COCR & FOC Submission Requirement to Technical Circular No. 1/2017 & Common Irregularities

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05 March 2018
06 March 2018

BEEO/BEC
REA Briefing 2018

Energy Efficiency Office

EMSD

Topics

- Technical Circular No. 1/2017
- New Form EE-EN
- New Form EE-CH

EMSD

- Technical Circular No. 1/2017
  - Issued on 29 Dec. 2017
  - Form EE-EN
    - MBEC Enquiry Form for Project Specific Issue
    - Immediately Effective
    - Address inquirer's concerns accurately
    - Make effective reply
    - Ensure proper record
  - Form EE-CH
    - Checklist for COCR Stage 2 / FOC Submission
    - Effective on **1 Feb. 2018**

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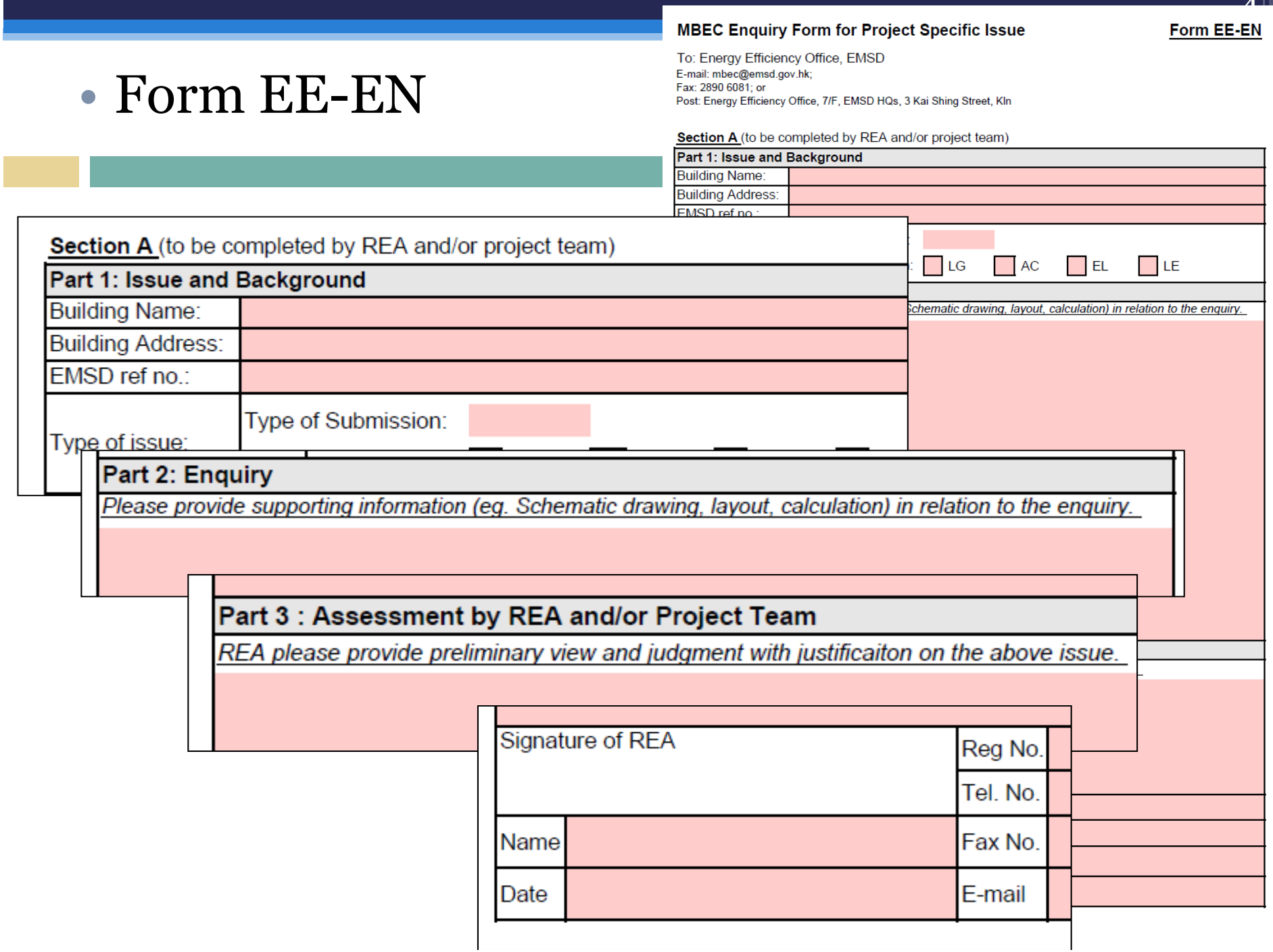
- Form EE-EN



MBEC Enquiry Form for Project Specific Issue **Form EE-EN**

To: Energy Efficiency Office, EMSD
E-mail: mbec@emsd.gov.hk;
Fax: 2890 6081; or
Post: Energy Efficiency Office, 7/F, EMSD HQs, 3 Kai Shing Street, Kln

Section A (to be completed by REA and/or project team)

Part 1: Issue and Background	
Building Name:	
Building Address:	
EMSD ref no.:	
Type of issue:	Type of Submission:

LG AC EL LE

Schematic drawing, layout, calculation) in relation to the enquiry.

Part 2: Enquiry

Please provide supporting information (eg. Schematic drawing, layout, calculation) in relation to the enquiry.

Part 3 : Assessment by REA and/or Project Team

REA please provide preliminary view and judgment with justificaiton on the above issue.

Signature of REA		Reg No.	
		Tel. No.	
Name		Fax No.	
Date		E-mail	

- Form EE-CH
  - Frequently receiving incomplete & poor quality COCR & FOC submission contents
  - Checklist for COCR Stage 2 / FOC Submission
  - Effective on **1 Feb. 2018**
  - To uplift submission quality, completeness of materials
  - Listed items based on frequently issued, repetitive comments and common irregularities.

EMSD

- Form EE-CH
  - 5 Parts
  - General (7 Headings)
  - Lighting Installations (8 Headings)
  - Air-conditioning Installations (6 Headings)
  - Electrical Installations (7 Headings)
  - Lift and Escalator Installations (7 Headings)

Checklist for COCR Stage 2 / FOC Submission — **Form EE-CH**

Name of Building	
EMSD Ref. No. (COCR Only)	
Name of the REA	
REA Registration No.	
Date	

REA Signature

General	REA Qualification	Latest record of professional qualification (e.g. HKIE, RPE, etc.) to requirement of REA registration.		
	Building Name	Name of building in both English and Chinese to be printed on the COCR. Such building name appeared in Form EE2, EE-SU and technical forms should be consistent.		Only Applicable for COCR
	Occupation Permit	Copy of Occupation Permit from Buildings Department.		Only Applicable for COCR
	Developer identity	Supporting information to show the legal identity of the Developer (e.g. copy of Company Registration) if the developer stated in Form EE2 is different from that as indicated on Occupation Permit.		Only Applicable for COCR
	Application Fee	A crossed cheque made to "The Government of the Hong Kong Special Administrative Region".		Only Applicable for COCR
	Demarcation Plan	All the submitted schematic diagrams, layouts plans have clearly demarcated the exact portion/area involved in the submission.		Only Applicable for COCR
	Tenancy Agreement	Copy of Deed of Mutual Covenant (DMC) or tenancy agreement showing future tenants/ occupiers will be reminded to comply with Section 12 of the BEEO.		- Only Applicable for COCR - for building with multi owners or occupier

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- General
  - REA Qualification
  - Building Name
  - Occupation Permit
  - Developer Identity
  - Application Fee
  - Demarcation Plan
  - Tenancy Agreement

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- General
  - REA Qualification
    - Valid Membership
    - RPE, MHKIE;
    - MCIBSE/FSOE CEng. Etc.
  - Building Name
    - Proposed office development..... ?
    - Proposed residential building..... ?
    - Not to report project name
    - English & Chinese
    - Print on COCR

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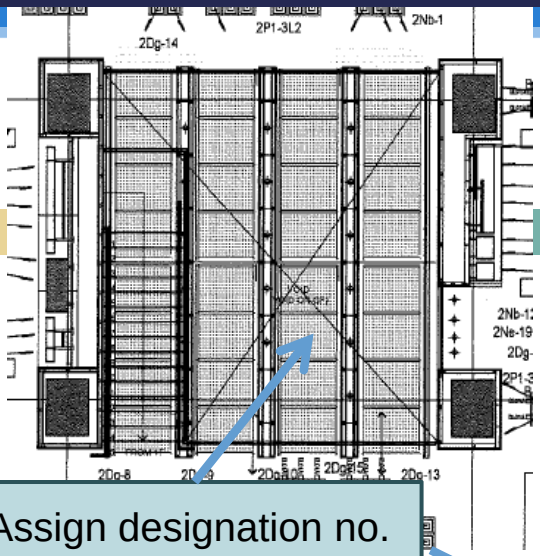
- General
  - OP
    - Issue date (Form EE-SU's requirement)
    - Building usage
  - Developer Identity
    - Legal identity (e.g. Company Registration), if different from OP
  - Application Fee (Crossed Cheque)

- General
  - Demarcation Plans
    - Layout plan; schematic
    - Multiple towers on podium floors;
    - BEC governed Vs non-governed portion;
    - Carpark Vs Club House;
    - Retail Vs non-retail portion.
  - Tenancy Agreement
    - Section 12, BEEO
    - Tenant maintains BSI standard to BEC Ed. in COCR

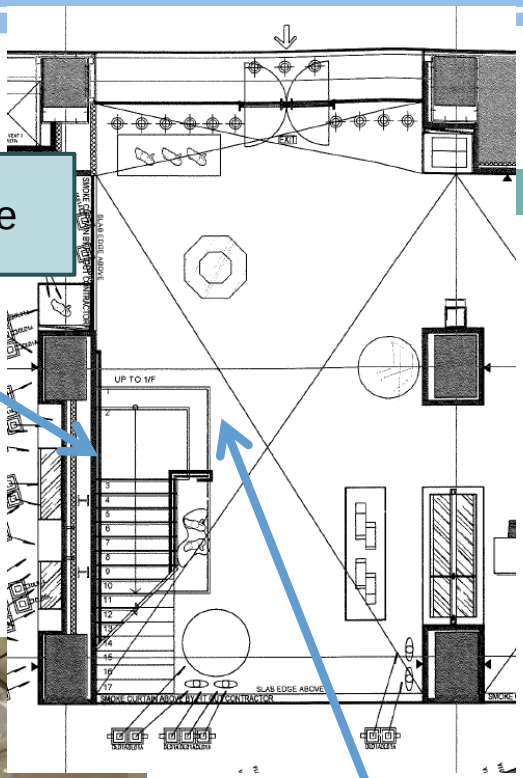
- EE-LG (8 Headings)
  - Lighting Layout (General)
  - Lighting Layout (Blow-up)
  - Lighting Schedule (Luminaires Schedule)
  - LPD Calculation
  - Catalogue (Technical Detail /Justification)
  - Scope of works
  - Solely Decorative Lighting
  - Automatic Lighting Control (ALC)

- EE-LG (Lighting)
  - Lighting Layout (General)
    - Scale (1:200 or larger)
    - Designation No. properly identified
    - Quantity countable on plan
    - Consistent with LPD Calculation, Catalogue, Lighting/ Luminaire Schedule;
    - Identify lighting spaces on plan; consistent with other schedules and Form EE-LG
    - Include vertically-mounted lighting
    - Quality of drawings



Assign designation no. for involved lights

Light on vertical surface



Strip light on steps

Completeness of Information

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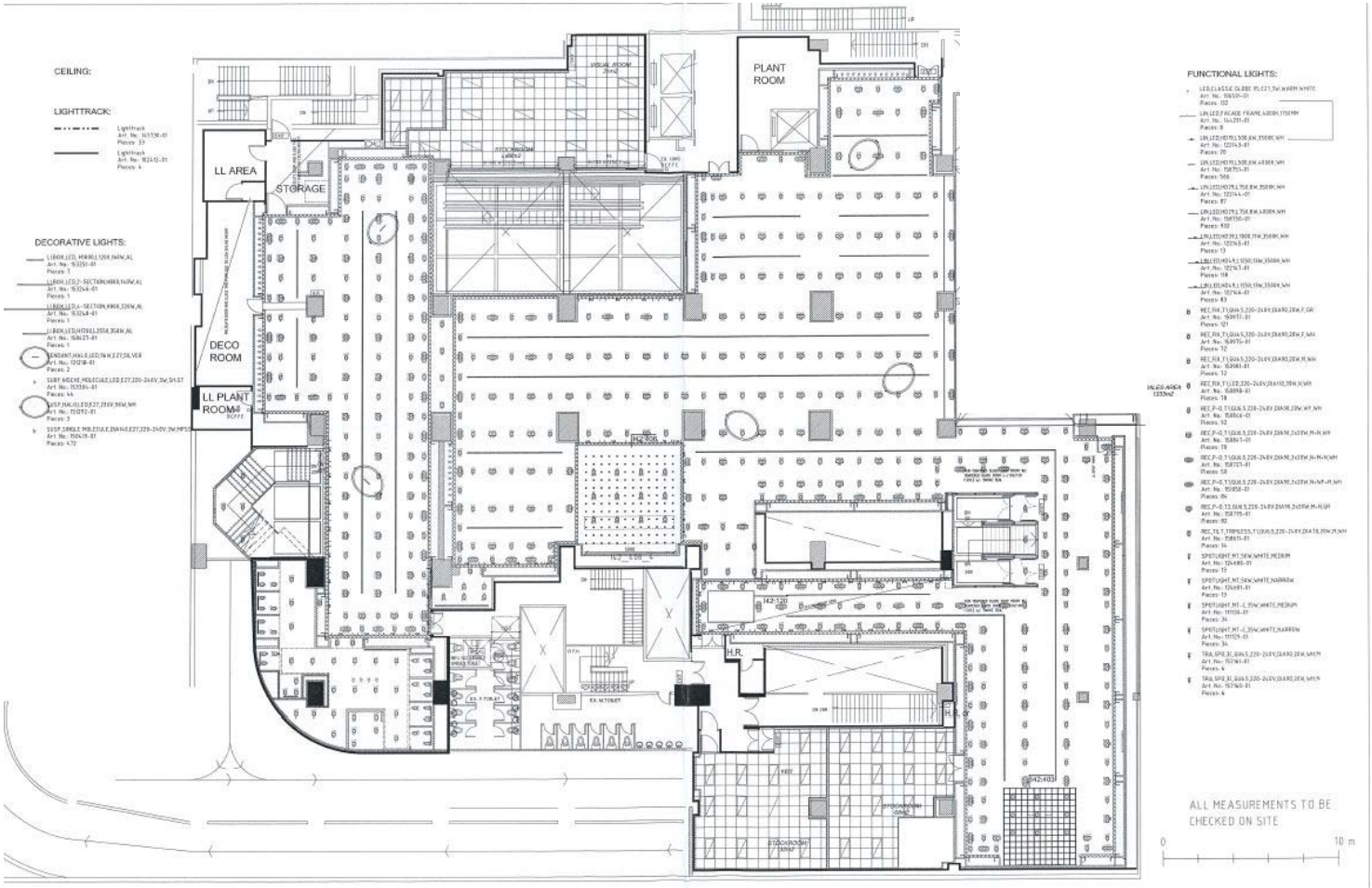
EE-LG
Submission Quality



