

MoL NURSERY PROJECT
Electrical Package

NOTES :

1. Contractor shall submit shop drawings and materials submittals to the supervision team for their approval before installation and execution.
2. The appearance of all visible items is applied to architect's approval.
3. All dimensions are from structure to structure unless indicated otherwise. Elements of services indicated for coordination purposes. For full services layouts refer to Services Engineers drawings. Elements of structure indicated for coordination purposes. For full structure layouts refer to Structural Engineers drawings. Do not scale directly from drawing. All dimension to be checked on site prior to construction or fabrication of any elements. Any discrepancies between figured dimensions to be reported to architect for clarification prior to commencing work.

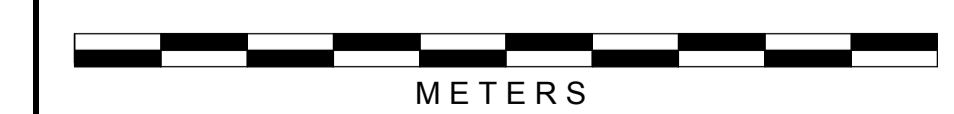
LIST OF DRAWINGS			
MECHANICAL DRAWINGS			
SHEET #	DRAWING TITLE	SCALE	REV.
E-001	ELECTRICAL LIST OF DRAWINGS	N.T.S.	
E-002	ELECTRICAL GENERAL NOTES	N.T.S.	
E-003	ELECTRICAL LEGEND 1/2	N.T.S.	
E-101	LIGHTING SYSTEM PLAN	1:50	
E-201	POWER SYSTEM PLAN	1:50	
E-301	POWER FOR MECHANICAL SYSTEM PLAN	1:50	

Purpose Of Issue	Rev.	Date	Approved
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Project:
MoL NURSERY

Title:
ELECTRICAL LIST OF DRAWINGS

Design: MEPJO	Drawn by: MEPJO	Checked: MEPJO
Scale / SIZE: 1:50 / A1	Date: APR. 2022	Approved: MEPJO



Drawing Number: E-001	Rev.:
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LIGHTNING & GROUNDING SYSTEM LEGEND		
REF.	BLOCK	DESCRIPTION
G-01		EARTH INSPECTION PIT WITH 160, 3600mm LONG GROUNDING ROD
G-02		PARALLEL ONE EARTH PIT AND TWO GROUNDING RODS EARTHING TRIANGLE
G-03		COPPER BOND EARTH ROD, 2400mm LONG AND 15mmØ
G-04		20X3.0 mm BARE COPPER TAPE MESHES
G-05		95mm² BARE COPPER STRANDED CONDUCTOR, GROUND PERIMETER CONDUCTOR, BURIED MIN. 600mm BELOW GROUND LEVEL UNLESS OTHERWISE SHOWN
G-06		BOND TO METALWORK (70mm² BARE COPPER MINIMUM)
G-07		RE-BAR DOWN CONDUCTOR FROM ROOF TOP LIGHTNING PROTECTION SYSTEM BOND TO RE-BAR OF STRUCTURAL COLUMNS AT GROUND LEVEL TO EARTH TERMINATION NETWORK
G-08		AIR TERMINAL

STANDARD POWER LEGEND			
BLOCK NAME	SYMBOL	NOTES	
PO-01		SOCKET OUTLET: 13AMP SIMPLEX, SWITCHED, SHUTTERED	
PO-02		SOCKET OUTLET: 13AMP DUPLEX, SWITCHED, SHUTTERED	
PO-03		SOCKET OUTLET: 16AMP SIMPLEX, SWITCHED, SHUTTERED	
PO-04		13A FUSED, SWITCHED CONNECTION UNIT WITH FLEX OUTLET, SHUTTERED	
PO-05		OR (as per project requirements)	CABLE OUTLET, MURAL.
PO-06		OR (as per project requirements)	CABLE OUTLET, CEILING.
PO-07		OR (as per project requirements)	CABLE OUTLET, FLOOR.
PO-08		POWER ISOLATOR, 3PHASE, X DENOTES FOR AMPERE RATING	
PO-09		POWER ISOLATOR, 1PHASE, X DENOTES FOR AMPERE RATING	
PO-10		SOCKET OUTLET: 13AMP, SIMPLEX SWITCHED, FLOOR/DESK MOUNTED, SHUTTERED	
PO-11		SOCKET OUTLET: 13AMP, DUPLEX SWITCHED, FLOOR/DESK MOUNTED, SHUTTERED	
PO-12		1 PHASE SOCKET OUTLET: WALL MOUNTED, X DENOTES FOR AMPERE RATING, INDUSTRIAL TYPE	
PO-13		1 PHASE SOCKET OUTLET: DESK MOUNTED, X DENOTES FOR AMPERE RATING, INDUSTRIAL TYPE	
PO-14		3 PHASE SOCKET OUTLET: WALL MOUNTED, X DENOTES FOR AMPERE RATING, INDUSTRIAL TYPE	
PO-15		FLEX OUTLET WITH 2M CABLE EXTENSION AND 3P FEMALE PLUG, EACH DROP SPLICING SHALL BE MADE IN THE CABLE TRAY	

