


NOTES:

- CABLING TO FIRE FIGHTING EQUIPMENT TO BE FIRE RATED TO BS 6387 CAT. CWZ AND FOLLOW SEPARATE ROUTES THROUGH THE BUILDING.
- THE FOLLOWING SYMBOLS DENOTE:
 - * EQUIPMENT SEALABLE BY INCOMING SUPPLY AUTHORITY.
 - D.O.L. EQUIPMENT SUITABLE FOR MOTOR DIRECT-ON-LINE STARTING.
 - MR MOTOR RATED
-  DENOTES MULTI FUNCTION ENERGY MONITORING METERS INSTALLED WITHIN MAIN SWITCHBOARD & ADJACENT EACH ASSOCIATED OUTGOING SERVICE SUPPLY. METERS SHALL BE 'MOD-BUS' OUTPUT TO A CENTRALISED DEDICATED SYSTEM DATA LOGGER & BMS SYSTEM. TYPICALLY THEY SHALL BE CAPABLE OF MEASURING & DISPLAYING THE FOLLOWING ELECTRICAL CHARACTERISTICS.
 - PHASE CURRENT
 - NEUTRAL CURRENT
 - PHASE TO PHASE VOLTAGE
 - PHASE TO NEUTRAL VOLTAGE
 - FREQUENCY
 - POWER FACTOR (INDUCTIVE & CAPACITIVE OUTPUT)
 - INSTANTANEOUS ACTIVE POSITIVE POWER
 - INSTANTANEOUS REACTIVE POSITIVE POWER
 - TIME MEASURED POSITIVE POWER (PROGRAMMABLE TIME PERIOD)
 - MAXIMUM ACTIVE POSITIVE POWER OVER A PROGRAMMABLE TIME PERIOD
 - CUMULATIVE KILOWATT HOURS

- REFER TO SPECIFICATION FOR FURTHER INFORMATION
- MAIN SWITCHBOARD TO BE C/W SECONDARY AUTO-START RELAY ARRANGED AS FOLLOWS:
FAILURE OF ANY DEDICATED MCCB's OR MAINS SUPPLY WILL ENERGIZE THE RELAY AND SIGNAL THE SECONDARY SUPPLY CHANGEOVER PANEL.
- SEE AUTO CHANGEOVER UNIT DETAIL FOR EXACT ARRANGEMENT FOR ISOLATING SWITCHES AND FAILURE SIGNAL SWITCHES.
 - ALL FINAL CIRCUITS SERVING AIR-CONDITIONING TO BE PROTECTED BY TYPE D MCCB's.
 - NOT ALL SPECIALIST EQUIPMENT & SERVICES ARE INCLUDED ON THE FLOOR PLANS. ALL EQUIPMENT, CABLING & POWER PROVISION SHOWN ON THIS DRAWING IS TO BE PROVIDED & INSTALLED IN THE APPROPRIATE LOCATIONS
 - ALL SWITCHBOARD METERS TO BE INTERCONNECTED VIA A MODBUS SYSTEM TO THE PROJECT BMS SYSTEM. MODBUS SYSTEM SUPPLIED AND INSTALLED BY SWITCHBOARD MANUFACTURER
 - ALL BREAKERS TO BE MICROLOGIC 5.2
 - TYPE 1 SURGE SUPPRESSION IS REQUIRED TO BE FIXED TO ANY EXTERNAL CABLING AS IT ENTERS THE BUILDING. ALSO APPLIES TO TELEPHONE, TV, CCTV, LIGHTING, EXTERNAL PLANT SUPPLIES, CONTROLS, SIGNAGE ETC. BUT SHALL NOT BE LIMITED TO THE AFOREMENTIONED SERVICES.

- ALL SWITCHGEAR SHALL COMPLY WITH IEC 439-1 AND ETCI CODE OF PRACTICE FOR LOW VOLTAGE SWITCHGEAR ASSEMBLIES.
- ALL SWITCHBOARDS SHALL BE PROVIDED WITH ENERGY METERS AS INDICATED WITH DIGITAL INDICATION AND THE ENERGY METERS SHALL BE PROVIDED WITH PULSED OUTPUTS FOR MONITORING BY THE BMS.
- THE ON SITE DIESEL STORAGE FOR THE STANDBY GENERATOR SHALL BE SUFFICIENT TO PROVIDE A MINIMUM OF 12 HOURS CONTINUOUS OPERATION. THE CONTRACTOR SHALL INCLUDE FOR THE COMPLETE FUEL STORAGE AND DELIVERY SYSTEM ON SITE AS PART OF THE WORKS.