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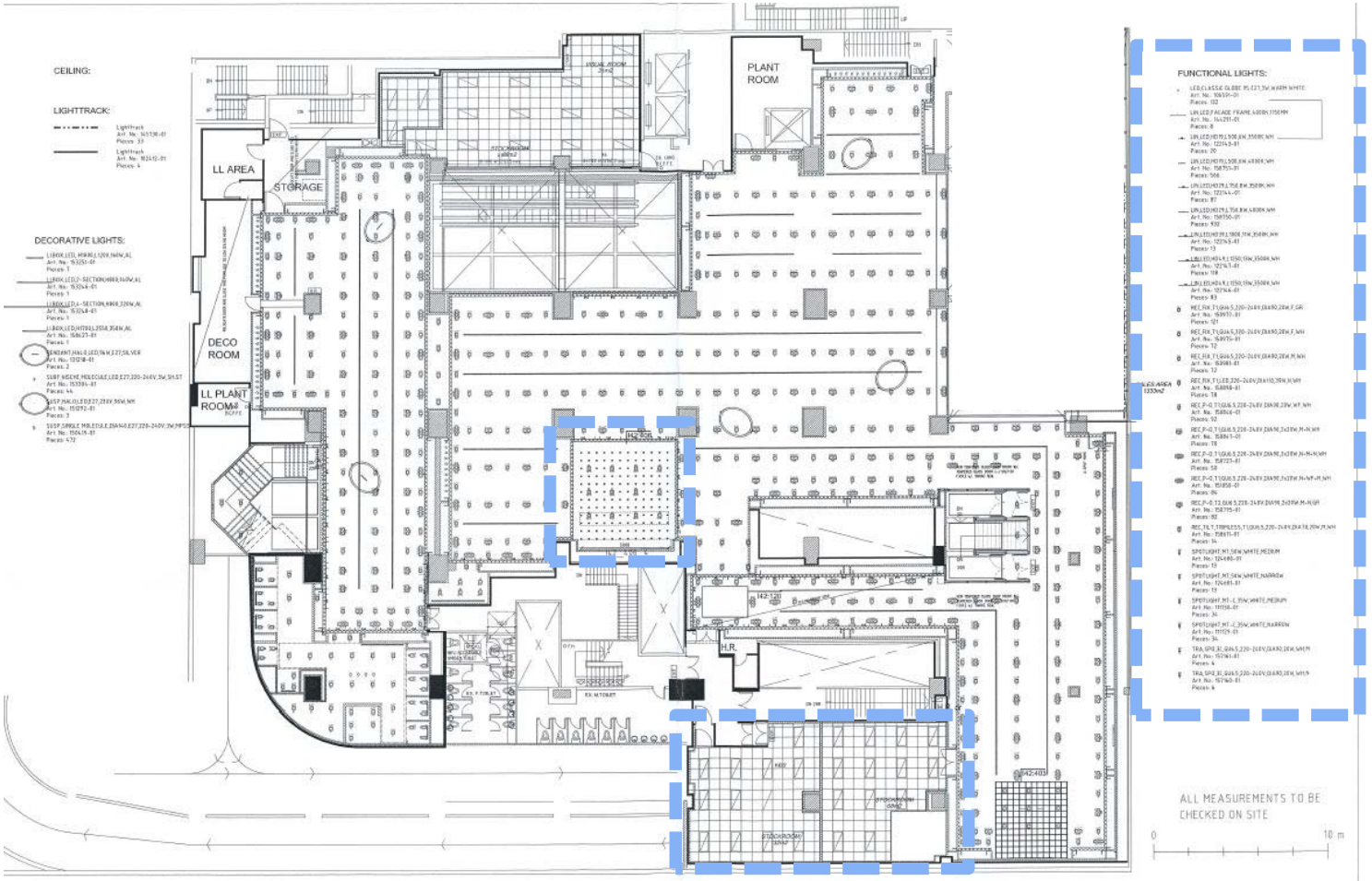
EE-LG
Submission Quality



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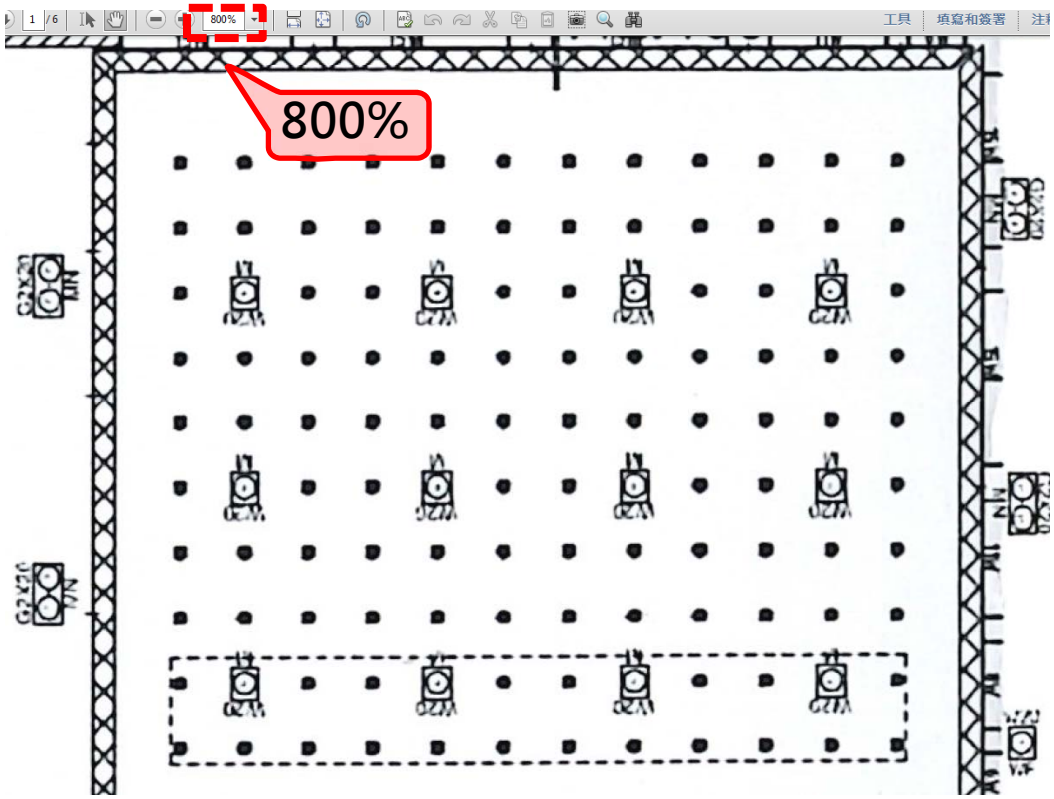
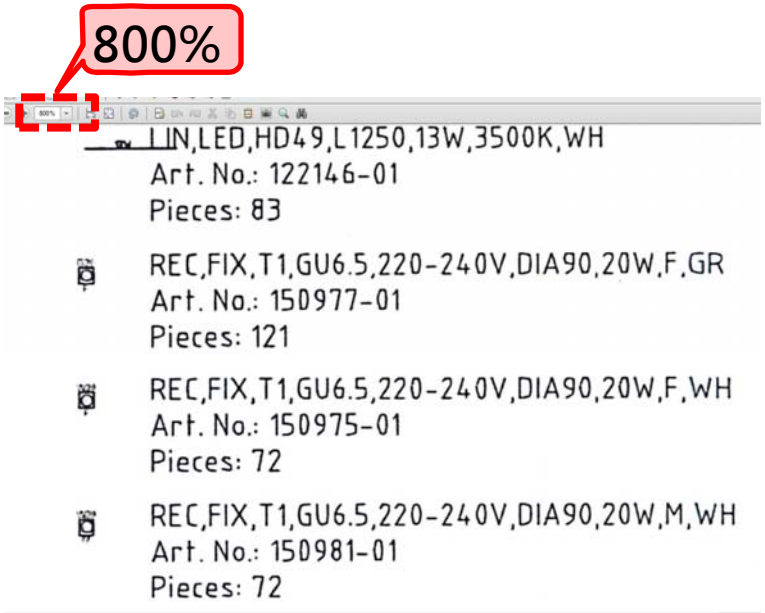
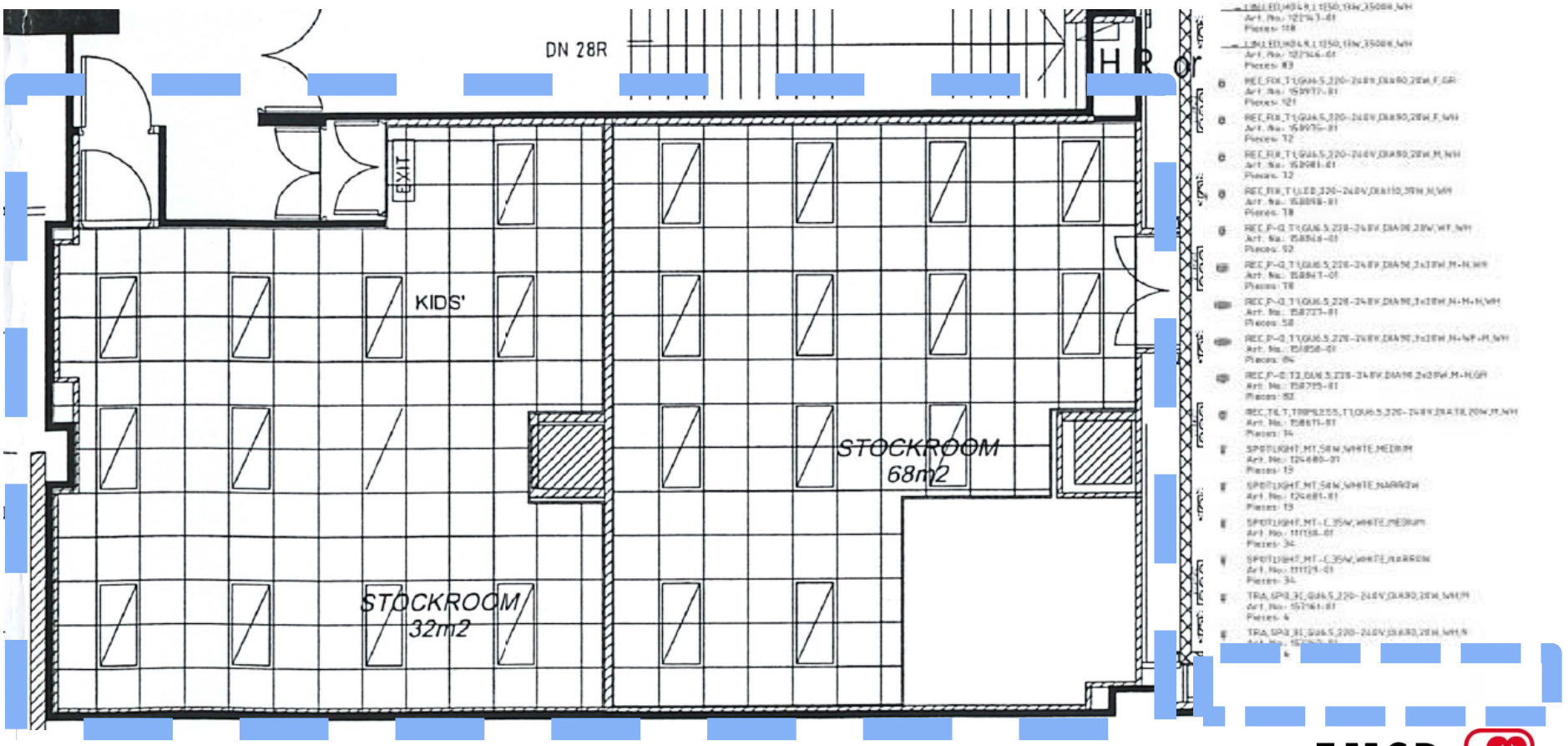
EE-LG
Submission Quality