GENERAL NOTES:
1. EACH BLOCK HAS ATTRIBUTE TAGS, MAKE SURE TO FILL THE PROPERTY IN THE SUITABLE TAG.
2. FOR THE FOLLOWING BLOCKS TWO TAGS ARE PROVIDED, TAG "A" FOR FEEDER (NORMAL, EMERGENCY, UPS), AND "WP" TAG FOR WEATHER PROOF / GFI PROTECTION, TABLE BELOW SHOWS DIFFERENT POSSIBILITIES FOR THE MENTIONED BLOCKS.

SAMPLE		
SYMBOL	SUPPLY	PROTECTION
	NORMAL	NO
	EMERGENCY	NO
	UPS	NO
	EMERGENCY	WEATHER PROOF
	UPS	GROUND FAULT CIRCUIT INTERRUPTER

STANDARD POWER LEGEND		
REF.	BLOCK	DESCRIPTION
PO-16		ONE COMPARTMENT FLOOR BOX COMPRISES OF ONE NUMBER 13A DUPLEX SOCKET OUTLETS & ONE RJ45 DATA OUTLET.
PO-17		SHAVER SOCKET OUTLET
PO-18		3PIN, 220V, 13A, SINGLE SWITCHED SOCKET OUTLET, LOCATED ABOVE CEILING.
PO-19		SOCKET OUTLET: 13AMP SIMPLEX, SWITCHED, SHUTTERED CEILING MOUNTED
PO-20		POWER FEEDING POINT FOR ELEVATION LIGHTING, OUTDOOR TYPE, COLD CATHODE 35W/M, PROJECTION SCREEN...etc
PO-21		POWER JUNCTION BOX.
PO-22		20A, SINGLE PHASE, FUSED CONNECTION FOR HAND DRYER (SPUR OUTLET)
PO-23		ELECTRICAL WATER HEATER
PO-24		X A, ONE GANGE DOUBLE POLE SWITCH WITH NEON
PO-25		SINGLE PHASE MINIATURE CIRCUIT BREAKER (MCB).
PO-26		THREE PHASE MINIATURE CIRCUIT BREAKER (MCB).
PO-27		SINGLE PHASE MOLDED CASE CIRCUIT BREAKER (MCCB).
PO-28		THREE PHASE MOLDED CASE CIRCUIT BREAKER (MCCB).
PO-29		THREE PHASE AIR CIRCUIT BREAKER
PO-30		ELECTRICAL CLOSET
PO-31		PANEL BOARD
PO-32		MAIN DISTRIBUTION BOARD
PO-33		EMERGENCY MAIN DISTRIBUTION BOARD
PO-34		SUB MAIN DISTRIBUTION BOARD SUB MAIN EMERGENCY DISTRIBUTION BOARD
PO-35		MOTOR CONTROL CENTER
PO-36		CONTROL PANEL
PO-37		SITE PANEL FOR EXTERNAL LIGHTING