- DEDICATED UNINTERRUPTIBLE POWER SUPPLIES (UPS) SYSTEMS ARE TO BE PROVIDED TO SERVE ALL INSTALLATIONS ASSOCIATED WITH THE SECURITY INSTALLATION. THE UPS SHALL BE AN ONLINE STATIC SYSTEM RATED TO OPERATE FOR 30 MINUTES AT 100% CAPACITY LOAD.
- DISTRIBUTION BOARDS SHALL BE METALCLAD TYPE 2 AND SHALL COMPLY WITH ETCI REGULATIONS
- EACH LIGHTING SUB DISTRIBUTION BOARD SHALL BE PROVIDED WITH AN EMERGENCY LIGHTING INTERFACE UNIT OF SUFFICIENT CAPACITY TO CONTROL EACH LIGHTING CIRCUIT WITH EMERGENCY LIGHTING.

- THE DISTRIBUTION BOARDS SERVING THE GROUND FLOOR FOH AREAS AND FIRST FLOOR MEETING AREAS SHALL BE SIZED AND FITTED WITH SPARE MCCB's/BREAKERS AS PER THE SPECIFICATION FOR SPARE CIRCUIT WAYS. A MINIMUM 25% SPARE CAPACITY FOR FUTURE LIGHTING USE AND A MINIMUM 50% SPARE CAPACITY FOR FUTURE GENERAL SERVICES USE. BOARDS REF - DB-C, D, E, F, G, H AND DB-T. ALL OTHER BOARDS TO HAVE 20% SPARE CAPACITY FOR FUTURE EXPANSION

- ALL CONSUMER UNITS AND DISTRIBUTION BOARDS TO BE LOCKABLE

T2	18.09.19	TENDER DESIGN UPDATE	LW	PON
T1	APR 19	TENDER ISSUE	LW	PON
REV	DATE	DESCRIPTION	DR	CK

Caldwell

ARCHITECT
CONSARC

JOB
RENFREW STREET, GLASGOW
MALDRON HOTEL

DRAWING
SERVICES INSTALLATION

ELECTRICAL WIRING SCHEMATIC
PART 1 OF 4

DRAWING No./REVISION

3840/E600

T2

SCALE/PRINTED AT
NTS @A1

DATE
APR 19

DRAWN
LW

CHECKED
PON

UNIT 6 FORESTGROVE BUSINESS PARK
NEWTOWNBELFA BELFAST BT8 6AW
TEL: 02890699720 FAX: 02890641625
EMAIL: admin@caldwellconsulting.net