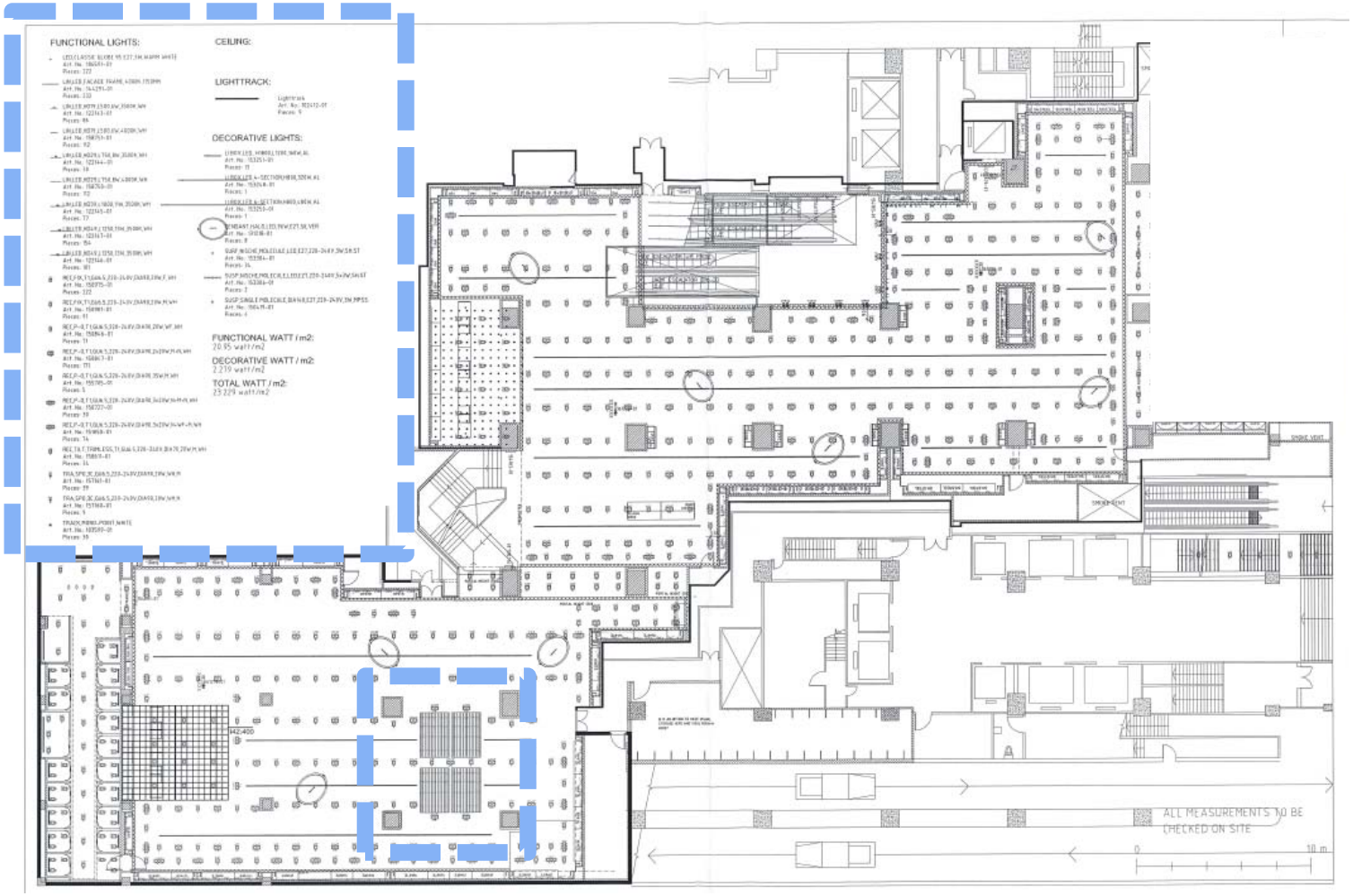
EMSD

EE-LG
Submission Quality



EMSD

EE-LG
Submission Quality



EMSD

EE-LG
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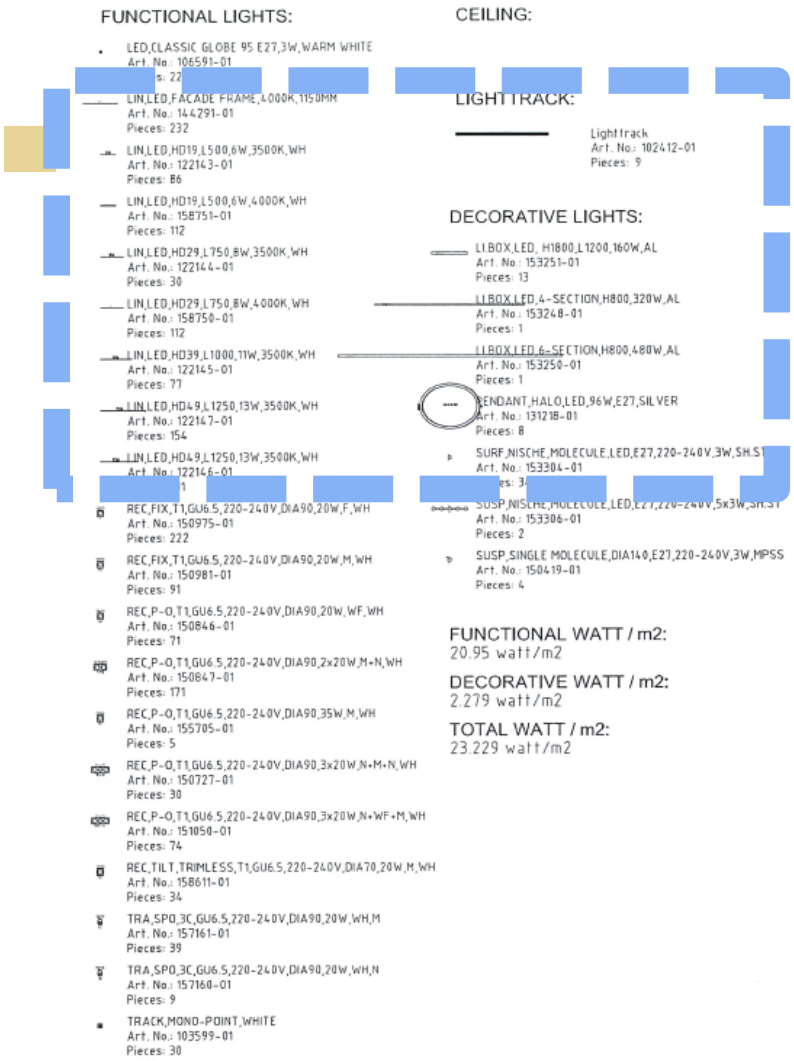


FUNCTIONAL LIGHTS:

LED,CLASSIC GLOBE 95 E27,3W,WARM WHITE
Art. No.: 106591-01
Pieces: 22

LIN,LED,FACADE FRAME,4000K,1150MM
Art. No.: 144291-01
Pieces: 232

LIN,LED,HD19,L500,6W,3500K,WH
Art. No.: 122143-01
Pieces: 86

LIN,LED,HD19,L500,6W,4000K,WH
Art. No.: 158751-01
Pieces: 112

LIN,LED,HD29,L750,8W,3500K,WH
Art. No.: 122144-01
Pieces: 30

LIN,LED,HD29,L750,8W,4000K,WH
Art. No.: 158750-01
Pieces: 112

LIN,LED,HD39,L1000,11W,3500K,WH
Art. No.: 122145-01
Pieces: 77

LIN,LED,HD49,L1250,13W,3500K,WH
Art. No.: 122147-01
Pieces: 154

LIN,LED,HD49,L1250,13W,3500K,WH
Art. No.: 122146-01
Pieces: 1

REC,FIX,T1,GU6.5,220-240V,DIA90,20W,F,WH
Art. No.: 150975-01
Pieces: 222

REC,FIX,T1,GU6.5,220-240V,DIA90,20W,M,WH
Art. No.: 150981-01
Pieces: 91

REC,P-O,T1,GU6.5,220-240V,DIA90,20W,WF,WH
Art. No.: 150846-01
Pieces: 71

REC,P-O,T1,GU6.5,220-240V,DIA90,2x20W,M+N,WH
Art. No.: 150847-01
Pieces: 171

REC,P-O,T1,GU6.5,220-240V,DIA90,35W,M,WH
Art. No.: 155705-01
Pieces: 5

REC,P-O,T1,GU6.5,220-240V,DIA90,3x20W,N+M+N,WH
Art. No.: 150727-01
Pieces: 30

REC,P-O,T1,GU6.5,220-240V,DIA90,3x20W,N+WF+M,WH
Art. No.: 151050-01
Pieces: 74

REC,TILT,TRIMLESS,T1,GU6.5,220-240V,DIA70,20W,M,WH
Art. No.: 158611-01
Pieces: 34

TRA,SPO,3C,GU6.5,220-240V,DIA90,20W,WH,M
Art. No.: 157161-01
Pieces: 39

TRA,SPO,3C,GU6.5,220-240V,DIA90,20W,WH,N
Art. No.: 157160-01
Pieces: 9

TRACK,MONO-POINT,WHITE
Art. No.: 103599-01
Pieces: 30

CEILING:

LIGHTTRACK:

Lighttrack
Art. No.: 102412-01
Pieces: 9

DECORATIVE LIGHTS:

LI.BOX,LED, H1800,L1200,160W,AL
Art. No.: 153251-01
Pieces: 13

LI.BOX,LED,4-SECTION,H800,320W,AL
Art. No.: 153248-01
Pieces: 1

LI.BOX,LED,6-SECTION,H800,480W,AL
Art. No.: 153250-01
Pieces: 1

PENDANT,HALO,LED,96W,E27,SILVER
Art. No.: 131218-01
Pieces: 8

SURF,NISCHE,MOLECULE,LED,E27,220-240V,3W,SH.ST
Art. No.: 153304-01
Pieces: 3

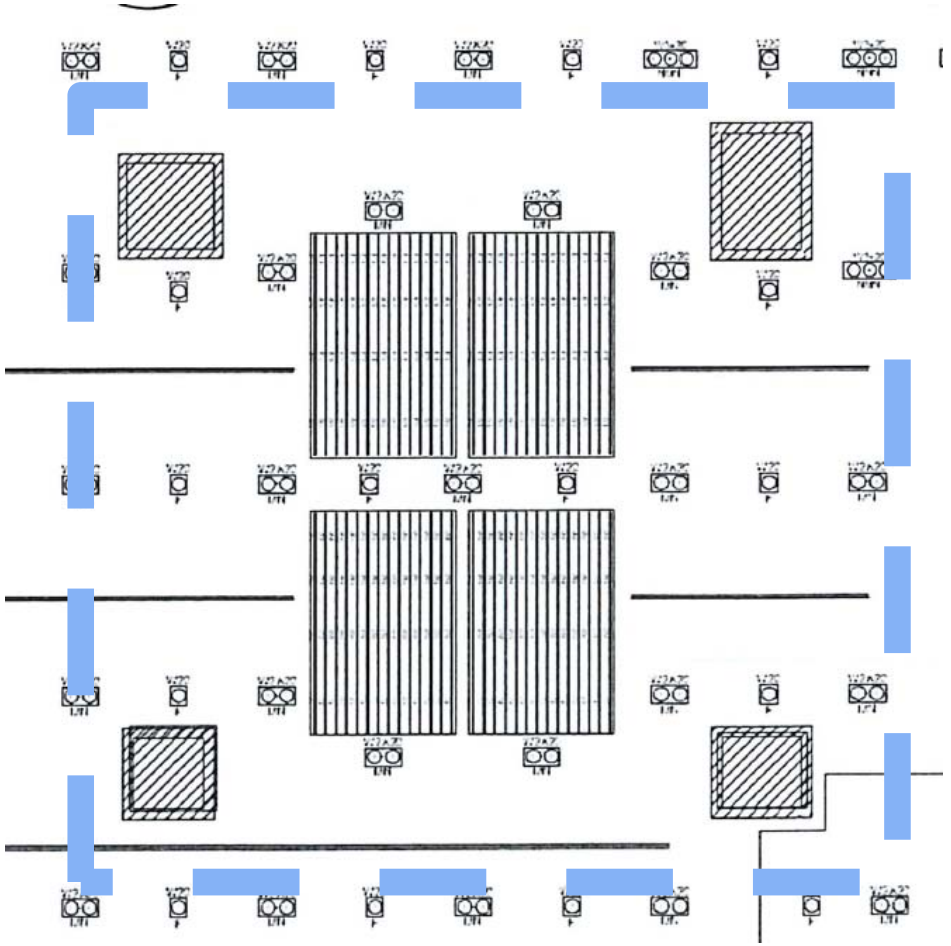
SUSP,NISCHE,MOLECULE,LED,E27,220-240V,5x3W,SH.ST
Art. No.: 153306-01
Pieces: 2

SUSP,SINGLE MOLECULE,DIA140,E27,220-240V,3W,MPSS
Art. No.: 150419-01
Pieces: 4

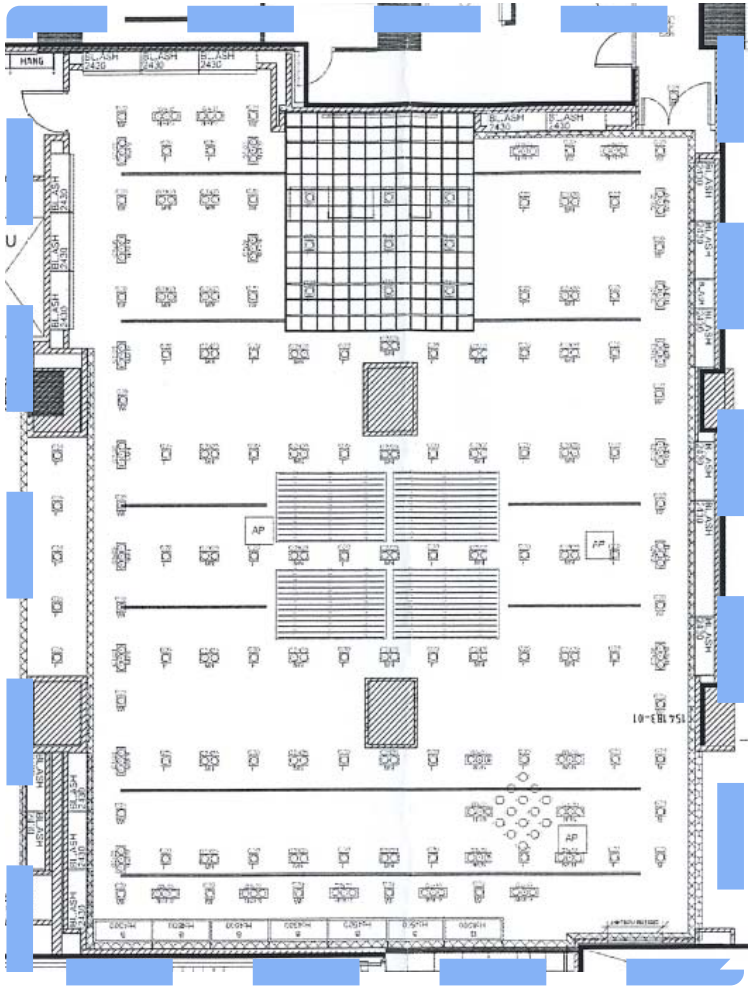
FUNCTIONAL WATT / m2:
20.95 watt/m2

DECORATIVE WATT / m2:
2.279 watt/m2

TOTAL WATT / m2:
23.229 watt/m2



EE-LG
Submission Quality



Space Naming ?
IFA for checking ?