STANDARD POWER LEGEND		
REF.	BLOCK	DESCRIPTION
P42		SWITCHING PANEL FOR EXTERNAL LIGHTING (N)- INDICATES REFERENCE NAME
P43		DIMMING PANEL (N)- INDICATES REFERENCE NAME
P46		SIGNAL LAMP.
P47		SELECTOR SWITCH
P48		AMMETER
P49		VOLTMETER
P50		POWER FACTOR METER
P51		DIESEL ENGINE STAND BY GENERATOR
P52		AUTOMATIC TRANSFER SWITCH
P53		MANUAL TRANSFER SWITCH
P54		TRANSFORMER
P55		KILO WATT HOUR METER
P56		CONCRETE EARTHING MANHOLE WITH EARTH ROD
P57		DIRECT ON LINE STARTER
P58		STAR DELTA STARTER
P59		SOFT STARTER
P60		VARIABLE FREQUENCY DRIVE
P61		CONTROL PANEL
P62		NORMALLY CLOSE CONTACT
P63		NORMALLY OPEN CONTACT
P64		ON PUSH BOTTON
P65		OFF PUSH BUTTON

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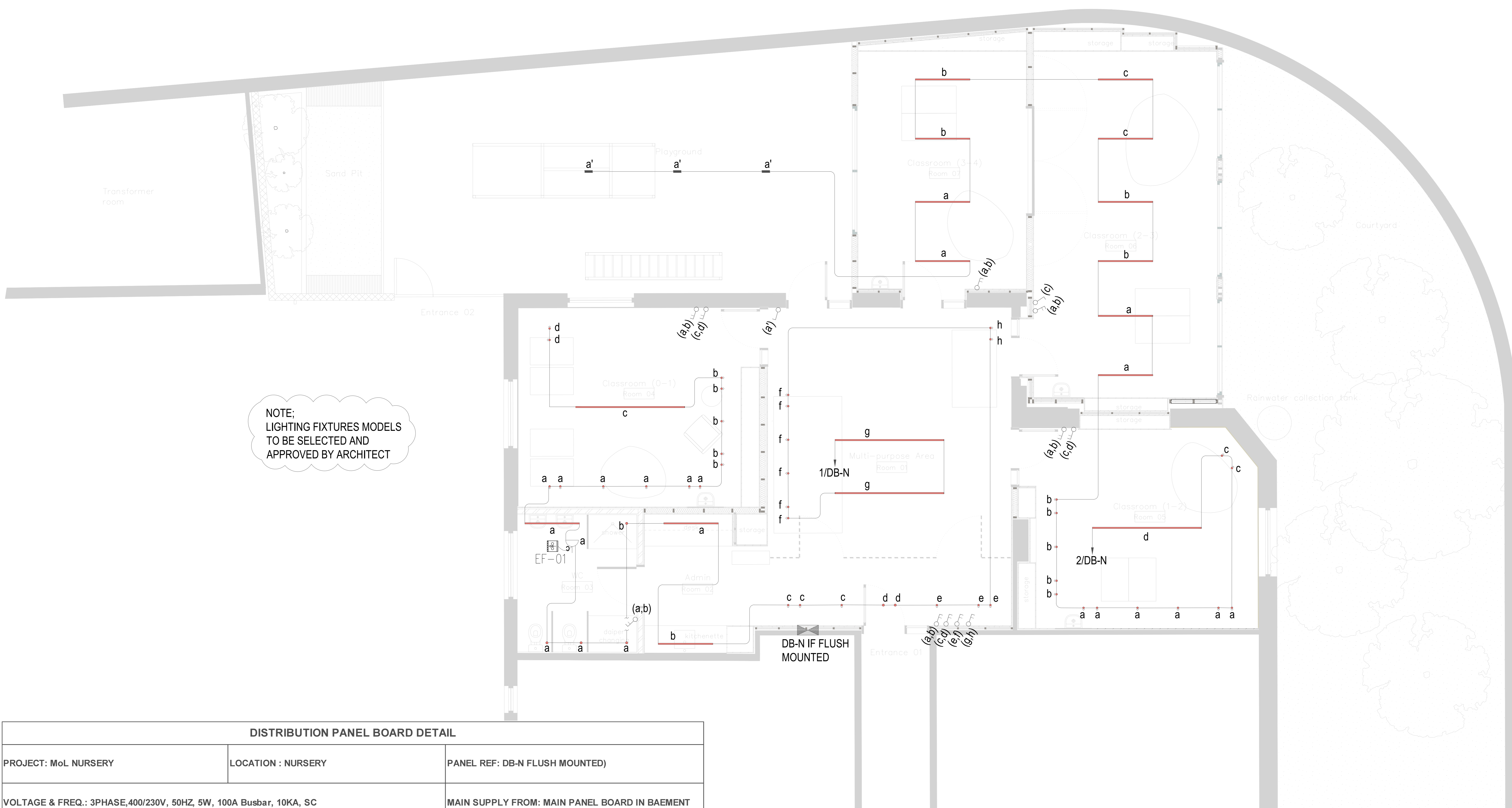
Project:
MoL NURSERY

