
C	11/05/26	PRE TENDER ISSUE	DT	HR
T1	22/05/26	TENDER ISSUE	DT	HR
T2	03/07/26	TENDER ISSUE	DT	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

MECHANICAL SERVICES

GROUND FLOOR PLAN HVAC LAYOUT

Scale	1:100 @ A1	Checked	HR
Date	03/07/2026	Approved	HR
Drawn	AH	Verified	HR

Project No.	Drawing No.	Revision
PJ316	M100	T2

Status

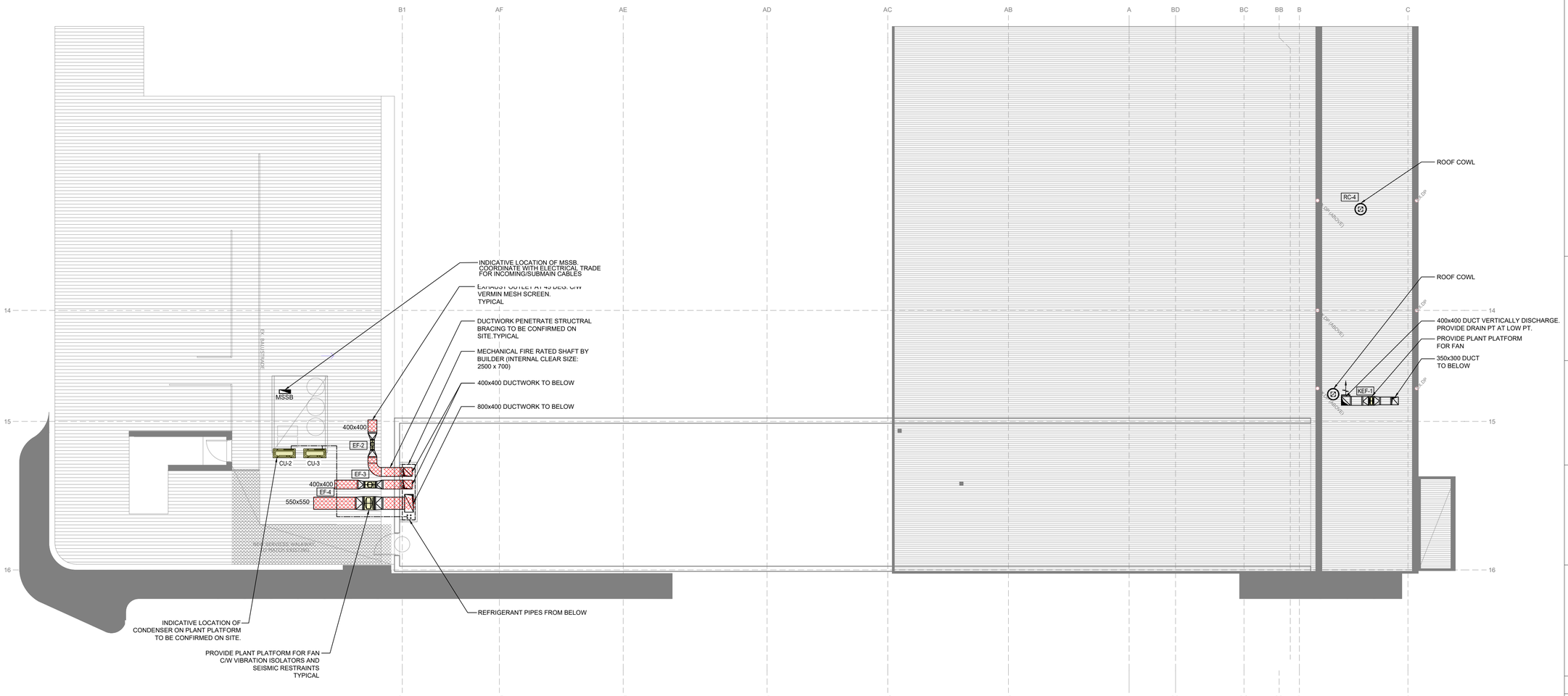
TENDER ISSUE

Sheet No. - of -

© Ofek A1

GENERAL NOTES:

1. THESE NOTES SHALL BE READ WITH SPECIFICATIONS AND ALL OTHER RELEVANT DRAWINGS AND/OR SKETCHES. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. ALL ROOF PENETRATIONS AND UPSTANDS BY BUILDER TRADES. FINAL PENETRATION, LOCATIONS TO BE COORDINATED BY MECHANICAL CONTRACTOR. COORDINATE PENETRATIONS WITH ROOF STRUCTURAL, BEAMS AND OTHER SERVICES.
3. ALL OVER-FLASHING AROUND DUCTWORK AND PIPE-WORK PENETRATIONS THROUGH ROOF BY MECHANICAL CONTRACTOR.
4. PROVIDE NECESSARY TRANSITIONS AND OFFSETS TO SUITE FAN/COWL CONNECTIONS. COORDINATE WITH STRUCTURE AND OTHER SERVICES.
5. DUCTWORK LAYOUT ARE DIAGRAMMATIC/INDICATIVE ONLY. CONTRACTOR TO MAKE ALLOWANCE FOR DUCT OFFSETS AND TRANSITION. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR CONSTRUCTION.
6. BUILDER TO PROVIDE SAFE ACCESS, LADDERS, HAND RAILS TO ROOF. REFER ARCHITECT DRAWINGS FOR DETAILS.
7. ALL MECHANICAL PLANT SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 8 OF AS 1170.4 COMPLETE WITH VIBRATION ISOLATOR AND SEISMIC RESTRAINTS.
8. ALL ROOF COWLS AND FANS SHALL BE POWDERCOATED TO MATCH THE ROOF.
9. ALL EXPOSED REFRIGERANT PIPES SHALL BE PROVIDED WITH METAL CLADDING TO PROTECT FROM OUTDOOR WEATHER.



Rev	Date	Amendment Description	By	Chk
A	26/01/26	PRELIMINARY ISSUE	DT	HR
B	14/04/26	PRELIMINARY ISSUE	DT	HR
C	11/05/26	PRE TENDER ISSUE	DT	HR
T1	22/05/26	TENDER ISSUE	DT	HR
T2	03/07/26	TENDER ISSUE	DT	HR

This drawing is based on information provided by others, and whilst Ofek endeavours to ensure the correctness of this information, no liability will be accepted for any errors or omissions caused by the use of this information

Client

Rural City of Wangaratta

Consulting Engineer

ofek BUILDING SERVICES PROFESSIONALS

Ofek Consulting Engineers
1/3 Janefield Drive,
Bundoora, 3083
Victoria, Australia
Tel: +61 3 8678 1712
Web: www.ofek.com.au
Email: info@ofek.com.au

Mechanical ♦ Electrical ♦ Hydraulic ♦ Fire ♦ ESD

Project

WANGARATTA SPORTS AQUATIC CENTRE - CHANGE/ AMENITIES

41 SCHILLING DR, WANGARATTA, VIC 3677

Drawing Title

MECHANICAL SERVICES

ROOF & UPPER FLOOR PLAN HVAC LAYOUT

Scale	1:100 @ A1	Checked	HR
Date	03/07/2026	Approved	HR
Drawn	AH	Verified	HR

Project No.	Drawing No.	Revision
PJ316	M200	T2

Status

TENDER ISSUE

Sheet No. - of -

© Ofek A1