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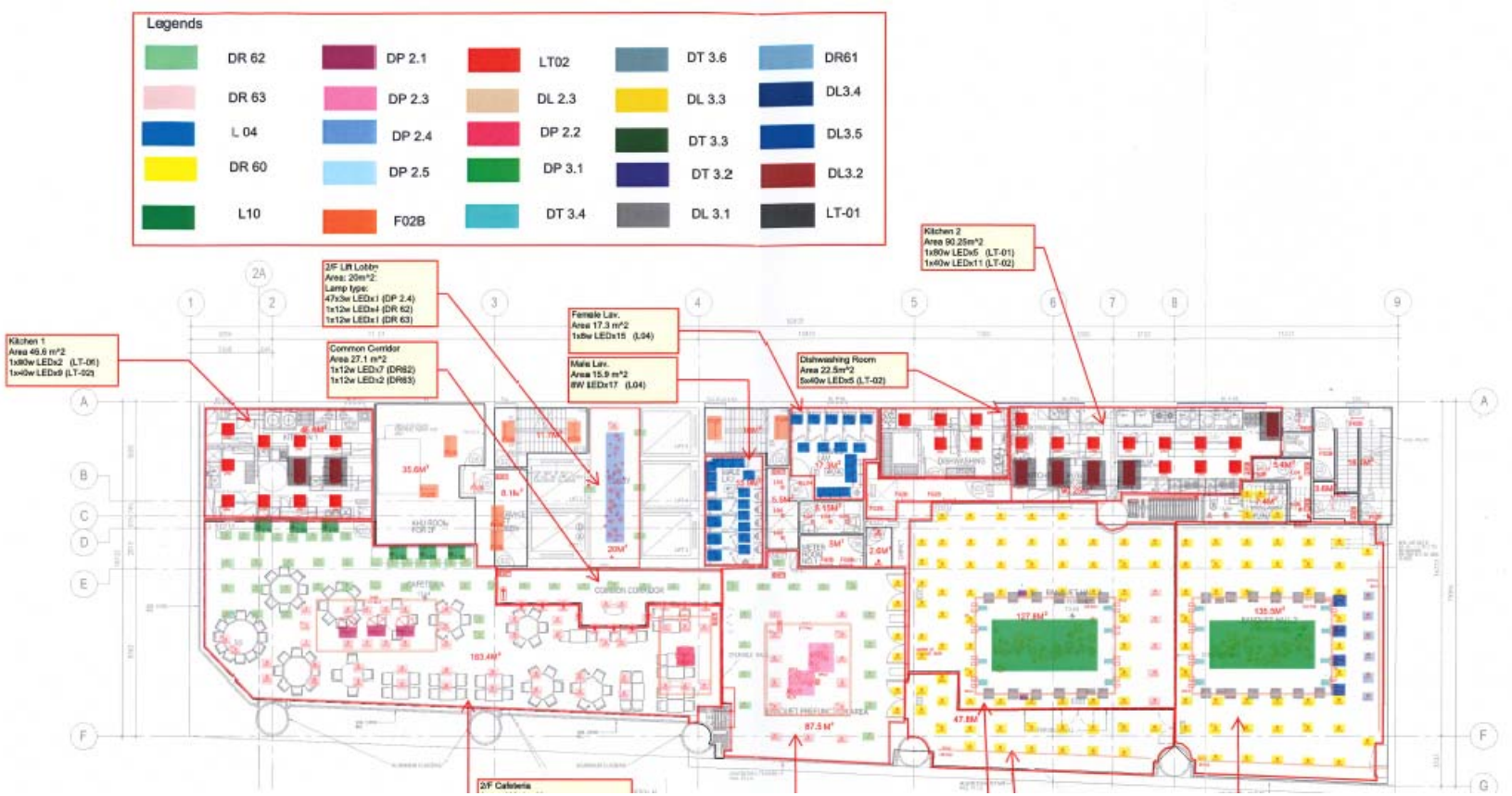
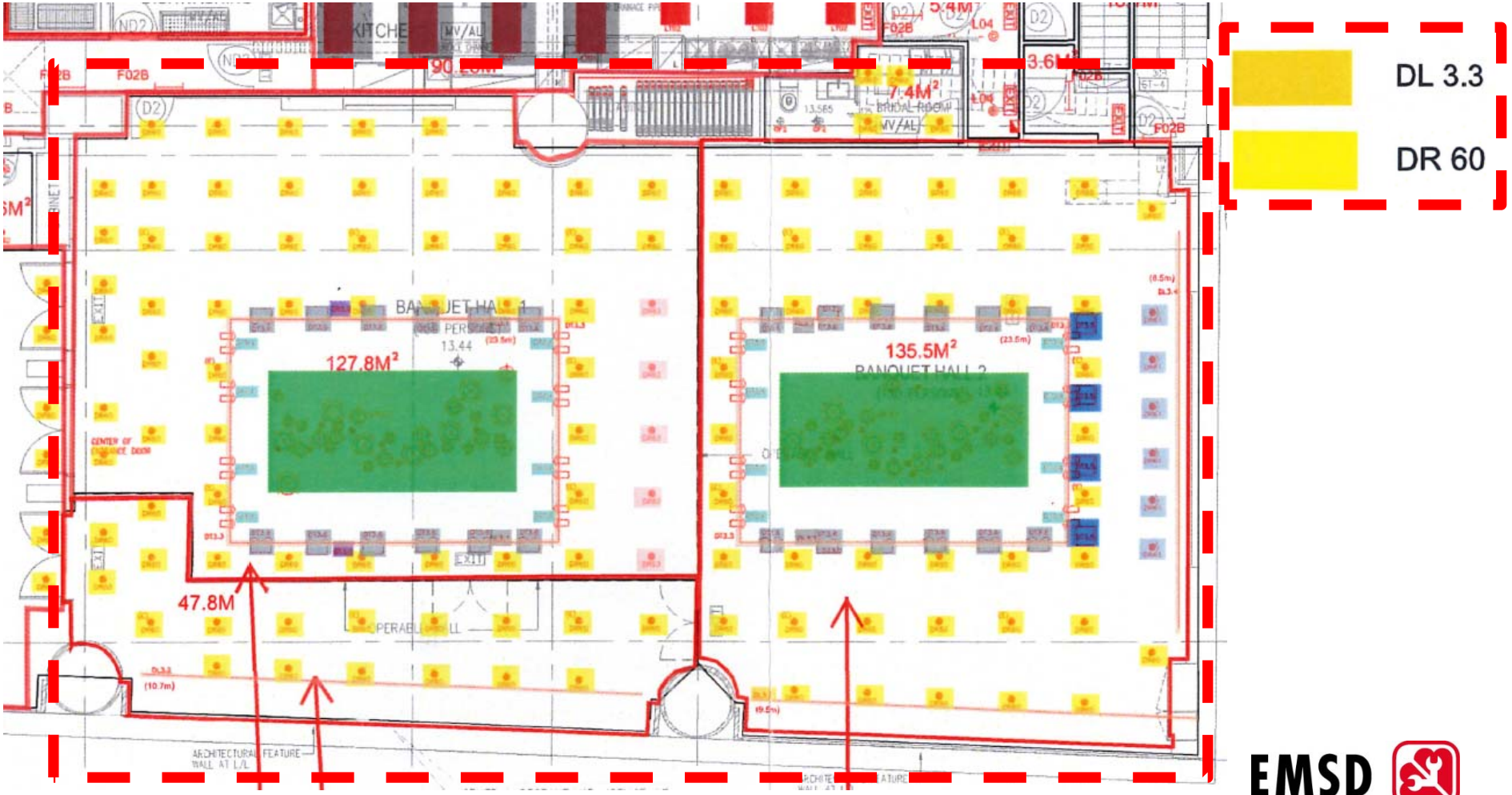
Form EE-LG
Submission Quality



EMSD

Form EE-LG
Submission Quality



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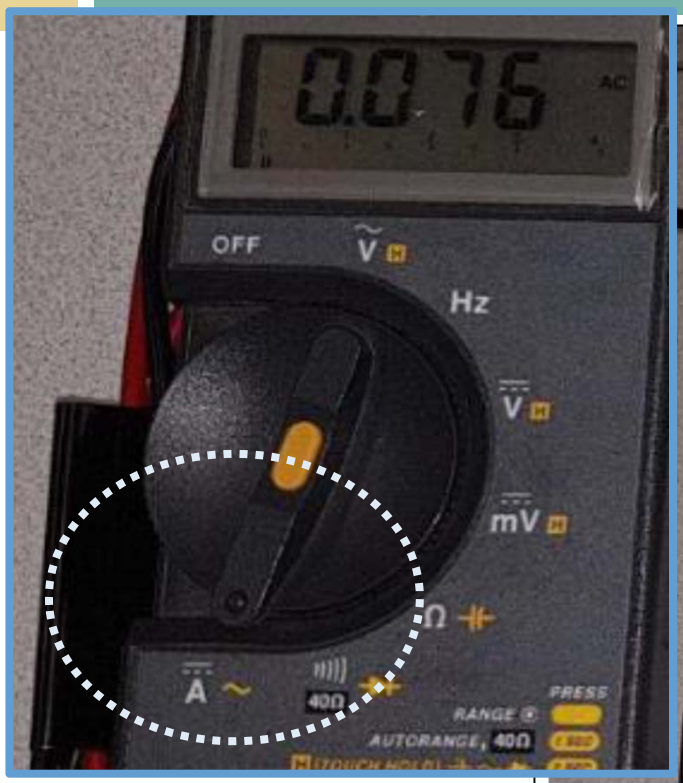
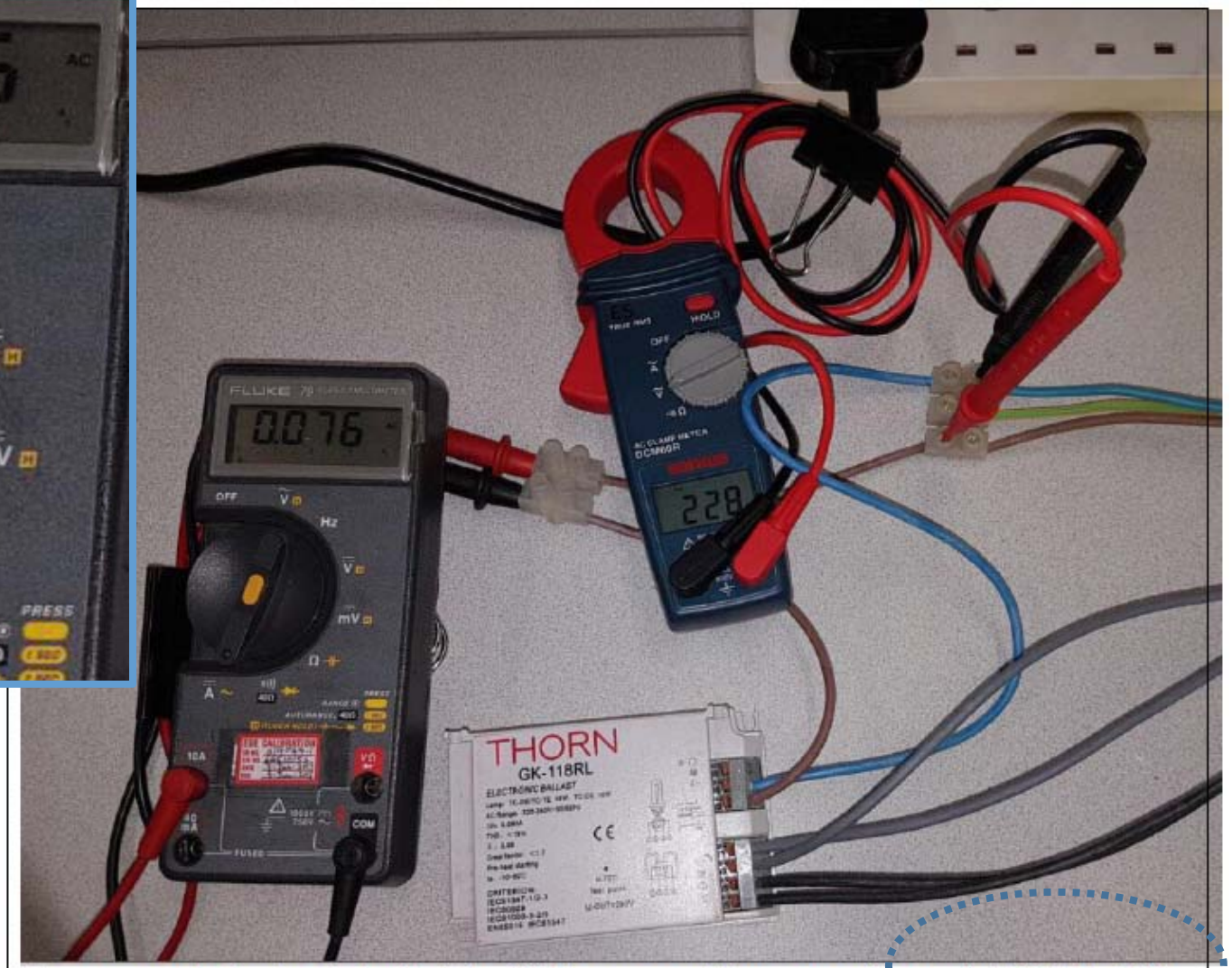
- EE-LG (Lighting)
  - Lighting Layout (Blow-up)
    - Scale (1:100 or larger)
    - Key dimensions – IFA verification
    - Critical Spaces:
      - Reported LPD very close to limit (e.g. 16.99 W/m² ??)
      - Repetitive spaces: e.g. Typical Guest Room, Toilet on typical floors

- EE-LG (Lighting)
  - Lighting Schedule
    - Comprehensive; with designation no.; lamp type; wattage
    - Consistency
    - Gear loss from vendors' technical sheet
    - On-site measurement of gear loss??

EE-LG (Lighting)

Lighting Schedule (Cont'd)





The power of electronic ballast for 18W compact fluorescent lamp is 0.076W, <1W.