Title:
ELECTRICAL LEGEND

Design: MEPJO	Drawn by: MEPJO	Checked: MEPJO
Scale / SIZE: 1:50 / A1	Date: APR. 2022	Approved: MEPJO



Drawing Number: **E-003** Rev.:



NOTE:
LIGHTING FIXTURES MODELS
TO BE SELECTED AND
APPROVED BY ARCHITECT

DISTRIBUTION PANEL BOARD DETAIL

PROJECT: MoL NURSERY		LOCATION : NURSERY				PANEL REF: DB-N FLUSH MOUNTED)											
VOLTAGE & FREQ.: 3PHASE,400/230V, 50HZ, 5W, 100A Busbar, 10KA, SC										MAIN SUPPLY FROM: MAIN PANEL BOARD IN BAEMENT							
Designation Load	wire size mm2	Phase Load In W			Trip Rating						Phase Load In W			wire size mm2	Designation Load		
		R	Y	B	CT NO	CB (A)	R	Y	B	CB (A)	CT NO	R	Y			B	
Lighting	3X2.5	815			1	15					15	2	500	540		3X2.5	Lighting
Socket Outlet	3X4		1080		3	20					20	4		540		3X4	Socket Outlet
Socket Outlet	3X4			1440	5	20					20	6		1400		3X4	IDU-01/ODU-02
IDU-01/ODU-01	3X4	2700			7	20					20	8	1400		3X4	IDU-01/ODU-04	
IDU-01/ODU-03	3X4		1400		9	20					20	10		1400		3X4	IDU-NEW/ODU-NEW
IDU-01/ODU-05	3X4			1400	11	20					20	12				3X4	Spare
Spare					13	20					15	14					Spare
Space					15	20					20	16					Space
Space					17	20					20	18					Space
Subtotal		3515	2480	2840							1900	1940	1400				
30A CIRCUIT BREAKER																	
Total Connected W		5415	4420	4240				Lighting	Socket Outlet	HVAC	TOTAL						
CONNECTED LOAD W		14075			Connected W	R	1315	0	4100	5415							
					Y	0	1620	2800	4420								
					B	0	1440	2800	4240								
DEMAND LOAD W		12239			DEM FACT	1	0.4	1									
PANEL LOAD kW		12.24			Demand W	R	1315	0	4100	5415							
					Y	0	648	2800	3448								
					B	0	576	2800	3376								
FULL LOAD CURRENT INCLUDING FUTURE LOAD (A) (+20%)		26.5															

Symbol	Description
	directional recessed downlight
	recessed downlight
	double switch
	linear recessed light
	outdoor light