13 Floor/Roof

BMS

MR

12th

11th

10th

9th

8th

7th

6th

5th

4th

3rd

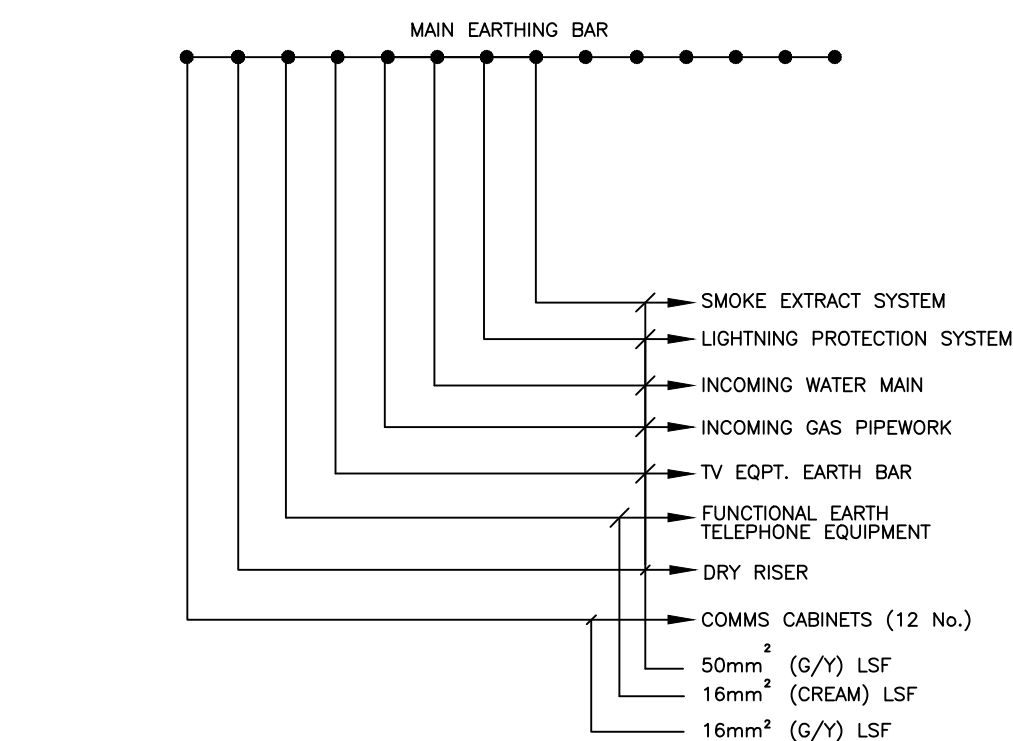
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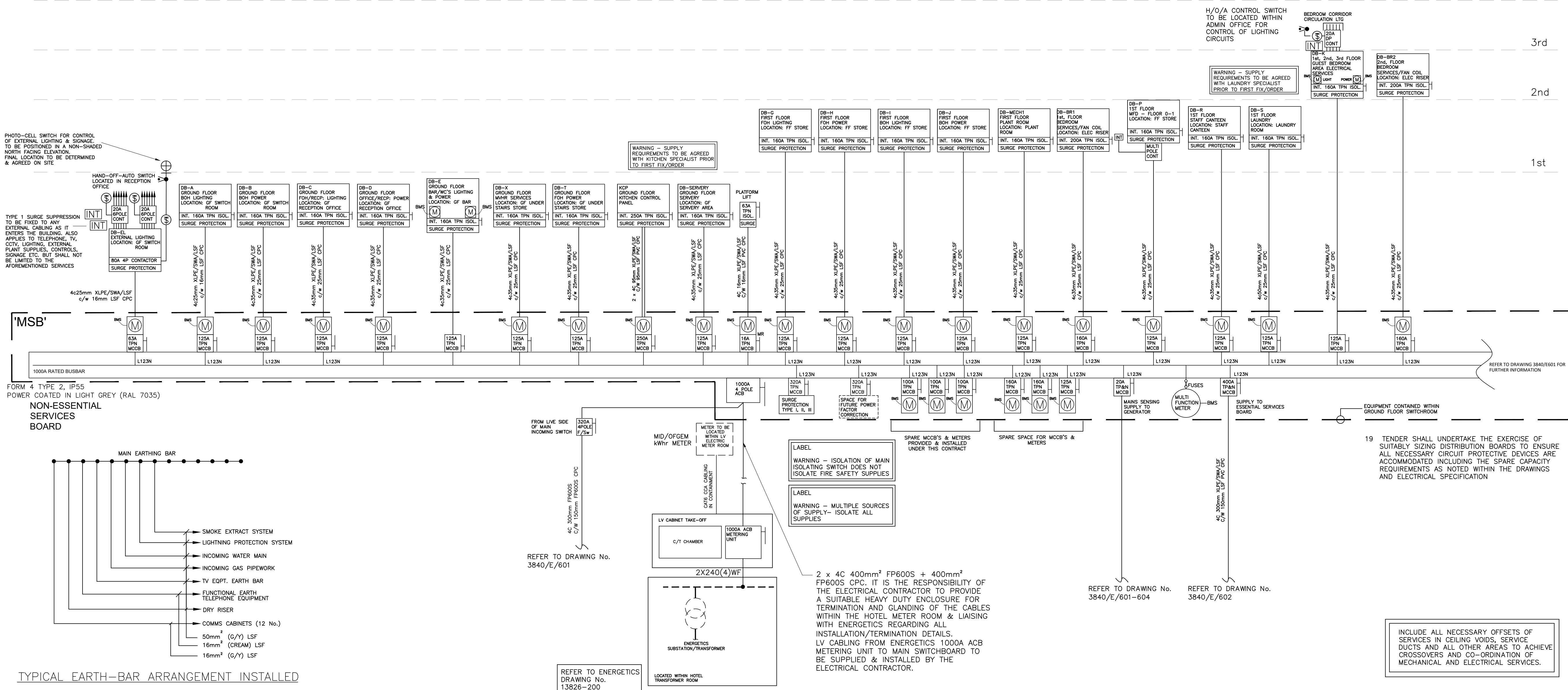
PHOTO-CELL SWITCH FOR CONTROL OF EXTERNAL LIGHTING & SIGNAGE TO BE POSITIONED IN A NON-SHADED NORTH FACING ELEVATION. FINAL LOCATION TO BE DETERMINED & AGREED ON SITE

TYPE 1 SURGE SUPPRESSION IS TO BE FIXED TO ANY EXTERNAL CABLING AS IT ENTERS THE BUILDING. ALSO APPLIES TO TELEPHONE, TV, CCTV, LIGHTING, EXTERNAL PLANT SUPPLIES, CONTROLS, SIGNAGE ETC. BUT SHALL NOT BE LIMITED TO THE AFOREMENTIONED SERVICES

FORM 4 TYPE 2, IP55
POWER COATED IN LIGHT GREY (RAL 7035)
NON-ESSENTIAL SERVICES BOARD



TYPICAL EARTH-BAR ARRANGEMENT INSTALLED
EXTERNAL & ADJACENT TO SWITCHBOARD



Grd