- EE-LG (Lighting)
  - LPD Calculation
    - Space Ref. No., designation no. , quantity
    - Consistency
    - Identify and justify space(s) with ≤ 70W (or ≤100W to BEC 2012)

- EE-LG (Lighting)
  - Catalogue
    - Highlight
      - Rated power
      - Gear loss
    - Designation No.
  - Scope of works
    - Identify if bare shell conditions

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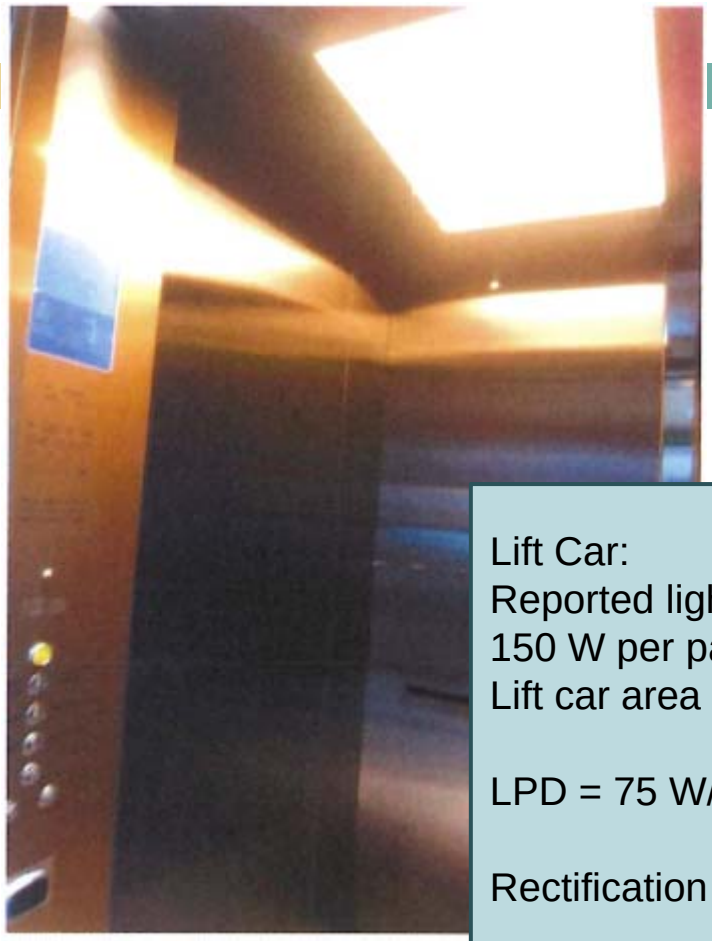
- EE-LG (Lighting)
  - Solely Decorative Lighting
    - Photo record with lighting effect (**NOT** the appearance of the fitting)
    - Highlighting on plan
    - Report LPD in Form EE-LG Part 3

Entrance Lobby:
Reported General Lighting LPD = 10.3 W/m^2
Claimed Solely decorative light (the panel type) = 27.3 W/m^2

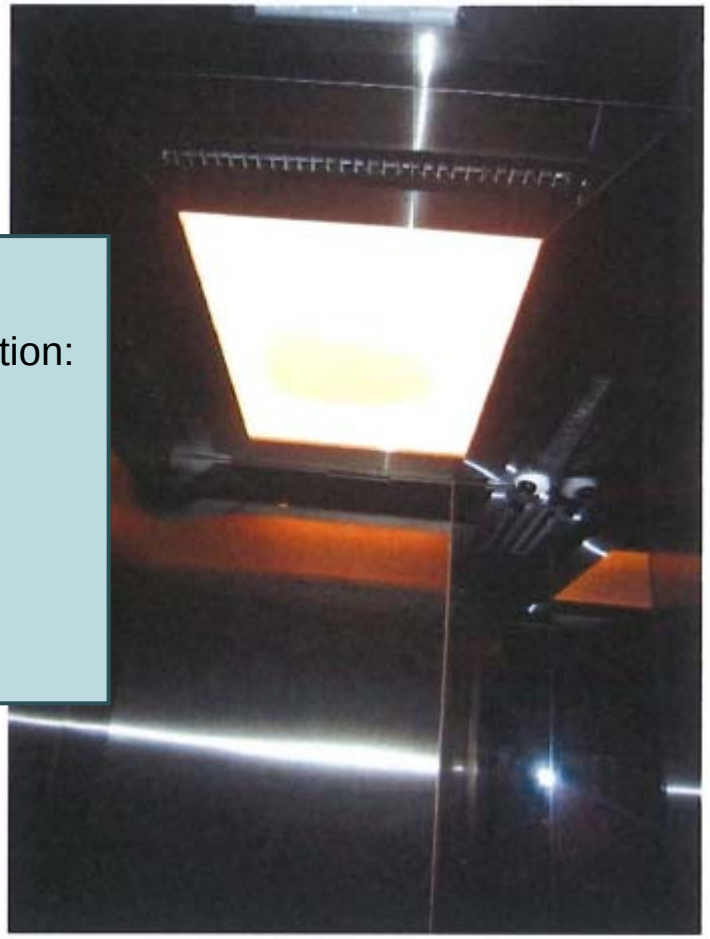
Rectification works is a MUST.



Lift Car:
Reported lighting power consumption:
150 W per panel
Lift car area < 2 m^2

LPD = 75 W/m^2

Rectification works is a MUST.



Panel type ceiling light:
NOT regarded as solely for decoration;
LPD countable;
To submit technical detail;
Justify power consumption

Stage 2 Submission:
REA regards the panel type ceiling light as decoration only;
Not report the power consumption /details;
Not shown on plan
Missed out in Form EE-LG Part 2 and 3

Wall washer aiming at surface texture might still be countable under the LPD calculation for not solely for decoration

Strip lights along steps

Not regarded as solely for decoration

- EE-LG (Lighting)
  - Automatic Lighting Control (ALC)
    - Assign lighting zone
    - Sensor location
    - Photo record

EE-LG (Lighting)

ALC (Cont'd)

Technical Data of Lighting Installation for Building Energy Code (BEC) 2015 — Form EE-LG

(Please refer to Section 5, Code of Practice for Energy Efficiency of Building Services Installation 2015 Edition)

Part 4 – Automatic Lighting Control (BEC Clause 5.6 and Table 5.4) Page ___ of ___

Space(s) governed by the automatic lighting control requirement (BEC Table 5.4)			Automatic Lighting control (BEC Clauses 5.6.1) (please tick where applicable)		Daylight Responsive Control (BEC Clause 5.6.2 and 5.6.3) (please tick where applicable)		
Drawing No. of lighting layout	Name of space / Space Ref. No. *1	Area of space (m²)	Type of control device deployed *2	Manual override provided	Daylight responsive control provided	Area (or Total Area) of: *3 Fenestration (m²)	Assigned lighting zone(s) (m²)
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		
			☐ (a) ____ ☐ (b) ☐ (c) ____	☐ Yes ☐ N/A	☐ Yes ☐ N/A		

Remarks (applicable to Part 4) :-

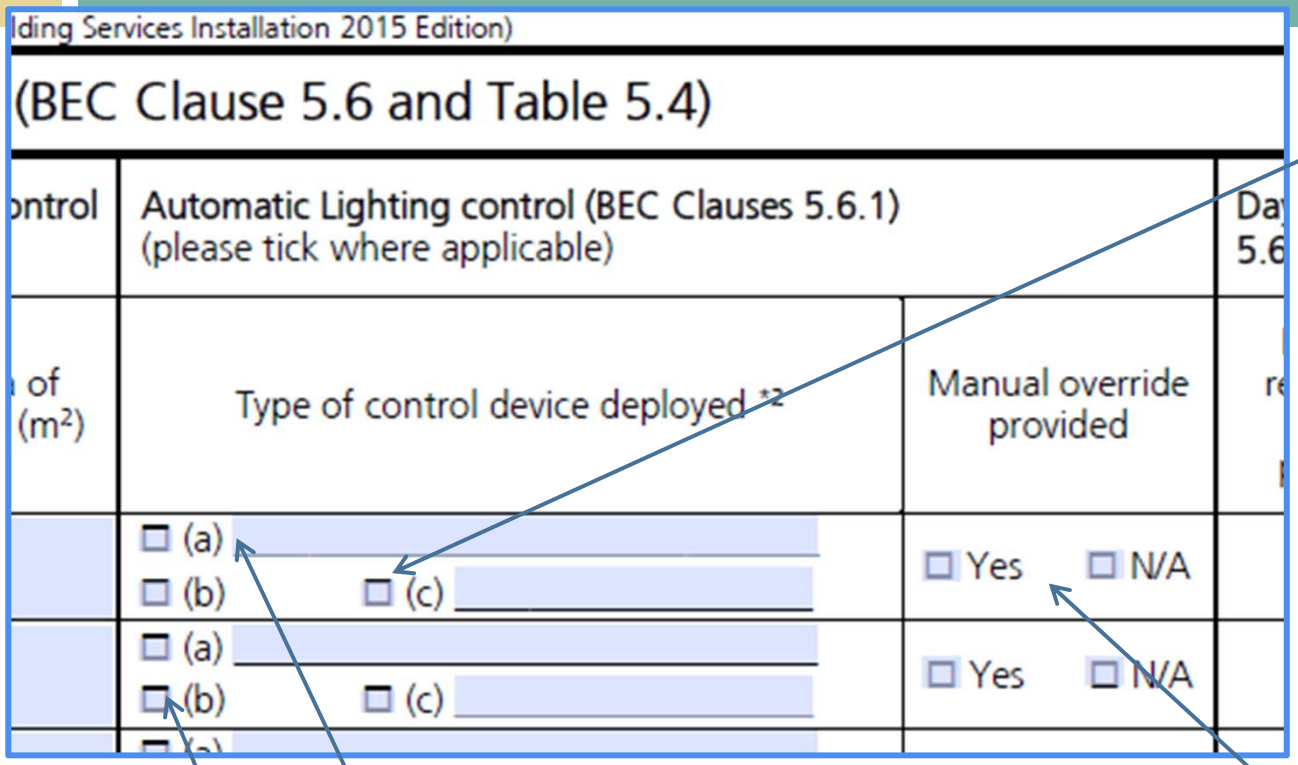
*1 Please indicate the space Ref No. / name of space on the relevant drawing. Exclude spaces each with total electrical power consumed by the complete fixed lighting installation of 150W or below.

*2 Tick (a) for automatic time scheduling device. Please identify the type of control (e.g. By BMS, programmable timer, etc.) and the anticipated off-hour duration. Tick (b) for deploying occupant sensor. Tick (c) for other device as identified on the space provided.

*3 Please insert total area for multiple discrete fenestrations or series of fenestration within the space. Please indicate the total of all the lighting zone areas within the space.

EE-LG (Lighting)

ALC (Cont'd)



lding Services Installation 2015 Edition)

(BEC Clause 5.6 and Table 5.4)

ontrol	Automatic Lighting control (BEC Clauses 5.6.1) (please tick where applicable)		Da 5.6
of (m^2)	Type of control device deployed *2	Manual override provided	re
	☐ (a) ☐ (b) ☐ (c)	☐ Yes ☐ N/A	
	☐ (a) ☐ (b) ☐ (c)	☐ Yes ☐ N/A	

Check (c) for other device and fill in device type

Check (a) for automatic time scheduling device
Fill in off-hour

Fill in if provided w/ manual override and submit control diagram if yes

Check (b) for occupant sensor

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EE-LG (Lighting)

ALC (Cont'd)

Input total of lighting zone areas
Show each zones on plan

Input total fenestration area of that lighting space
Show on plan

Check Yes for applicable lighting space

Form EE-LG

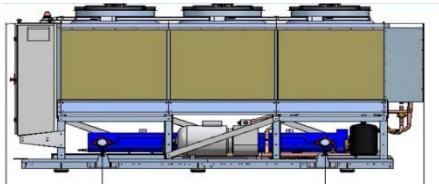
Page ___ of ___

override vided	Daylight Responsive Control (BEC Clause 5.6.2 and 5.6.3) (please tick where applicable)		
	Daylight responsive control provided	Area (or Total Area) of: *3	
		Fenestration (m^2)	Assigned lighting zone(s) (m^2)
☐ N/A	☐ Yes ☐ N/A		
☐ N/A	☐ Yes ☐ N/A		
☐ N/A	☐ Yes ☐ N/A		
	☐ Yes		

EMSD

- EE-AC (Air-conditioning)
  - Coefficient of Performance
  - System fan motor power
  - AC Control
  - Pressure drop & Flow Velocity
  - Thermal Insulation
  - Energy Metering

- EE-AC (Air-conditioning)
  - Coefficient of Performance
    - Chiller, U-AC, VRF System
    - Justify with vendor's technical data
    - Tender bid return, equipment schedule not acceptable
    - Air-cooled chillers
      - BEC Cl. 6.12.1: Factory-designed and pre-fabricated electrically-driven equipment to comply Table 6.12a or 6.12b.
      - MUST include condenser fans power



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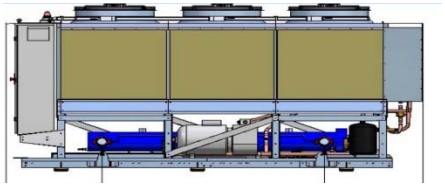
- EE-AC (Air-conditioning)
  - Coefficient of Performance
    - Air-cooled chillers/chilled water plant
      - High static condenser fans for intake air acoustic louvre, discharge air silencers;
      - Show photo record;
      - Installation details;
      - Report COP of the same model with standard condenser fans.



- EE-AC (Air-conditioning)
  - System fan motor power
    - Calculation (W per L/s)
    - Designation No. consistency (Cal. Vs Schematic diagram/layout)
    - PAU excluded

- EE-AC (Air-conditioning)
  - AC Control
    - Pumping system variable flow *[≤ 30% power (BEC2015) at 50% flow]*;
    - Temperature control *[automatic space temp control, set point range, dead band]* ;
    - Humidity control;
    - Zone control *[each a/c zone w/ a separated temp. control device];*
    - Off-hours control *[automatic shutdown or control setback]*
    - Control schematic/logic/description, point schedule etc.

- EE-AC (Air-conditioning)
  - Pressure drop & Flow Velocity
    - Chilled water, condenser water pipe sizing
    - Calculation
    - Water-side piping schematic: Pipe size, water flow velocity and pressure drop compliance
  - Thermal Insulation
    - Submit detail calculation if not following BEC tabulated values
    - Schedule of installed thickness
    - Catalogue highlighted with key figures
    - Conduct proper checking

EE-AC (Air-conditioning)

Thermal Insulation

Calculation of Insulation Thickness	Description : Outdoor Condition for Chiller Water Pipe
Project :	
Sub-contract :	
Sub-contractor :	

Location: Outdoor
Material: Elastomeric - Armaflex

The surface heat transfer coefficient (h):	13.5	$W/m^2°C$
The thermal conductivity of insulating material (λ):	0.036	W/m.°C
Dew Point:	27	°C
Coincident Relative Humidity:	60	%
The ambient temperature:	35.5	°C DB
The Temperature of Cold Surface:	5.5	°C DB

Inside diameter of Pipe	Outside diameter of Pipe	Estimated minimum thickness (La)	**Recommend Thickness**
100.00	114.30	7	100
150.00	168.30	7	100
200.00	219.10	7	100
250.00	273.00	7	110

No Explanation on out of range figures

EMSD

EE-AC (Air-conditioning)

Thermal Insulation

Chilled Water Pipe Insulation Thickness Compliance List

Insulation Thickness for Chilled Water Pipe - Outdoor					
Pipe Size (mm)	Thermal Conductivity (W/m-℃)	Surface Coeff. (W/m^2-℃)	Temp Diff (℃)	Insulation Thickness (mm)	BEC required Thickness (mm)
25	0.022	10	4-6	40	15
32	0.022	10	4-6	40	16
40	0.022	10	4-6	40	17
50	0.022	10	4-6	40	18

Out of Range Figures

Insulation Thickness for Chilled Water Pipe - Unconditioned Space					
Pipe Size (mm)	Thermal Conductivity (W/m-℃)	Surface Coeff. (W/m^2-℃)	Temp Diff (℃)	Insulation Thickness (mm)	BEC required Thickness (mm)
65	0.022	10	4-6	40	24
80	0.022	10	4-6	40	24
100	0.022	10	4-6	40	25
125	0.022	10	4-6	40	26
150	0.022	10	4-6	40	26
200	0.022	10	4-6	40	27
250	0.022	10	4-6	40	27