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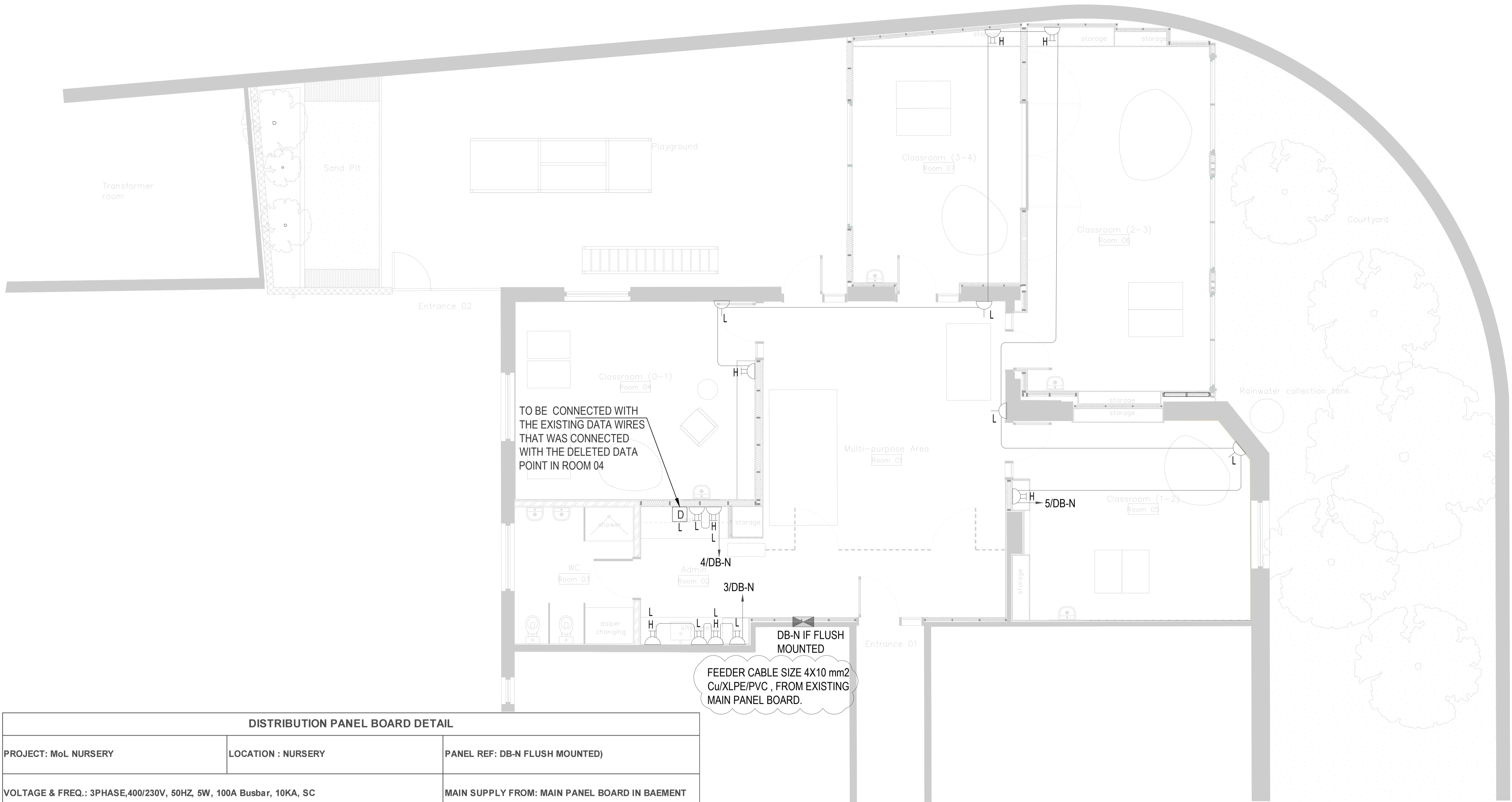
Project:
MoL NURSERY

Title:
LIGHTING SYSTEM PLAN

Design: MEPJO	Drawn by: MEPJO	Checked: MEPJO
Scale / SIZE: 1:50 / A1	Date: APR. 2022	Approved: MEPJO



Drawing Number: **E-101** Rev.:



DISTRIBUTION PANEL BOARD DETAIL																
PROJECT: MoL NURSERY				LOCATION : NURSERY				PANEL REF: DB-N FLUSH MOUNTED)								
VOLTAGE & FREQ.: 3PHASE,400/230V, 50HZ, 5W, 100A Busbar, 10KA, SC							MAIN SUPPLY FROM: MAIN PANEL BOARD IN BAEMENT									
Designation Load	wire size mm ²	Phase Load In W			Trip Rating					Phase Load In W			Designation Load			
		R	Y	B	CT NO	CB (A)	R	Y	B	CB (A)	CT NO	R		Y	B	wire size mm ²
Lighting	3X2.5	815			1	15				15	2	500			3X2.5	Lighting
Socket Outlet	3X4		1080		3	20				20	4		540		3X4	Socket Outlet
Socket Outlet	3X4			1440	5	20				20	6			1400	3X4	IDU-01/ODU-02
IDU-01/ODU-01	3X4	2700			7	20				20	8	1400			3X4	IDU-01/ODU-04
IDU-01/ODU-03	3X4		1400		9	20				20	10	1400			3X4	IDU-NEW/ODU-NEW
IDU-01/ODU-05	3X4			1400	11	20				20	12					Spare
Space					13	20				15	14					Spare
Space					15	20				20	16					Space
Space					17	20				20	18					Space
Subtotal		3515	2480	2840							1900	1940	1400			
													30A CIRCUIT BREAKER			
Total Connected W		5415	4420	4240							Lighting	Socket Outlet	HVAC	TOTAL		
CONNECTED LOAD W		14075														
				Connected W		R	1315	0	4100	5415						
						Y	0	1620	2800	4420						
						B	0	1440	2800	4240						
DEMAND LOAD W		12239														
				DEM FACT			1	0.4	1							
PANEL LOAD kW		12.24														
				Demand W		R	1315	0	4100	5415						
						Y	0	648	2800	3448						
						B	0	576	2800	3376						
FULL LOAD CURRENT INCLUDING FUTURE LOAD (A) (+20%)		26.5														