Photo record shows bright surface
But the “h” is for black matt surface

Checking NOT conducted

EMSD

- EE-AC (Air-conditioning)
  - Energy Metering (EM)
    - Photo record - installed EM for chiller COP determination
    - Photo record - installed EM for chilled water plant COP determination
    - Water-cooled chilled water plant:
      - Energy metering of chilled water system
      - Metering devices - chillers
      - Metering devices – cooling towers
      - Metering devices – condenser water pump motors
      - Data feedback to DDC/CCMS/BMS

EMSD

- EE-AC (Air-conditioning)
  - Energy Metering (EM)
    - Continuous monitoring facilities [BEC Cl. 6.13]
    - Additional guidance [TG-BEC Cl. 6.13 (b) & (c)]
      - Data taken at the same instant of time;
      - Metering with accumulative function (power to energy);
      - Devices for data storage, calculation, output to man-machine interface display etc.
    - Submit supporting information
      - Control logic
      - Point schedule
      - Printout / Graphic Display

- EE-EL (7 Headings)
  - Schematic wiring diagram related
  - Cu loss calculation
  - Metering Devices
  - THD and TPF connection point
  - Balancing of 1-phase load
  - Motor Efficiency
  - Motor sizing

- EE-EL
  - Schematic wiring diagram related
    - Involving multiple blocks/towers, shows demarcation for each blocks/towers
    - Highlight:
      - Circuits >200A & <400A (1-ph, 3-ph)
      - Circuits >=400A (1-ph, 3-ph)
      - 3-ph meters from power co.
      - Metering devices
      - Spare ways for THD/TPF correction device connection

- EE-EL (Electrical)
  - Cu loss calculation
    - Cu loss % → Types of circuit
    - Circuit type definitions:
      - Cl. 2.1, BEC 2012 & BEC 2015
    - Illustration of circuit types:
      - Fig. 7.4 (b) ii), TG-BEC2012 & TG-BEC2015
    - Requirements:
      - Cl. 7.4 Power Distribution Loss, BEC 2012 & BEC 2015
    - Summary:
      - Table 7.4 (b) ii), TG-BEC2012 & TG-BEC2015

- EE-EL
  - Cu loss calculation

Figure 7.4 (b) ii) : Illustration of different types of circui

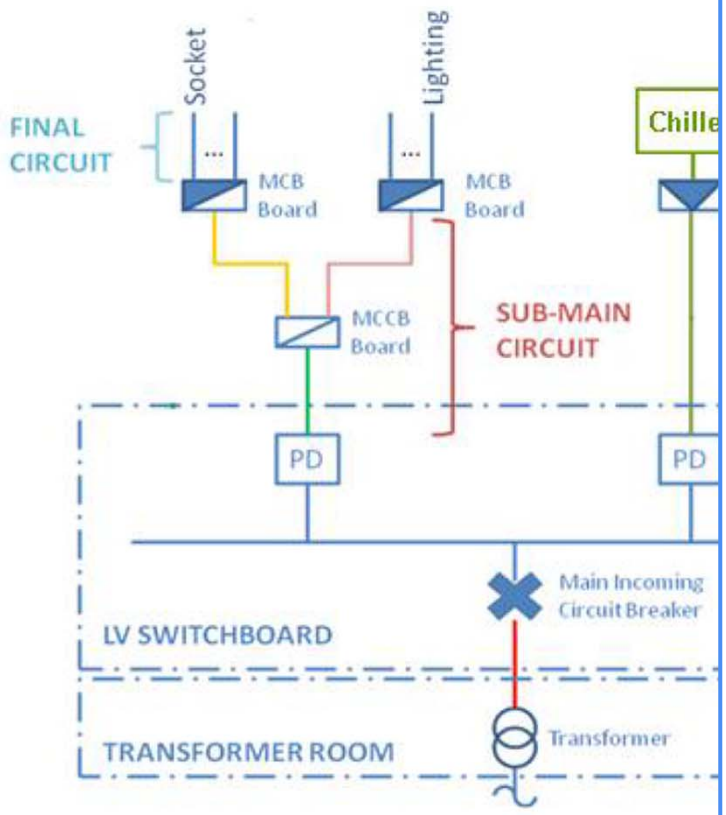


Table 7.4 (b) ii) : Summary of Maximum Allowable Circuit Copper Loss

Circuit Type			Connection	Copper Loss
Main Circuit			Distribution transformer to low-voltage switch board (LV SwBd)	- ≤ 0.5%, of total active power, or transformer room and main switch room directly beside, above or below each other, and - Neutral conductor to be sized with rating ≥ rating of phase conductor
Feeder Circuit			From LV SwBd, or from isolator after main fuse[@3] of electricity supplier, direct to major equipment	≤ 2.5% of total active power [@1]
Sub-main Circuit	non-residential building	≤100m	From LV SwBd, or from isolator after main fuse[@3] of electricity supplier, to local distribution board	≤ 1.5% of total active power
		>100m		≤ 2.5% of total active power [@2]
	residential building			≤ 2.5% of total active power
Final circuit >32A (based on circuit protective device rating)			Local distribution board to equipment / outlet point (e.g. luminaire, socket)	≤ 1% of total active power

Remarks :

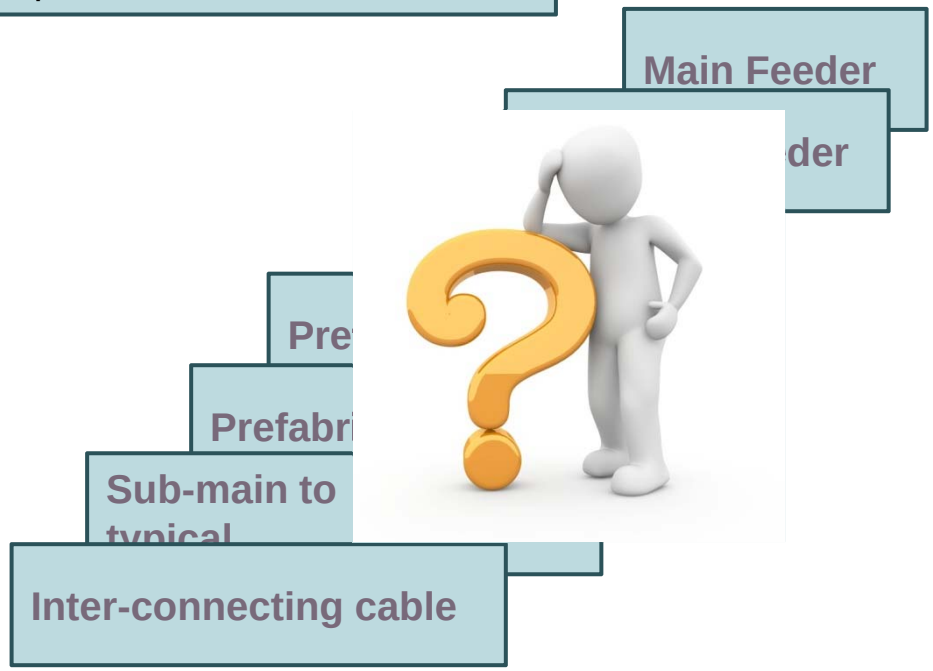
[@1] requirement does not govern a circuit solely used for correction of reactive and/or distortion power

[@2] subject to sum of losses in sub-main and over 32 A final circuits, if any, ≤ 2.5%

[@3] refers to a mains supply via a direct feed cable of the electricity supplier, which is adopted when the supply does not involve a consumer sub-station.

- EE-EL
  - Cu loss calculation

7-Page Schedule over 200 circuits, **ALL** reported as Sub-main circuits



Item	Cable Code	Catergory	Ph	Volt (V)	Design Loading (kW)
A/	E/8/d	Sub-main Feeder (LIFT NO. Blk B-2)	3	380	12.00
A/	E/9	Main Feeder (Blokc A & B Potable & Flushing pump DB-CAPD2)	3	380	52.00
A/	E/10	Main Feeder (CARPARK A sump pump DB-CASP1)	3	380	90.00
A/	E/11	Main Feeder (CARPARK A CAT 2 63A 4P ATS)	3	380	34.00
A/	E/11/a	Sub-main Feeder DB-C2A2	3	380	34.00
A/	E/11/a/1	Sub-main Feeder (CARPARK A CAT 2 DB-C2A3)	3	380	17.00
A/	E/13	Main Feeder (CARPARK A UNDER Block A FS PUMP)	3	380	32.00
A/	E/14	Main Feeder (CARPARK A UNDER Block A SPRINKLER PUMP)	3	380	15.00
A/	E/15	Main Feeder (CARPARK A ESS LANDLORD L&SP) 100A 4P ATS	3	380	30.00
A/	E/15/a	Sub-main Feeder (CARPARK A ESS LANDLORD L&SP DB-ECPA2)	3	380	18.00
A/	E/15/b	Sub-main Feeder (CARPARK A ESS LANDLORD L&SP DB-ECPA3)	3	380	12.00
A/	G/2	Main Feeder (Main Switch Room A to LNM 3)	3	380	758.10
A/	G/2/a1	Sub-main Feeder (EL SMR LVSB1-02A1 to TOWER 25)	3	380	200.00
A/	G/2/a1/1	Prefabricated Main	3	380	200.00
A/	G/2/a1/2	Prefabricated branch	3	380	55.00
A/	G/2/a1/3	Sub-main to typical MCB	3	380	15.00
A/	G/2/a2	Sub-main Feeder (Block C)	3	380	350.00
A/	G/2/a2/1	Sub-main to typical MCB (Block C)	3	380	35.00
A/	G/2/b1	Riser Main (LVSB1-02A1 toTOWER 23 EL ROOM)	3	380	200.00
A/	G/2/b1/3	Sub-main to typical MCB	3	380	15.00
A/	G/2/b2	Riser Main (LVSB1-02A1 to TOWER 23 EL ROOM)	3	380	200.00
A/	G/2/b2/3	Sub-main to typical MCB	3	380	15.00
A/	G/2/c1	Riser Main (LVSB1-02A1 to TOWER 22 EL ROOM)	3	380	200.00
A/	G/2/c/3	Sub-main to typical MCB	3	380	15.00
A/	G/2/c2	Riser Main (LVSB1-02A1 to TOWER 22 EL ROOM)	3	380	200.00
A/	G/2/c/3	Sub-main to typical MCB	3	380	15.00
A/	G/2/e	Sub-main Feeder (For carpark A EV charger DB-AEV2)	3	380	55.00
A/	G/2/e/1	Sub-main Feeder (AEV2B)	3	380	15.00
A/	G/2/e/2	Sub-main Feeder (AEV2C)	3	380	15.00
A/	G/2/e/3	Sub-main Feeder (AEV2A)	3	380	25.00
A/	G/2/f	Sub-main Feeder	3	380	124.00
A/	G/2/f/1	Sub-main Feeder (CARPARK A L&SP EL METER CABINET 2 DB-NCPA5)	3	380	20.00
A/	G/2/f/2	Sub-main Feeder (CARPARK A L&SP)	3	380	20.00

Resubmission

EMSD

- EE-EL
  - Metering Devices
    - Technical Detail (Catalogue)
    - 31st order THD measurement
  - THD and TPF connection points
    - Photo record of spare ways
    - X-ref. of MCC drawing no.
    - Leasing/Tenancy agreement from Developer – tenant's scope on spare ways provision

- EE-EL
  - Balancing of 1-ph loads
    - Calculation: unbalance <= 10% (for ≥ 400A circuit with 1-ph loads)
  - Motor Efficiency
    - Fan/pump motor catalogue as justification of the reported efficiency figures
    - Consistency of model no./designation no.
    - Pump motors under other installations (e.g. plumbing & drainage) shall be included

- EE-EL
  - Motor Sizing
    - Calculation:
      - Motor designation No.
      - Fan air/Water pump flow rate;
      - Pressure head;
      - Fan/Pump efficiency;
      - Anticipated system load;
      - Rating of selected motor

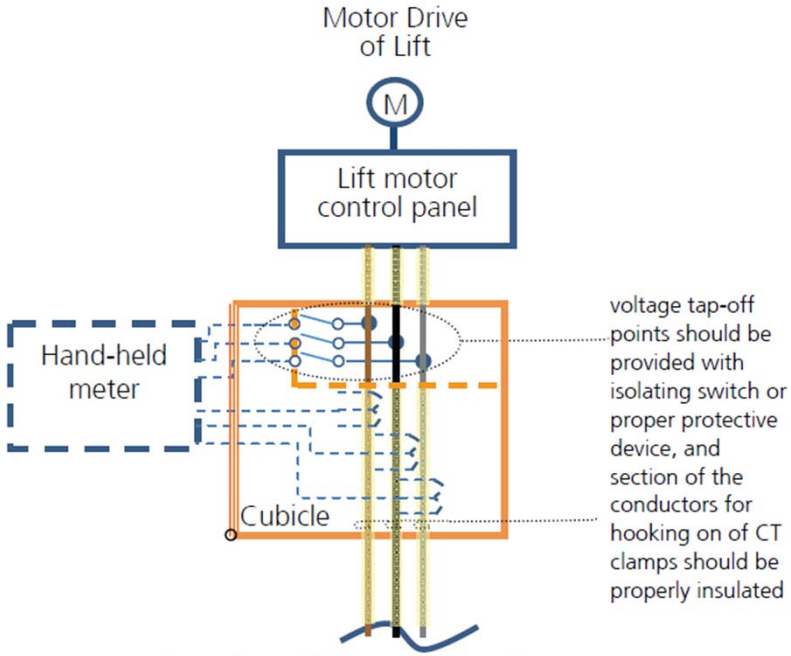
$$\frac{\text{Motor Output Power}}{\text{Anticipated System Load}} \leq 125\%$$

- EE-LE (Lift & Escalator)
  - Measurement Record (Running Power, TPF & THD etc.)
  - Metering & monitoring devices
  - Lift car decoration load
  - Lift standby mode
  - Escalator automatic speed reduction provision
  - Lift regenerative braking
  - Lift car lighting

- EE-LE
  - Measurement Record
    - Photo record: certified test report/record of power consumption; TPF & THD measurement results
  - Metering & monitoring devices
    - Photo record on installed metering devices;
    - Photo record of installed provision of measurement (BEC 2012 Applicable)

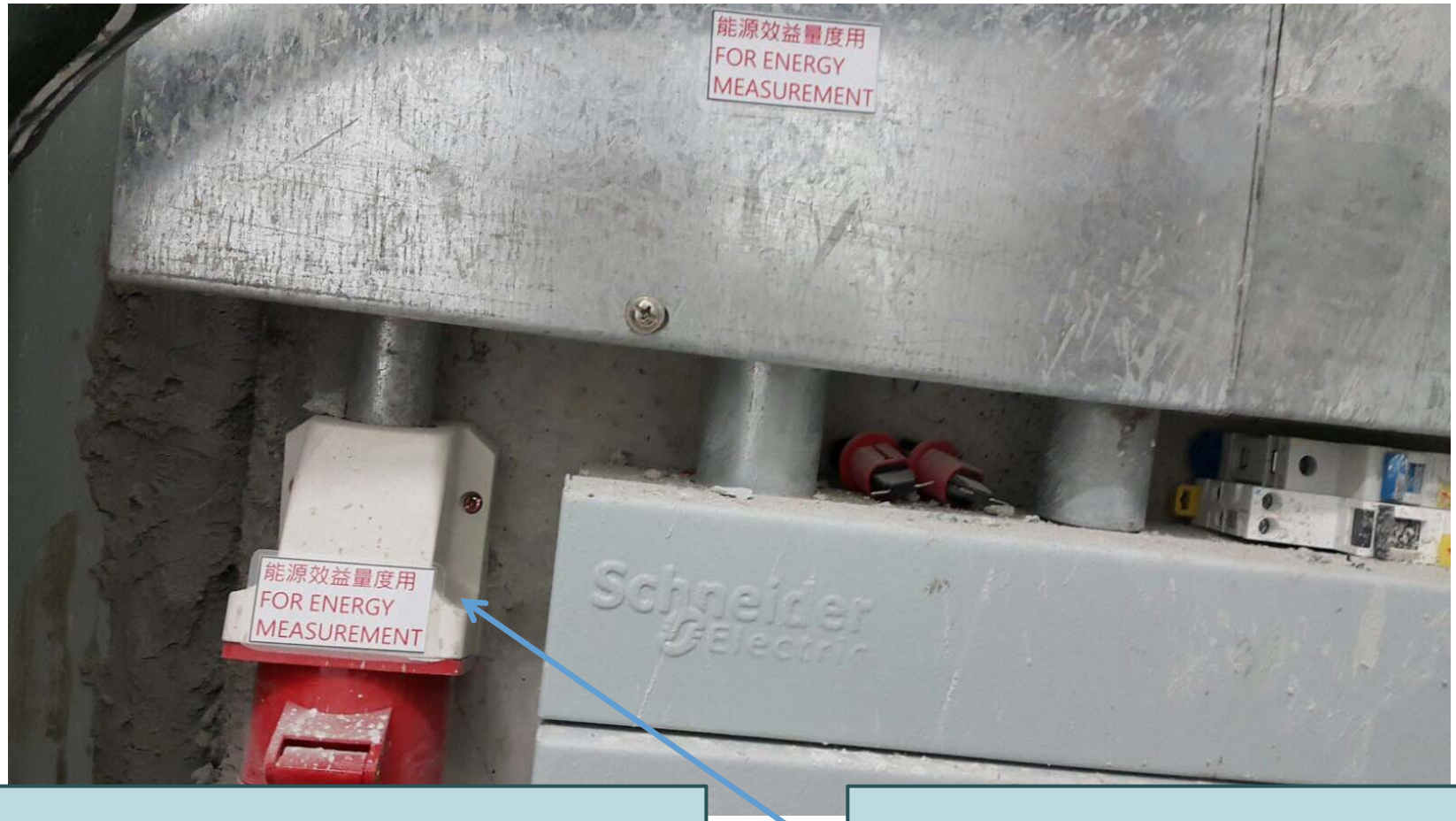
- EE-LE
  - Metering & monitoring devices

Figure 8.7 (a) : Illustrative diagram of provision for measurement in a cubicle



EMSD

EE-LE



Shall Make Technically Viable Reply

REA referred Lift Contractor who replied: S/O was the provision of measurement.

Form EE-LE
Proper Photo Record – Provision of Measurement

Lift no.1

A. Running Current, Active Power and Power Factor

Metering Device

Juction Box

Equipment Setup for measurement

B. THD – CH1, CH2, CH3

< Max THD 35% under clause 8.6.1

< Max THD 35% under clause 8.6.1

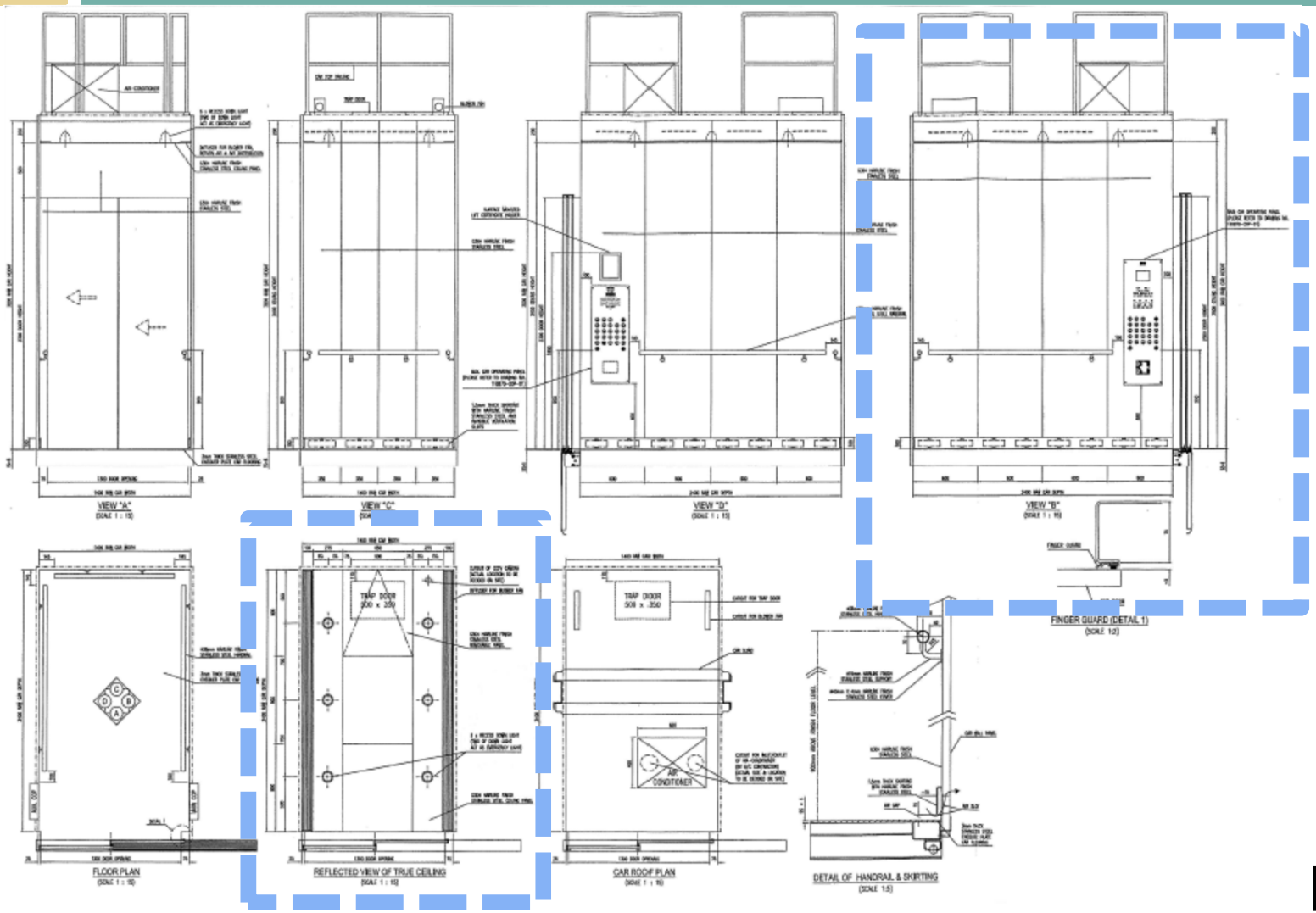
< Max THD 35% under clause 8.6.1

EMSD

- EE-LE (Lift & Escalator)
  - Lift car decoration load
    - Submit calculation
  - Lift standby mode
    - Ventilation or A/C automatic shut off
    - Control wiring diagram
    - Confirmation from registered lift engineer (alternative)
  - Escalator automatic speed reduction provision
    - Photo record
  - Lift regenerative braking
    - Photo record

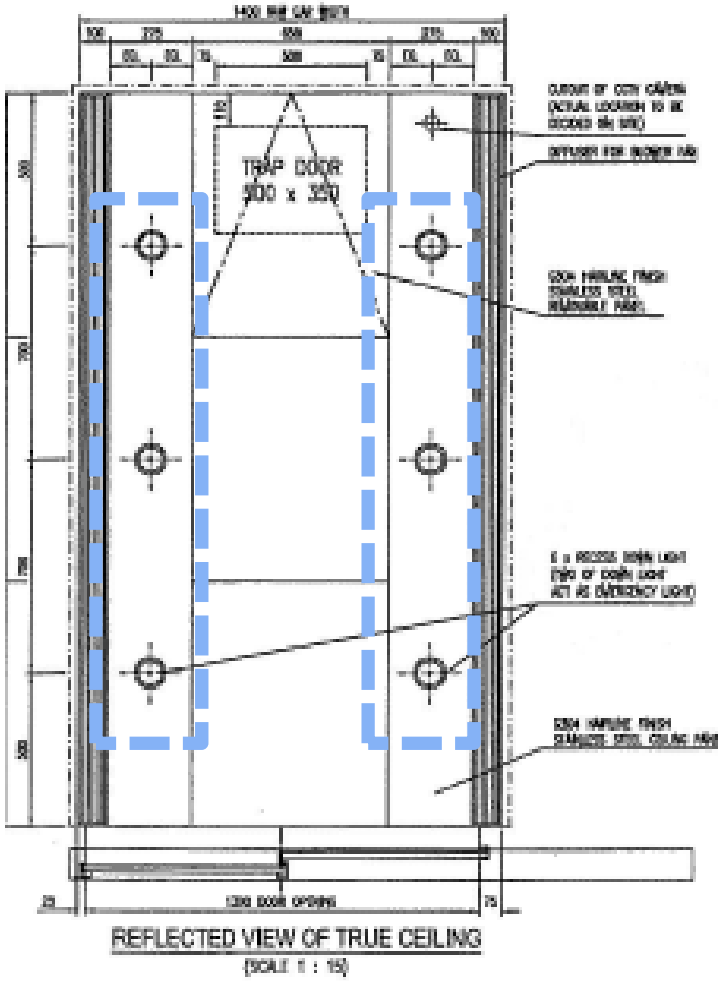
- EE-LE (Lift & Escalator)
  - Lift car lighting
    - As-fitted record (drawing) of installed lighting (showing wattage) with justification
    - < 100W ; or < 70W
    - LPD compliance if exceeding the exception criteria
    - REA shall vet the drawing and supplement with necessary information