STANDARD POWER LEGEND		
BLOCK NAME	SYMBOL	NOTES
PO-01	△	SOCKET OUTLET: 13AMP SIMPLEX, SWITCHED, SHUTTERED
PO-02	△	SOCKET OUTLET: 13AMP DUPLEX, SWITCHED, SHUTTERED
PO-03	⊕	CONNECTION UNIT WITH FLEX OUTLET (UNSWITCHED, UNFUSED), MURAL
PO-04	⊕	POWER ISOLATOR, 1PHASE, X DENOTES FOR AMPERE RATING
PO-05	△	SPUR OUTLET: 13AMP SWITCHED
PO-06	△	SOCKET OUTLET: 13AMP SIMPLEX, SWITCHED, SHUTTERED SURFACE MOUNTED
PO-07	⊕	FLOOR BOX
C : CEILING MOUNTED TV : POWER OUTLET FOR TV		

STANDARD POWER LEGEND		
REF.	BLOCK	DESCRIPTION
PO-01	△	PANEL BOARD
PO-02	⊕	CONTROL PANEL
PO-03	⊕	MAIN DISTRIBUTION BOARD

*NOTES:
 - COORDINATE WITH THE ARCHITECT FOR ARRANGEMENT, LOCATION AND COLOR ALL ELECTRICAL DEVICES AND EQUIPMENT.
 - ALL HEAVY GAUGE PCC CONDUITS SHALL BE 20mm DIAMETER UNLESS OTHERWISE NOTED.