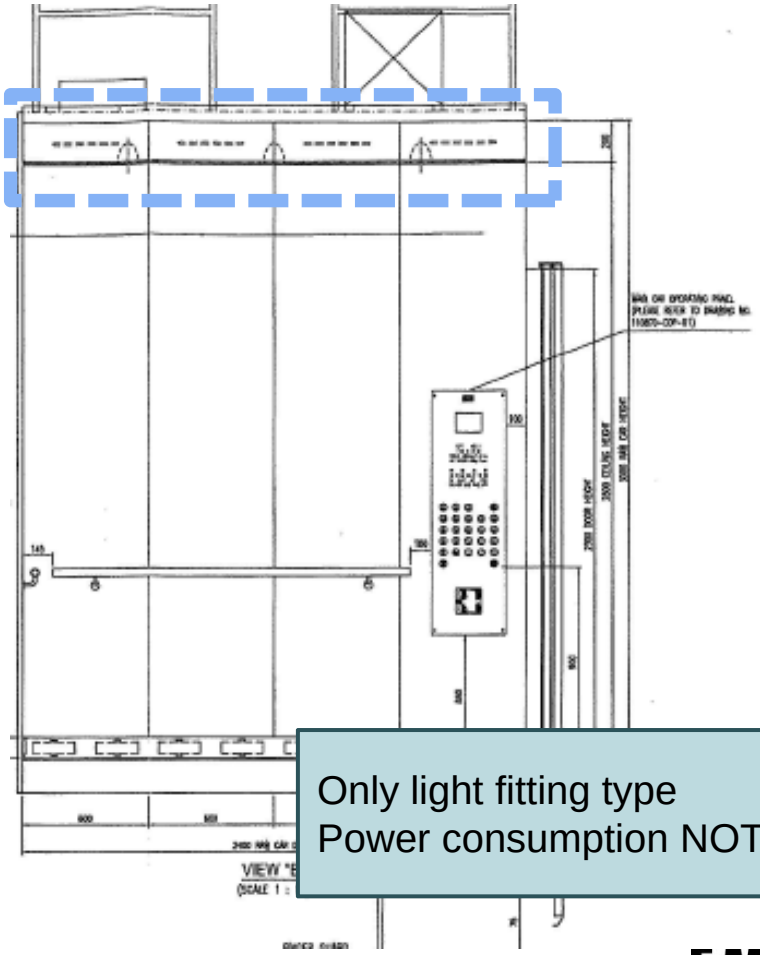
EE-LE
Insufficient Information



EMSD

EE-LE
Insufficient Information

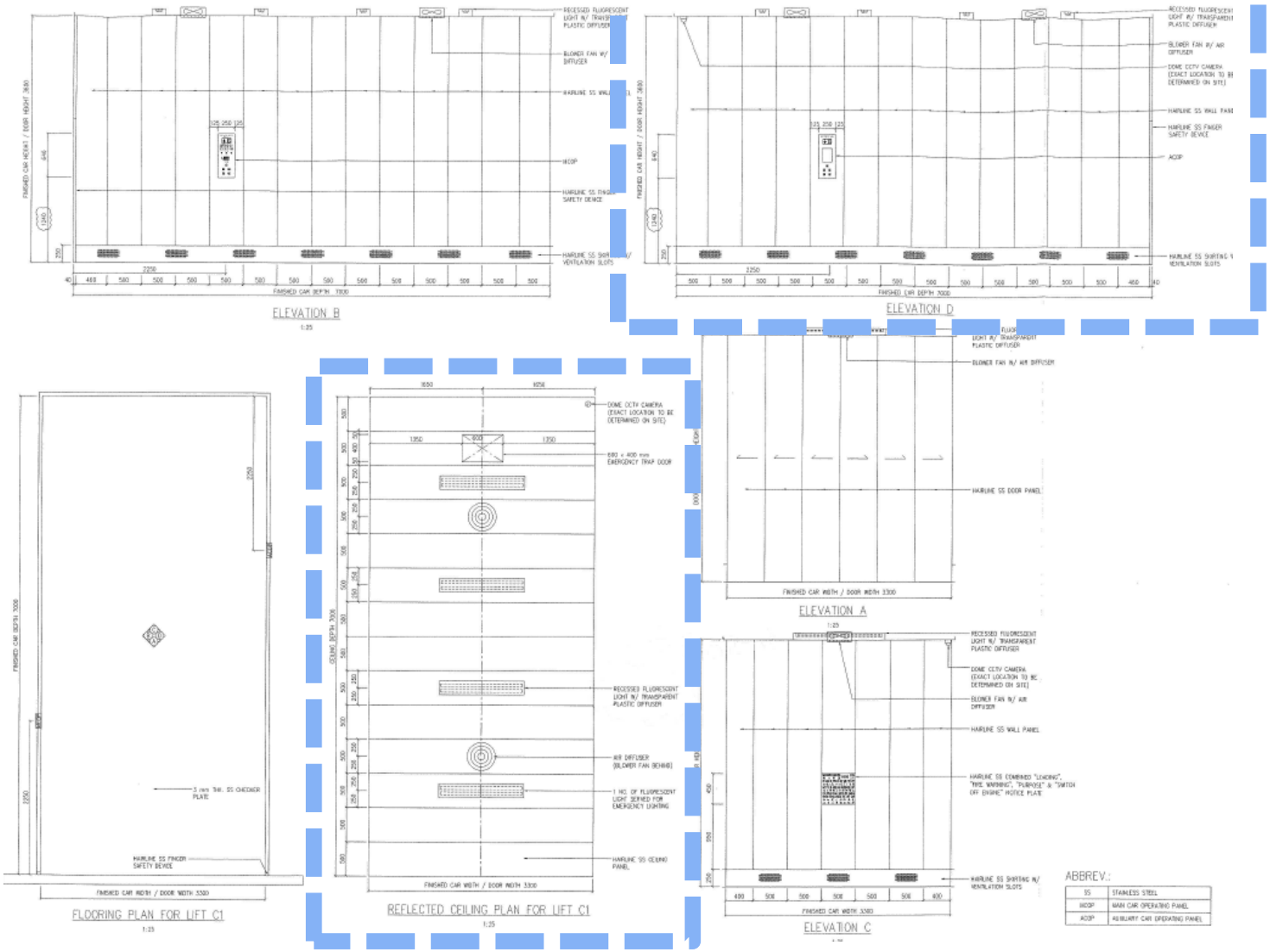




Only light fitting type
Power consumption NOT shown

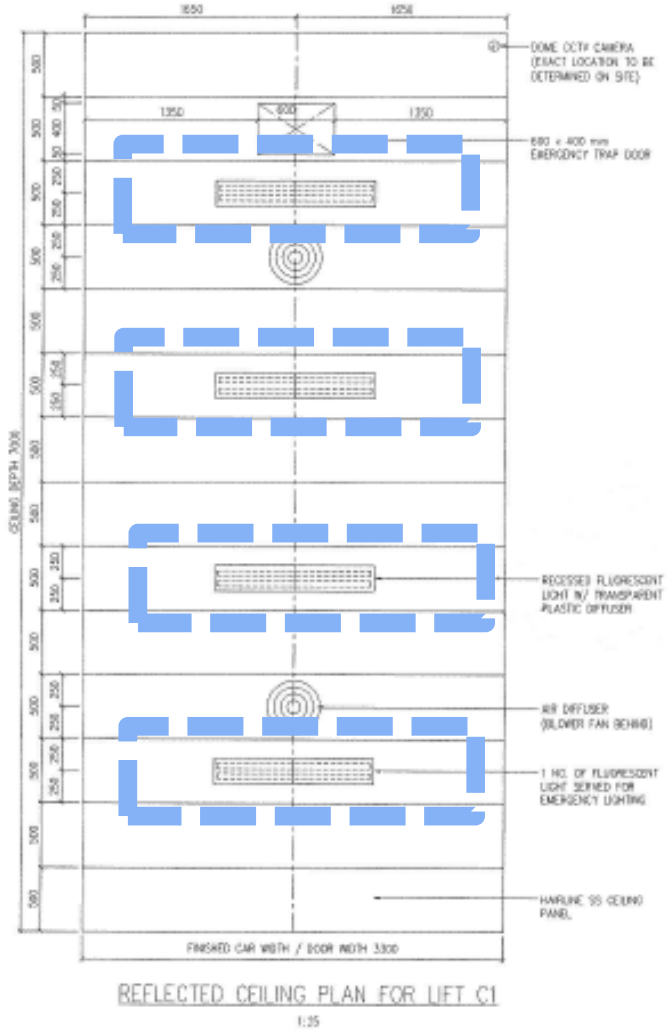
EMSD

EE-LE
Submission Quality



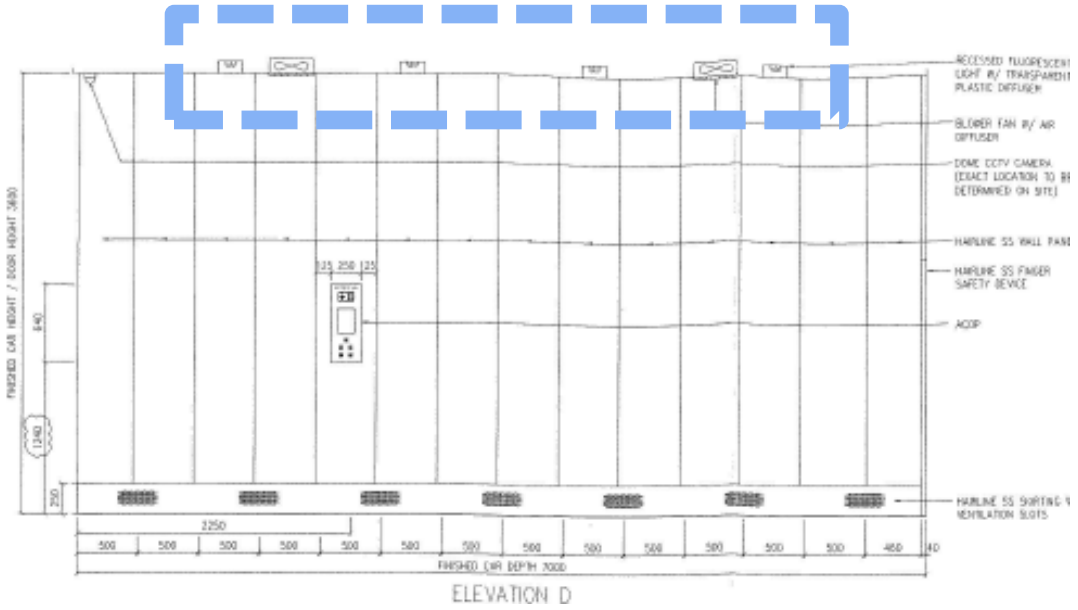
EMSD

EE-LE
Submission Quality



REFLECTED CEILING PLAN FOR LIFT C1

1:25



ELEVATION D

Only light fitting type
Power consumption NOT shown

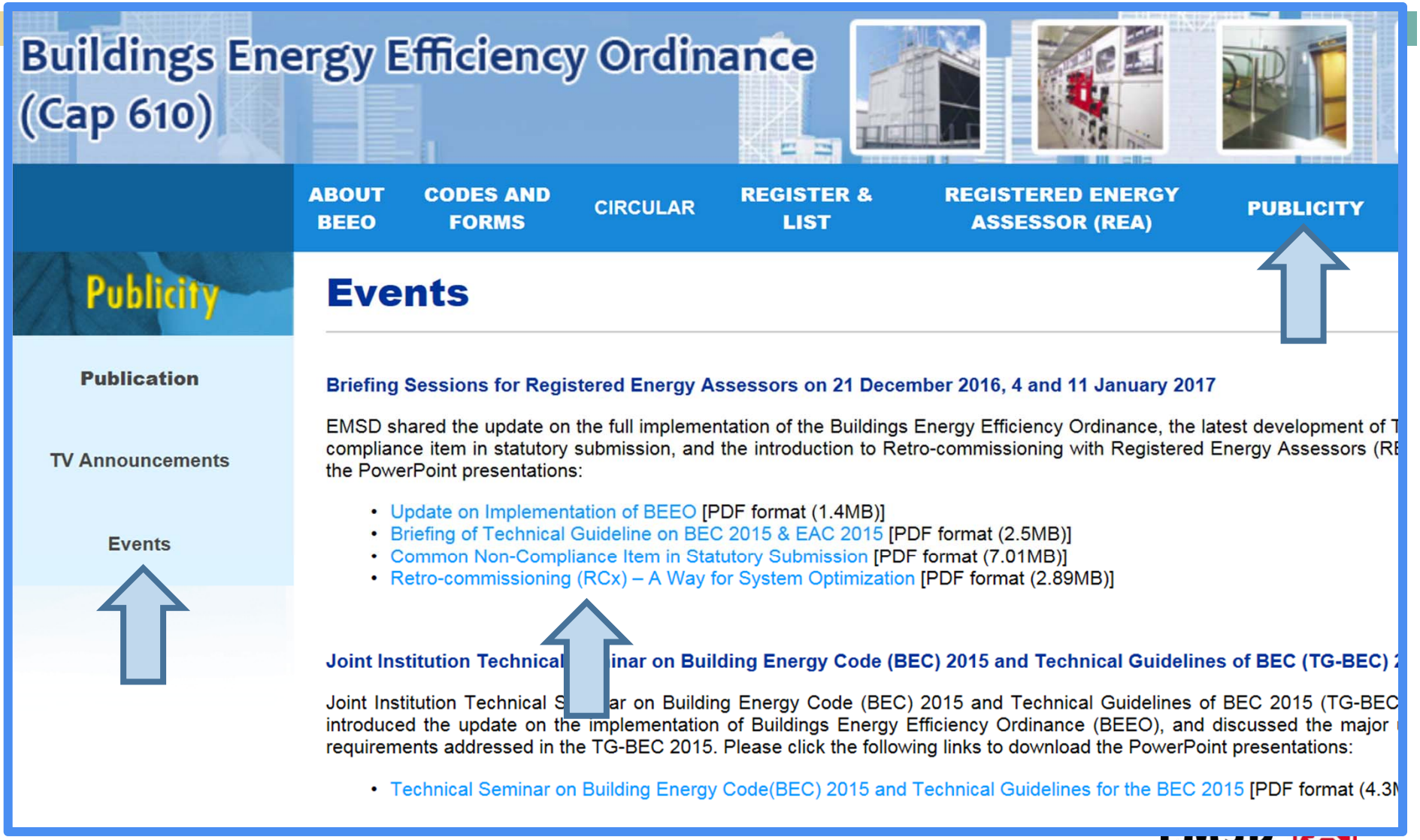
EMSD

Information Source

http://www.beeo.emsd.gov.hk/

EMSD

Information Source



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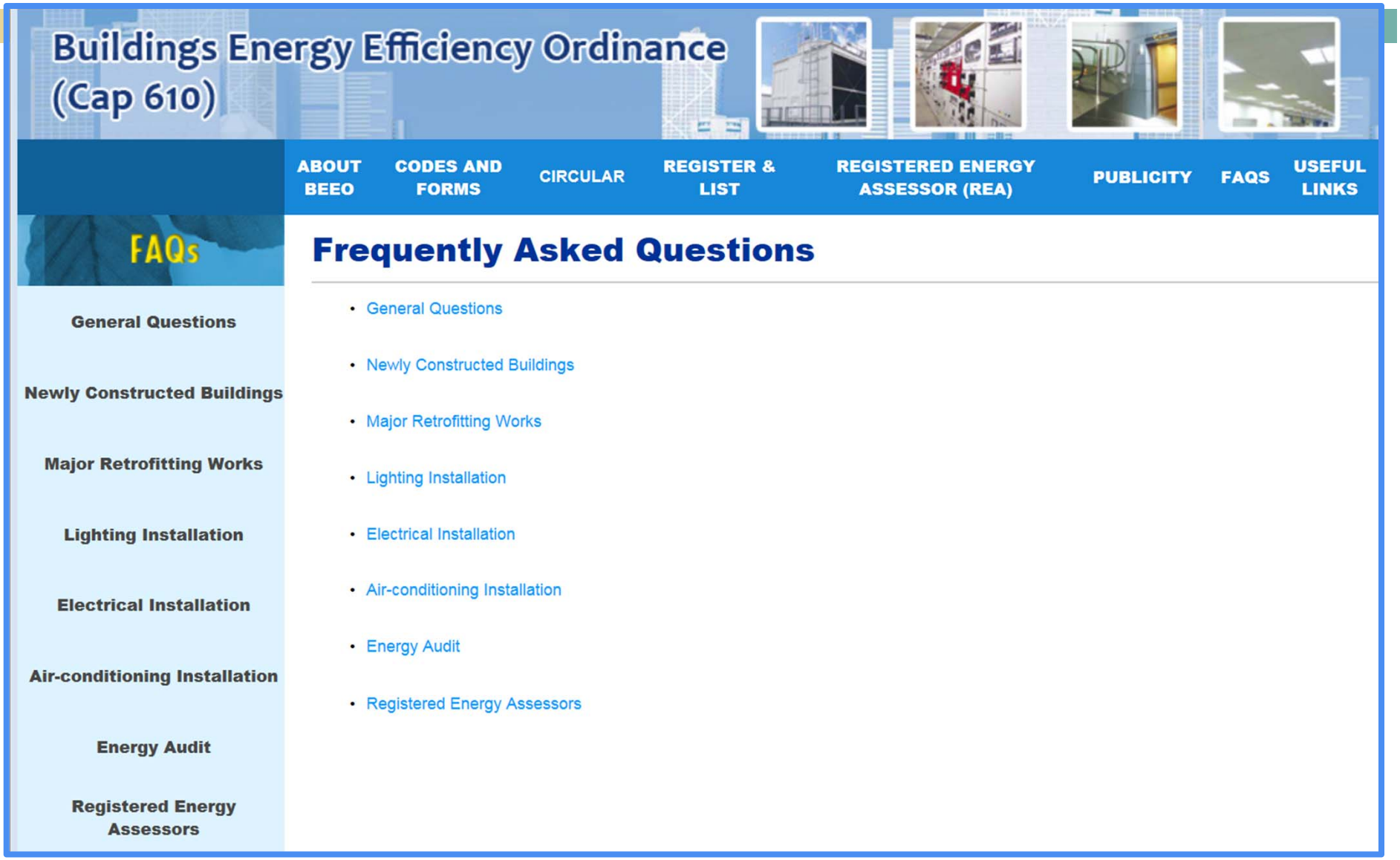

Summary

- Advise/train your own frontline/junior staff to make proper enquiry
- An REA – Professional under the BEEO
- Submission quality
- View the drawing/information if readable, check for integrity & accuracy before making the submission
- Properly derive the compliance data
- DO NOT create your own EE standard/definition
- Refer TG-BEC
- Refer BEEO's website for more information

機電工程署 EMSD