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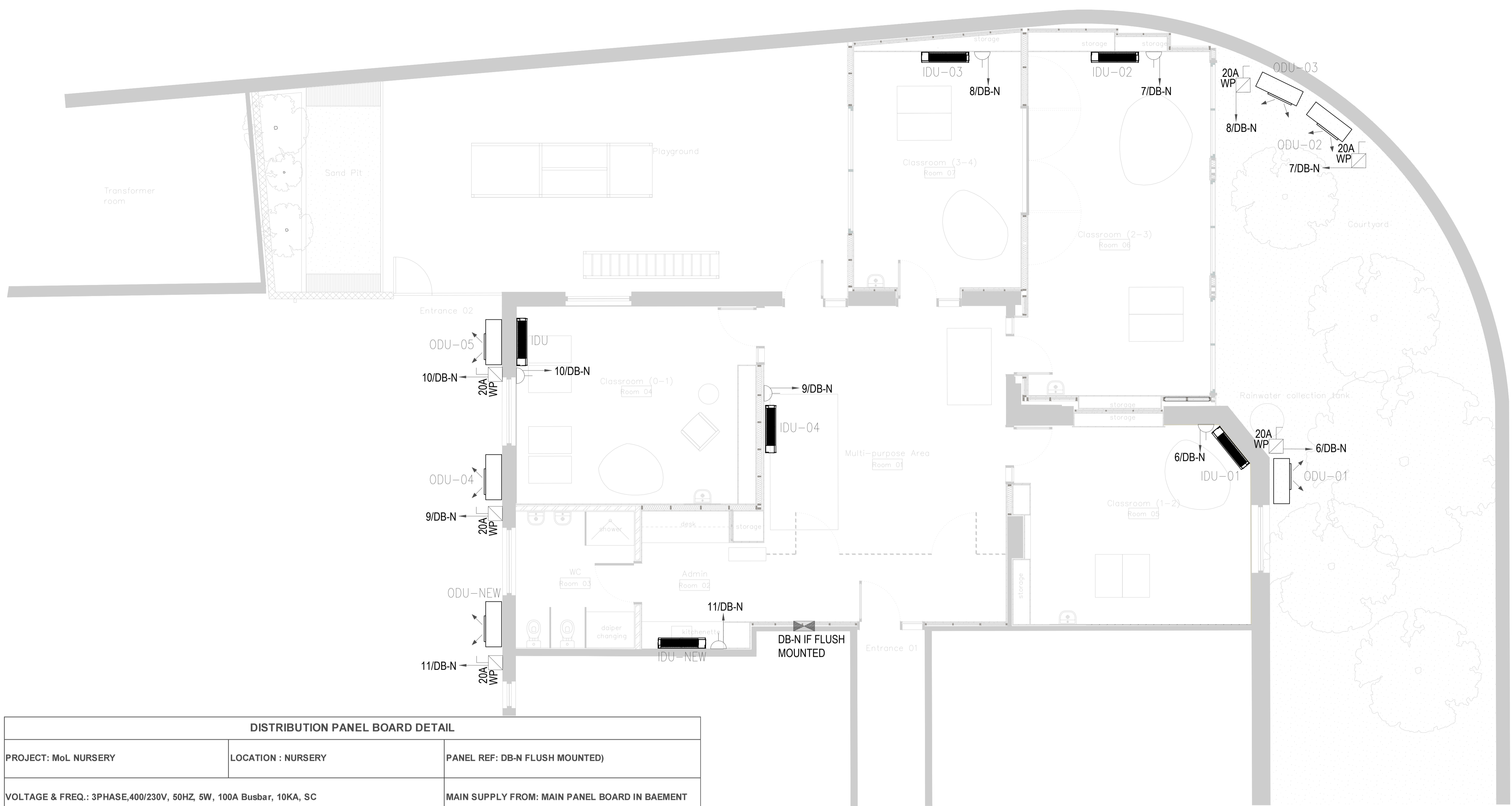
Project: **MoL NURSERY**

Title: **POWER SYSTEM PLAN**

Design: MEPJO	Drawn by: MEPJO	Checked: MEPJO
Scale / SIZE: 1:50 / A1	Date: APR. 2022	Approved: MEPJO

METERS

Drawing Number: **E-201** Rev.:



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DISTRIBUTION PANEL BOARD DETAIL														
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Designation Load	wire size mm2	Phase Load In W			Trip Rating				Phase Load In W			wire size mm2	Designation Load	
		R	Y	B	CT NO	CB (A)	R	Y	B	CT NO	R			Y
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Socket Outlet	3X4		1080		3	20			20	4	540		3X4	Socket Outlet
Socket Outlet	3X4			1440	5	20			20	6	1400		3X4	IDU-01/ODU-02
IDU-01/ODU-01	3X4	2700			7	20			20	8	1400		3X4	IDU-01/ODU-04
IDU-01/ODU-03	3X4		1400		9	20			20	10	1400		3X4	IDU-NEW/ODU-NEW
IDU-01/ODU-05	3X4			1400	11	20			20	12				Spare
Spare					13	20			15	14				Spare
Space					15	20			20	16				Space
Space					17	20			20	18				Space
Subtotal		3515	2480	2840					1900	1940	1400			
30A CIRCUIT BREAKER														
Total Connected W		5415	4420	4240					Lighting	Socket Outlet	HVAC		TOTAL	
CONNECTED LOAD W		14075	Connected W	R	1315	0	4100	5415						
				Y	0	1620	2800	4420						
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DEMAND LOAD W		12239	DEM FACT		1	0.4	1							
				R	1315	0	4100	5415						
				Y	0	648	2800	3448						
PANEL LOAD kW		12.24	Demand W	B	0	576	2800	3376						
FULL LOAD CURRENT INCLUDING FUTURE LOAD (A) (+20%)		26.5												

Purpose Of Issue	Rev.	Date	Approved
Project: MoL NURSERY			
Title: POWER FOR MECHANICAL SYSTEM PLAN			
Design: MEPJO	Drawn by: MEPJO	Checked: MEPJO	
Scale / SIZE: 1:50 / A1	Date: APR. 2022	Approved: MEPJO	
Drawing Number: E-301			Rev.: