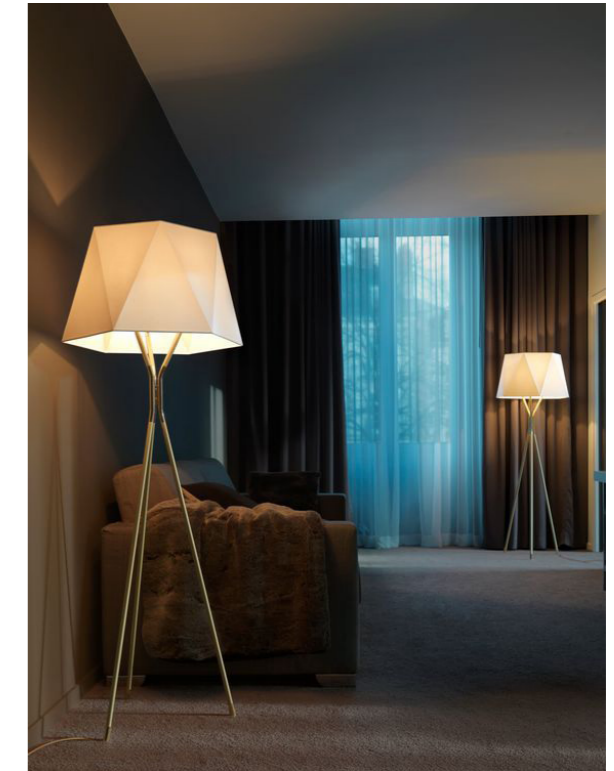




LIGHTING DOCUMENTS

TYPE EXAMPLES

FEBRUARY 2024

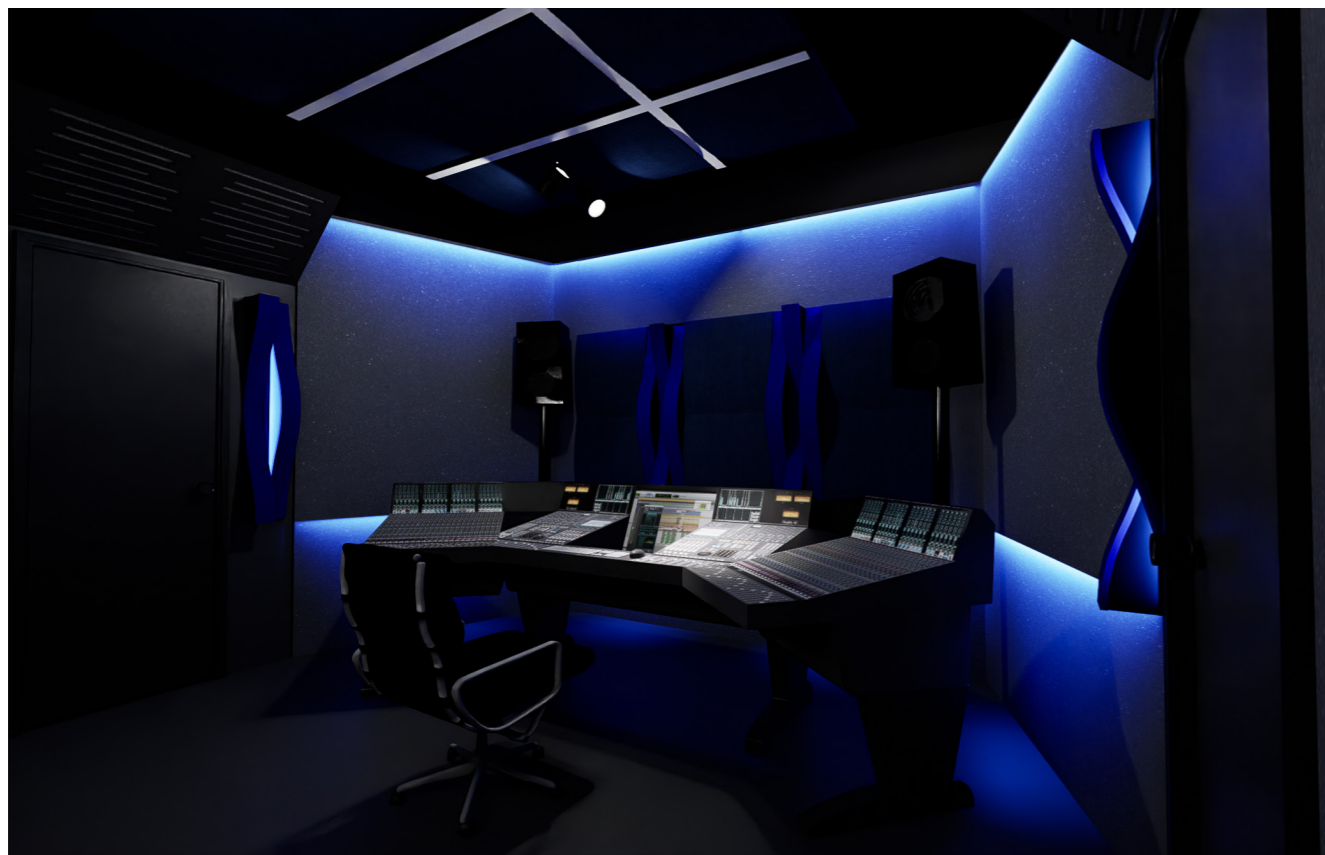


SNUG

- ◆ A selection of wall lights, table lamps and floor lights.
- ◆ Floor lamps can have different lighting styles, from traditional to modern.

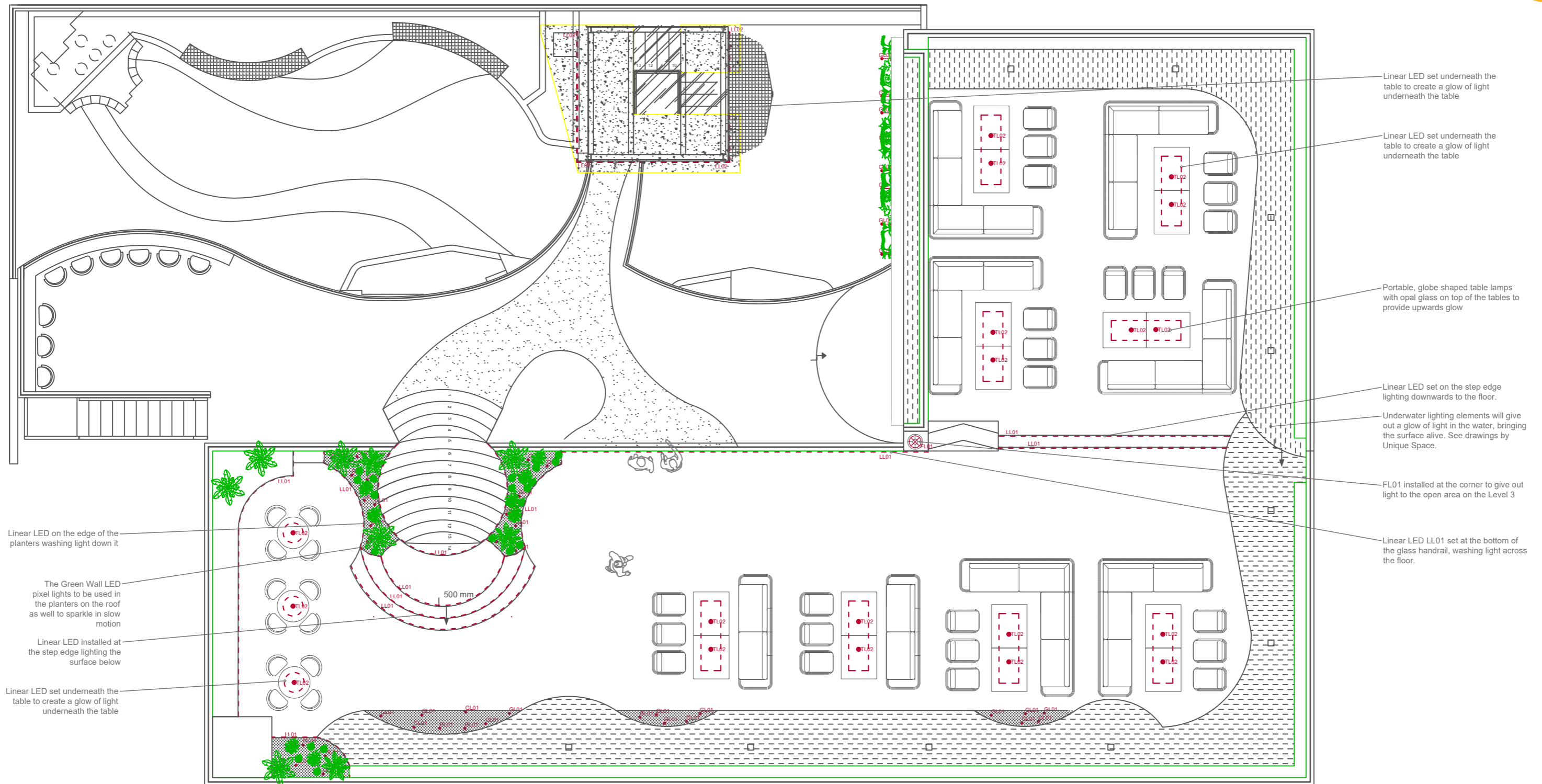
LIGHTING CONCEPT - BY REFERENCE IMAGES

The concept document is the first document which shows the intention behind the design, the final result the design is trying to achieve and what type of fittings would be used. The concept can be made from a collection of reference images using several different image platforms (e.g. Pinterest, Google, AI image services). The other option is to build a 3D model of the building and use rendering softwares to create unique views of the space.



LIGHTING CONCEPT - BY 3D RENDERING

The concept type is chosen based on the project size, type, schedule and budget. Making a detailed 3D model just for the lighting design renders won't always be time or budget efficient way of showing the intention of the design. If there already is a 3D model created for the project (e.g. by the architect in Revit, ArchiCAD or SketchUp), the lighting designer can use that without time-consuming alterations. In some projects the lighting calculation model in Dialux Evo is built to be more detailed than normal, which is then used as an additional tool with the reference images to convey the design.



LIGHTING LAYOUTS

Lighting symbol key

WL02 - Wall light, uplighting	LL01 - Linear LED, low light output	SU01 - Suspended light
WL03 - Wall light, 180° emission	LL02 - Linear LED, medium output	FL01 - Free-standing light
WL04 - Wall light, side emission	LL03 - Linear LED, high output	
SL01 - Stage light	LL04 - Linear LED, inground	
SL02 - Spike light	TL01 - Table lamp, portable	
GL01 - Light fitting in greenery	TL02 - Table lamp, portable	

Once the concept has been agreed, will a set of lighting plans be produced, including ceiling plans, floor plans and any necessary elevations. The plans will disclose the location of each fitting, its type and how the light fittings are wired in circuits as well as the location of the light switch. These are the plans the electrician will use on site to install the lighting and include any notes the designer has thought necessary to be noted for the lighting installation. The fittings mentioned in the plans reference back to the light fitting specification schedule.

Image	Ref.	Fitting type	Manufacturer	Model name	Fitting code	Light output (lm)	Wattage (w)	Efficacy (lm/w)	Colour temperature	Optic °	Colour Rendering	IP	Control	Size	Finish	Accessories	Notes
	1M60	Recessed downlight	ETC	Pro-One-Cell Micro	ARCP1M 3 60 W A	601	9.7	71.3	3000K	60°	90	IP20	DMX-512	Ø: 90mm H: 83mm	White	D2 driver	n/a
	1M60/EM	Recessed downlight with Emergency	ETC	Pro One-Cell Micro Emergency	ARCP1M 3 60 W A with EM	601	9.7	71.3	3000K	60°	90	IP20	DMX-512	Ø: 90mm H: 83mm	White	D2 emergency driver	Calculated at 50% output for emergency use
	1S24	Recessed downlight	ETC	Pro One-Cell Small	ARCP1S 3 24 W A	1763	19.9	88.4	3000K	24°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 driver	n/a
	1S24/EM	Recessed downlight with Emergency	ETC	Pro One-Cell Small Emergency	ARCP1S 3 24 W A with EM	1763	19.9	88.4	3000K	24°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 emergency driver	Calculated at 50% output for emergency use
	1S37	Recessed downlight	ETC	Pro One-Cell Small	ARCP1S 3 37 W A	1840	19.9	80.9	3000K	37°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 driver	n/a
	1S37/EM	Recessed downlight with Emergency	ETC	Pro One-Cell Small Emergency	ARCP1S 3 37 W A with EM	1841	19.9	80.9	3000K	37°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 emergency driver	Calculated at 50% output for emergency use
	1S60	Recessed downlight	ETC	Pro One-Cell Small	ARCP1S 3 60 W A	1835	19.9	92	3000K	60°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 driver	n/a
	1S60/EM	Recessed downlight with Emergency	ETC	Pro One-Cell Small Emergency	ARCP1S 3 60 W A with EM	1835	19.9	92	3000K	60°	90	IP20	DMX-512	Ø: 110mm H: 128mm	White	D1 emergency driver	Calculated at 50% output for emergency use
	1C50	Recessed downlight	ETC	Pro One-Cell	ARCP1 3 50 W F	2021	25	80.9	3000K	50°	90	IP20	DMX-512	Ø: 197mm H: 156mm	White	D4 driver	n/a
	1C50/EM	Recessed downlight with Emergency	ETC	Pro One-Cell Emergency	ARCP1 3 50 W F with EM	2021	25	80.9	3000K	50°	90	IP20	DMX-512	Ø: 197mm H: 156mm	White	D4 emergency driver	Calculated at 50% output for emergency use

LIGHT FITTING SPECIFICATION

A light fitting specification list is a spreadsheet of each fitting specified in the lighting plans. The schedule includes an image of the fitting and all of the technical information of it that is needed to understand the build and quality of the fitting. As an appendix to the fitting list will be the specification sheet of the manufacturer for each fitting, so that the contractor has all the available information on hand. In larger projects, the light fitting specification schedule is often divided into interior and exterior, or by building section.

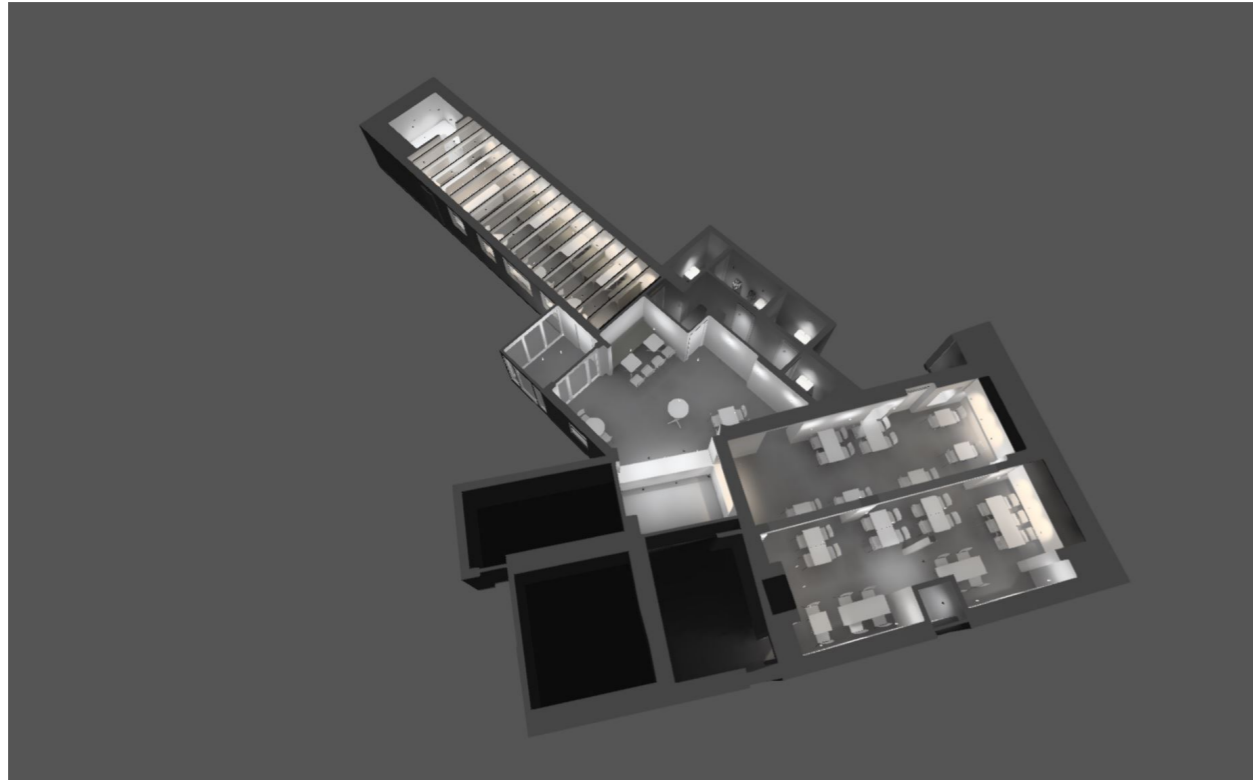
TOTAL QUANTITIES, ALL LEVELS									
Ref.	Fitting type	Wattage (w)	Colour temp	Control	Qty	Light output (lm)	Notes		
1M60	Pro-One-Cell Micro	9.7	3000K	DMX	229	601			
1M60/EM	Pro One-Cell Micro Emergency	9.7	3000K	DMX	32	601			
1S24	Pro One-Cell Small	19.9	3000K	DMX	24	1763			
1S24/EM	Pro One-Cell Small Emergency	19.9	3000K	DMX	0	1763			
1S37	Pro One-Cell Small	19.9	3000K	DMX	191	1840			
1S37/EM	Pro One-Cell Small Emergency	19.9	3000K	DMX	18	1841			
1S60	Pro One-Cell Small	19.9	3000K	DMX	84	1835			
1S60/EM	Pro One-Cell Small Emergency	19.9	3000K	DMX	17	1835			
1C50	Pro One-Cell	25	3000K	DMX	13	2021			
1C50/EM	Pro One-Cell Emergency	25	3000K	DMX	2	2021			
1H24	One-Cell High Output	118.9	3000K	DMX	6	8781			
LL01	Linear LED	9.6	3000K	DMX	176	678	Partially decorative		
LL02	Linear LED	19.2	3000K	DMX	402	1314	Partially decorative		
LL03	Wall wash	12.5	3000K	DMX	83.6	828			
PER LEVEL									
Level 3									
Circuit	Ref.	Fitting type	Wattage (w)	Qty	Control	Loading total	Light output total	Notes	
HL68A	1M60	Pro-One-Cell Micro	9.7	9	DMX	87.3	5409	House Right lobby	
	1M60/EM	Pro One-Cell Micro Emergency	9.7	3	DMX	29.1	1803	House Right lobby	
HL68B	1M60	Pro-One-Cell Micro	9.7	9	DMX	87.3	5409	House Left lobby	
	1M60/EM	Pro One-Cell Micro Emergency	9.7	3	DMX	29.1	1803		
Total electrical loading of lighting in the area						232.8			
Level 4									
Circuit	Ref.	Fitting type	Wattage (w)	Qty	Control	Loading total	Light output total	Notes	
HL05A	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL05B	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL05C	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL70C	1M60	Pro-One-Cell Micro	9.7	9	DMX	87.3	5409		
	1M60/EM	Pro One-Cell Micro Emergency	9.7	4	DMX	38.8	2404		
HL01A	1S60	Pro One-Cell Small	19.9	12	DMX	238.8	22020		
HL02A	LL01	Linear LED	9.6	13.8	DMX	132.48	9356.4	Decorative, at the box fronts, 6x2.3m	
HL02B	LL01	Linear LED	9.6	20.7	DMX	198.72	14034.6	Decorative, at the box fronts, 9x2.3m	
HL02B	1S60	Pro One-Cell Small	19.9	18	DMX	358.2	33030		
HL05D	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL05E	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL05F	1M60	Pro-One-Cell Micro	9.7	10	DMX	97	6010		
HL70B	1M60	Pro-One-Cell Micro	9.7	9	DMX	87.3	5409		
	1M60/EM	Pro One-Cell Micro Emergency	9.7	4	DMX	38.8	2404		
HL79	LL01	Linear LED	9.6	3.8	DMX	75.62	6973	Wall wash behind choir, with EM battery pack as previous. No organ chamber linear LED considered.	
	LL01	Linear LED	9.6	0.9	DMX	8.64	610.2		
HL78A	LL01	Linear LED	9.6	10.5	DMX	100.8	7119		
	LL01	Linear LED	9.6	7.1	DMX	68.16	4813.8		
HL78B	LL01	Linear LED	9.6	10.9	DMX	104.64	7390.2		
	LL01	Linear LED	9.6	7.1	DMX	68.16	4813.8		
HL79	LL01	Linear LED	9.6	10.1	DMX	96.96	6847.8		
	LL01	Linear LED	9.6	3.8	DMX	36.48	2576.4		
Total electrical loading of lighting in the area						2321.86			

ROOM SCHEDULES

For each room there is a room schedule listing out all of the light fittings that will be in said room. These will be organised by lighting circuits, giving the electrician an idea of the power needed in each room and the number of circuits required. Any notes on the installation will also be mentioned here.

In projects where the lighting control is not based on physical circuits, the room schedule will be organised by fitting types and locations. The room schedule can work as a base point for control design in projects where e.g. DALI or Casambi is used as a lighting control method. All of the fittings can be given a unique reference code at this point.

A total quantity of each fitting type used will be produced from this schedule as a by-product and it can also be used for energy efficiency analysis by including a lumens/watt/sqm calculator.



NAME OF THE PROJECT

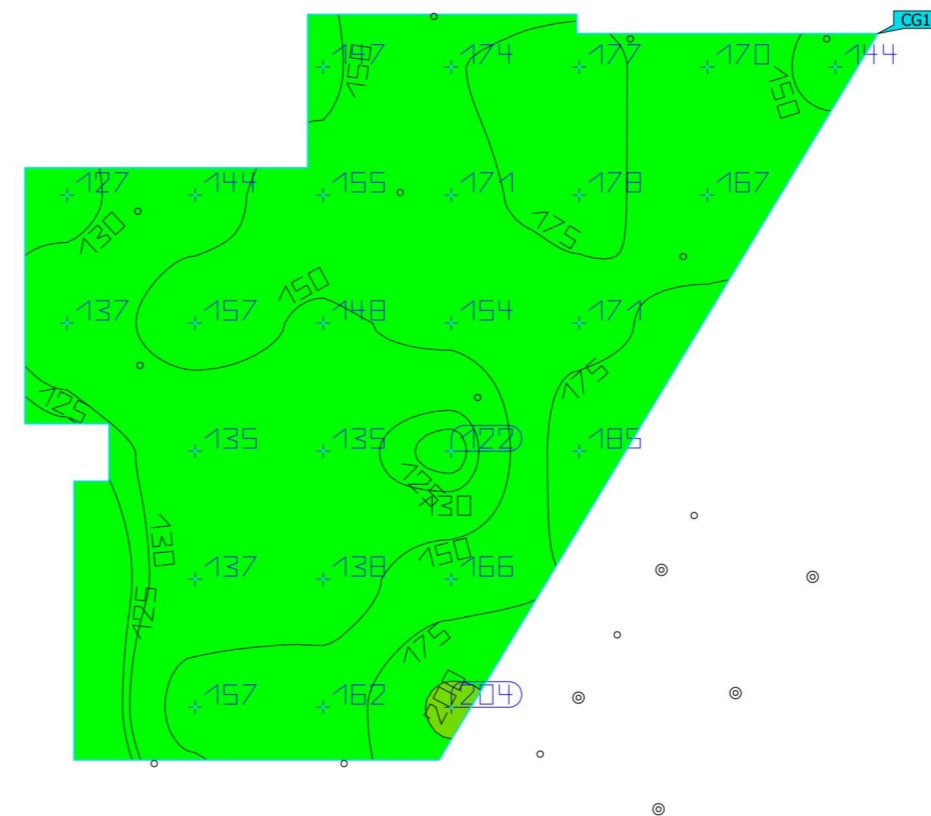
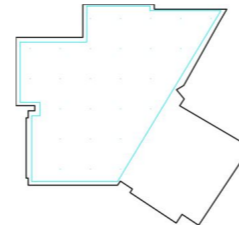
Short description of the project and its target.

LIGHTING CALCULATIONS

Light level calculations are made to ensure that there is enough light where it is needed. A set of guidance lux levels is widely used for different spaces and user cases, which are then set as targets in the calculations. The calculations are done with Dialux Evo software, where a 3D model of the building will be constructed and light files installed for the calculation purposes. A report will be produced to prove the design works, and in many projects such a report is a requirement to the sign off for the design. The complexity of the calculation modelling and the report depends on the project type. One of the main user cases of the calculation is to design emergency lighting to public spaces to ensure that the building can be evacuated in a calm manner.

Building 1 · Storey 1 · Lobby / Bar (Light scene 1)

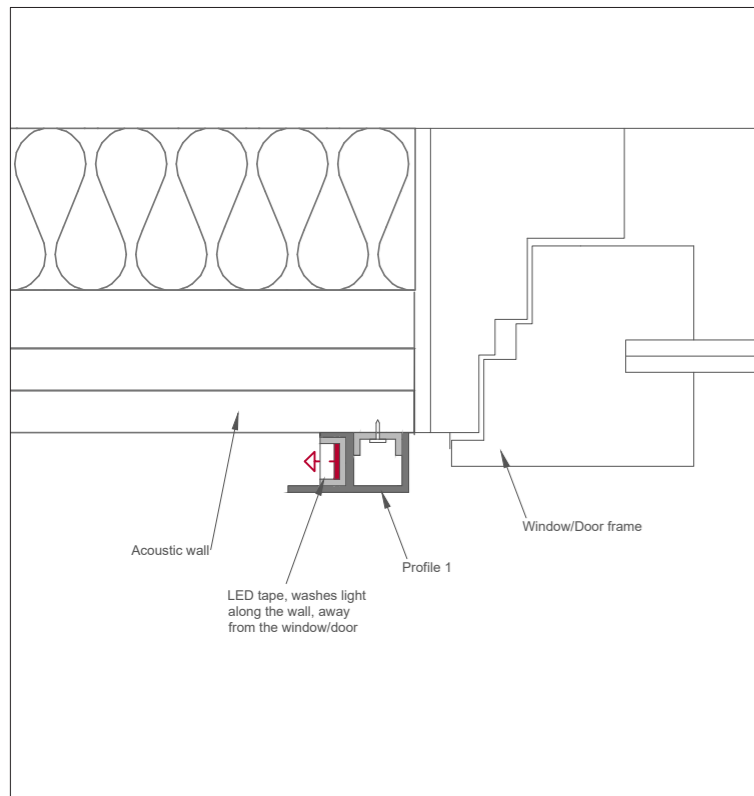
Lobby / Bar - Table height



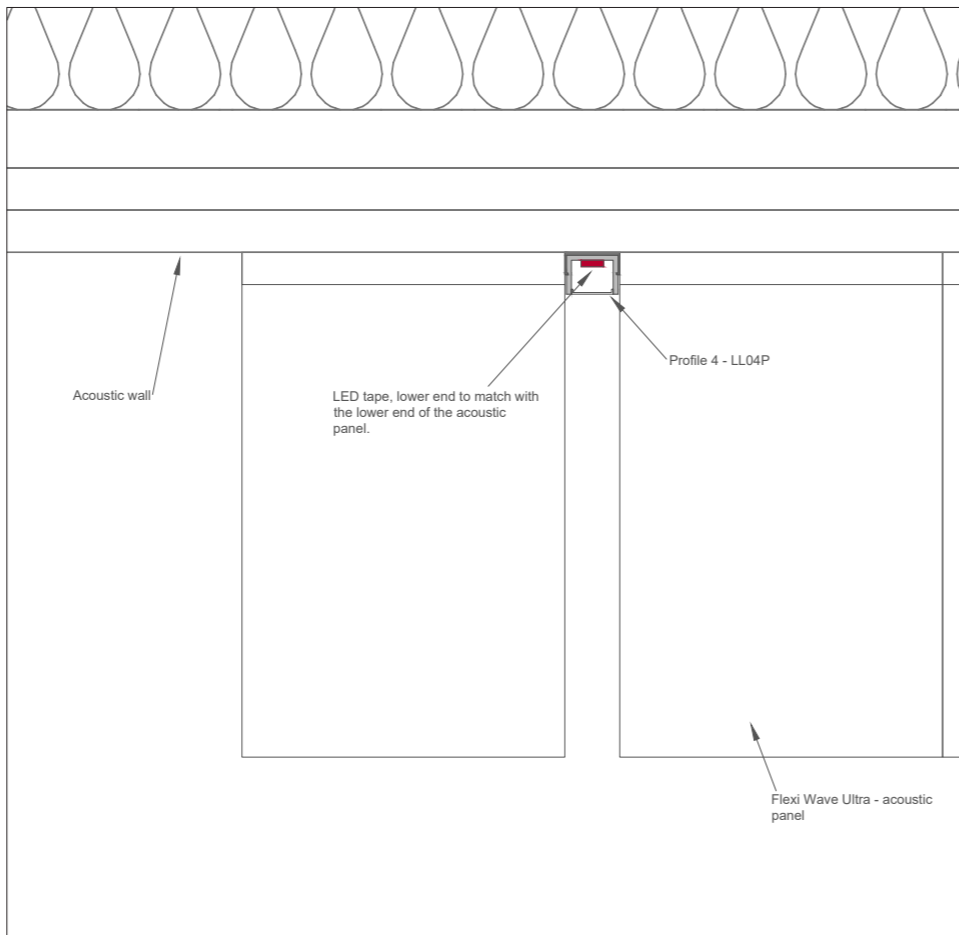
Properties	\bar{E}	E_{min}	E_{max}	$U_0 (g_1)$	g_2	Index
Lobby / Bar - Table height Perpendicular illuminance Height: 0.800 m	156 lx	122 lx	204 lx	0.78	0.60	CG17

Utilisation profile: DIALux presetting (5.26.2 Standard (office))

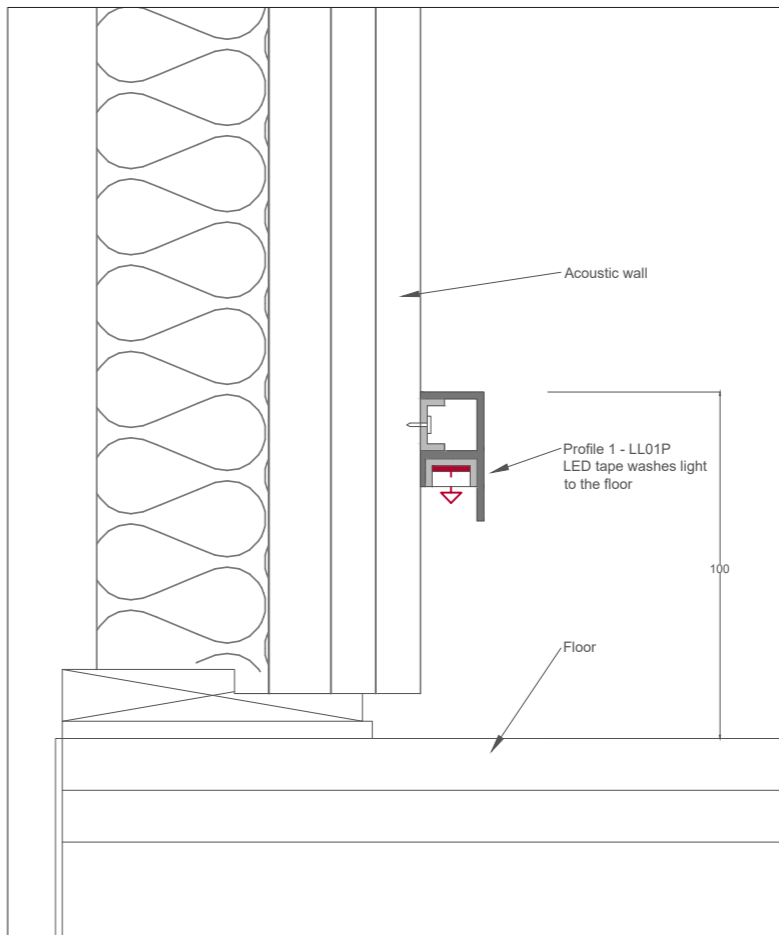
DET-001: Plan view



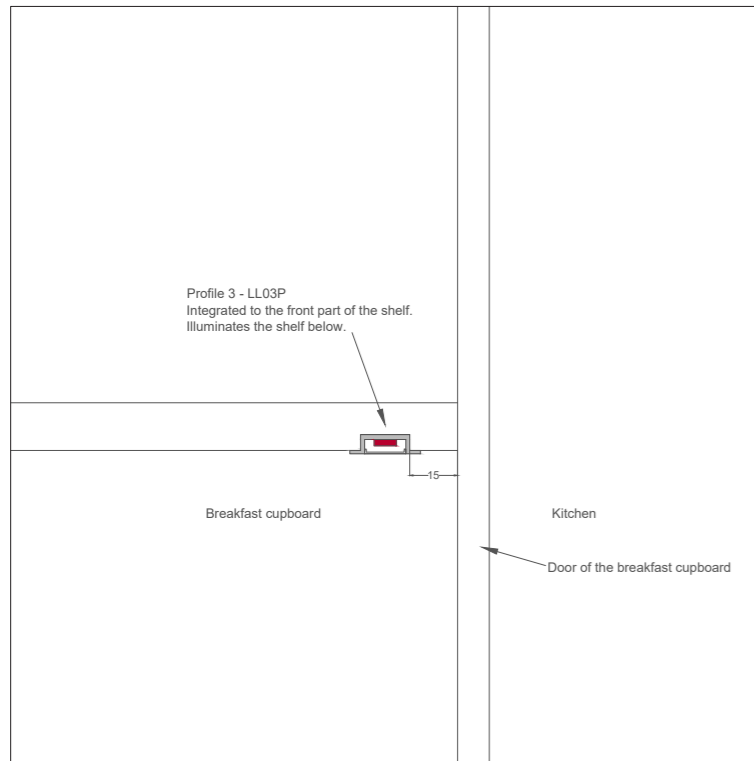
DET-002: Plan view



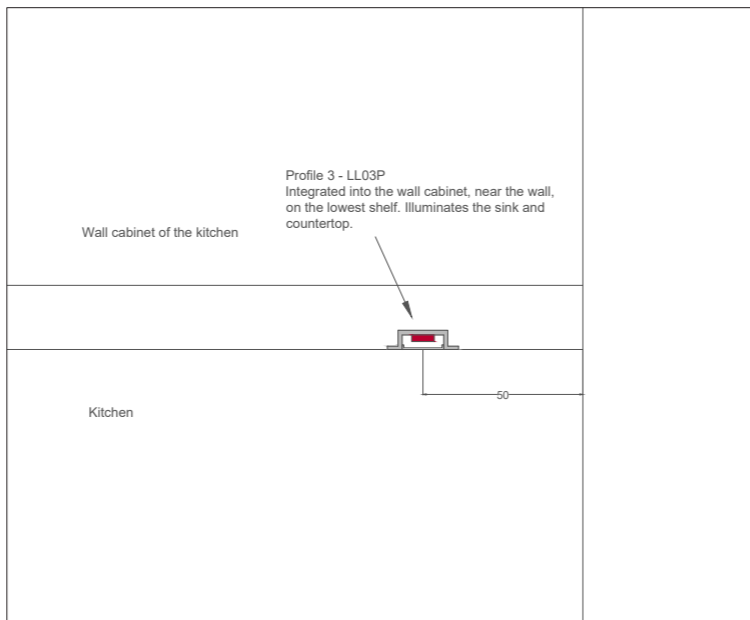
DET-003: Section view



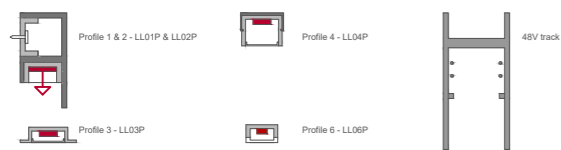
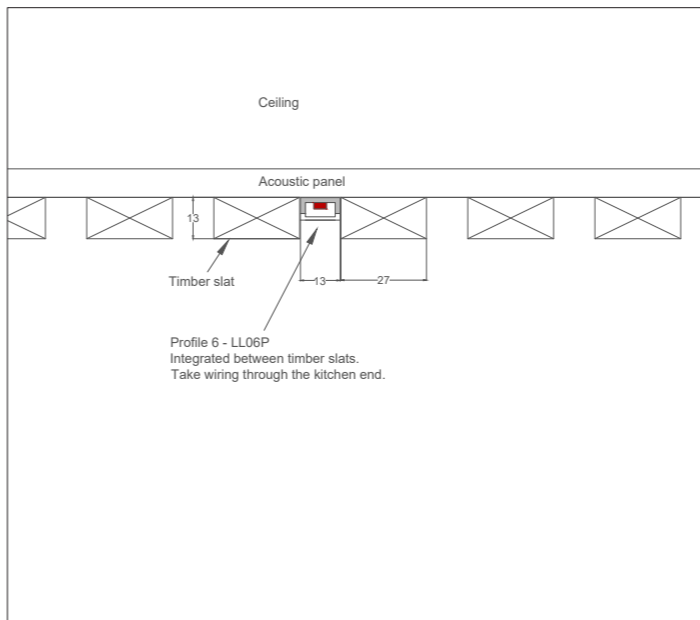
DET-004: Section view



DET-005: Section view



DET-006: Section view



PROJECT		P.NO.		Hehkuva Design Lighting design hello@hehkuvadesign.com 044 2397 537 www.hehkuvadesign.com <small>Note! All dimensions must be checked on site, do not scale from this drawing. If in doubt, ask. Please tell us if there is a mistake in the drawing. Do not copy.</small>
DRAWING	LED tape installation details 1/3	NUMBER		
LOCATION		REV	0	
DATE		SCALE	1:2 @ A3	

INSTALLATION DETAIL DRAWINGS

For any light fitting that requires further notes in its installation, a set of detail drawings will be produced to aid the contractor and the electrician on site. Normal downlights rarely need further drawings, but when there are LED tapes used for indirect lighting, or the surface materials require more intricate fixing methods, are detail drawings used as a guide on site. In lighting plans linear LED is usually shown only as a line to indicate the location of the LED tape, but the detail drawings will outline the further details needed to create the designed outcome. This helps the contractor to understand the design intent early on, in case the placement of the light source impacts the way e.g. a wall/ceiling junction is constructed.

Ref.	Type	Model name	Fitting code	Light output (lm)	Wattage (w)	Efficiency (lm/w)	CCT	Optic °	CRI	IP	Control	Finish	Accessories	Notes	
LL01	LED tape RGBW	BILTON RGBW 3000K	BLCOL0700024DC07920RGB830C05	700lm/m (3000K)	7.9w/m	89lm/w	RGB+W	120°	90	IP20	DALI	/		In aluminium profile, see LL01P	
LL01P - profile	Profile and opal cover	BARdolino Muro Aluminium-Profile	62399531 (1m)	/	/	/	/	/	/	IP20	/	Black	End caps and fixing clips		
LL02	LED tape, Tunable white	BLTWS 2000 >90	BLTWS2000024DC18520927965W05	2000lm/m	18.5w/m	108lm/w	2700K-6500K	120°	90	IP20	DALI	/		In aluminium profile, see LL02P	
LL02P - profile	Profile and opal cover	BARdolino Muro Aluminium-Profile	62399531 (1m)	/	/	/	/	/	/	IP20	/	Black	End caps and fixing clips		
LL03	LED tape 3000K	K-CR-1220-24V	K-CR-30-1220-24V	704lm/w	9.6w/m	73lm/w	3000K	120°	95	IP20	DALI	/		In aluminium profile, see LL03P	
LL03P - profile	Profile and opal cover	Profile MICRO-NK	C1587	/	/	/	/	/	/	IP20	/	Black	End caps and fixing clips	Integrated into the kitchen cabinetry	
LL04	LED tape IP65	WP-K-CR-1220-24V	WP-K-CR-30-1220-24V	704lm/w	9.6w/m	73lm/w	3000K	120°	95	IP65	DALI	/		In aluminium profile, see LL04P	
LL04P - profile	Profile and opal cover	Profile PDS-4-PLUS	C1263	/	/	/	/	/	/	IP65	/	White	End caps and fixing clips		
LL06	LED tape in profile	LED strip K-1440-24V	K-1440-24V	1663lm/m	14.4w/m	115lm/w	3000K	120°	90	IP20	DALI	/		In aluminium profile, see LL06P	
LL06P - profile	Profile and opal cover	BARdolino mini	62399242	/	/	/	/	/	/	IP20	/	Black	End caps and fixing clips		
Room Cinema															
Ref.	Sub ref.	Detail ref.	Lengths	Length total	Round up/down	Notes									
LL01	A	DET-001	1 x 745 2 x 2100	4.95	Down	Around doorway				Group 1					
LL01	B	DET-003	1 x 2900 1 x 250	3.15	Down Up	On the hallway side				Group 2					
LL01	C	DET-002	2 x 1200	2.4	Down	Between acoustic panels				Group 3					
LL01	D	DET-003	1 x 2000 1 x 1490	3.49	Down	Underneath the screen Can be divided into two if needed				Group 4					
LL01	E	DET-003	1 x 385 1 x 1200 1 x 840	2.41	Down Up Down	At the bottom part of the wall									
LL01	F	DET-001	1 x 745 2 x 2100	4.95	Down	Around doorway					Group 5				
LL01	G	DET-001	1 x 745 2 x 2100	4.95	Down	Around doorway									
Room Hallway															
Ref.	Sub ref.	Detail ref.	Lengths	Length total	Round up/down	Notes									
LL06	A	DET-006	1 x 1860	1.86	Up	Integrated between the ceiling timber slats				All in same group					
LL06	B	DET-006	2 x 2000	4	Up	Integrated between the ceiling timber slats									
LL06	C	DET-006	1 x 1550	1.55	Up	Integrated between the ceiling timber slats									
LL06	D	DET-006	1 x 1550	1.55	Up	Integrated between the ceiling timber slats									
LL06	E	DET-006	1 x 1000 1 x 1170	2.17	Up	Integrated between the ceiling timber slats									
LL06	F	DET-006	1 x 1860	1.86	Up	Integrated between the ceiling timber slats									

LED-TAPE SCHEDULE

In a project where there are several sets of linear LEDs in an aluminium profile, a comprehensive schedule of their details will be produced. The schedules state an individual reference to each length, referenced back to the plans and the room schedule. It will also state how many drivers are needed, how many lengths will be installed to each driver and the maximum distances of each part.

Many times there are a lot of different LED tapes in a variety of different profiles with different diffusers, all of which are outlined in the LED tape schedule as an individual item. In more complex sets, a diagram will be part of the schedule to show the intended installation order of the lengths.

The LED tape schedule exists to make the electricians and the manufacturers' lives easier. With a plan and a referencing schedule are completed, is the driver calculation, quoting process, ordering and installation on site quicker and more efficient, when the products are named with their unique reference codes throughout the process, from the plans to the actual fitting arriving on site.

Light fitting budget

Ref.	Fitting type	Manufacturer	Model name	Fitting code	Item price (VAT 0%)	Qty	Total	Quote ref.	Contact details
LL01	LED tape RGBW	Linear LED maker	BILTON RGBW 3000K	BLCOL0700024DC07920RGB830C05	4 050.00 €	1	4 050.00 €	40644	Manufacturer Sales rep Phone Email Website
LL01P - profile	Profile and opal cover	Linear LED maker	BARdolino Muro Aluminium-Profile	62399531 (1m)					
LL02	LED tape, Tunable white	Linear LED maker	BLTWS 2000 >90	BLTWS2000024DC18520927965W05	3 820.00 €	1	3 820.00 €		
LL02P - profile	Profile and opal cover	Linear LED maker	BARdolino Muro Aluminium-Profile	62399531 (1m)					
LL03	LED tape 3000K	Linear LED maker	K-CR-1220-24V	K-CR-30-1220-24V	279.00 €	1	279.00 €		
LL03P - profile	Profile and opal cover	Linear LED maker	Profile MICRO-NK	C1587					
LL04	LED tape IP65	Linear LED maker	WP-K-CR-1220-24V	WP-K-CR-30-1220-24V	149.00 €	1	149.00 €	40644	TBC
LL04P - profile	Profile and opal cover	Linear LED maker	Profile PDS-4-PLUS	C1263					
LL06	LED tape in profile	Linear LED maker	K-CR-1820-HD-24V	K-CR-30-1820-HD-24V	1 220.00 €	1	1 220.00 €		
LL06P - profile	Profile and opal cover	Linear LED maker	Support Profile CT02	BLPCT02010200001250050					
SE01	Wall light	Fixtures Ltd.	Glasgow - wall light	4289-05	85.12 €	2	170.24 €	Order by email	TBC
SE02	Wall light	Fittings Ltd	Glint	268	326.80 €	1	326.80 €	Online purchase	Website link
AL01	Downlight	Lighting shop	SWAP IP65 L SUPERCRI 7W DIM DALI/PUSH 3000K	A3123231W65	120.00 €	4	480.00 €	Quote 20105009	Manufacturer Sales rep Phone Email Website
AL02	Downlight, narrow beam	Lighting shop	SWAP S SUPERCRI 7W DIM DALI/PUSH 3000K W	A3121231W	105.00 €	1	105.00 €	Quote 20105009	
AL03	Track spotlight	Lighting shop	Zero 66 - Low voltage	9615IU21-90TW48DA10	369.00 €	12	4 428.00 €	Quote 20105009	
AL04	Track spotlight	Lighting shop	FIT 65 DIM DALI 36° 3000K WT	A3560231WT	300.00 €	6	1 800.00 €	Quote 20105009	
RV01	Pendant light	Light fitting shop	Ronde 20cm, black	/	265.24 €	2	530.48 €	Online purchase	Website link
RV02	Pendant light	Light fitting shop	Blossi 1	02310121	449.92 €	3	1 349.76 €	Online purchase	Website link
RV03	Opal pendant light	Light fitting shop	Miira 1 Opal	03310224	288.04 €	2	576.08 €	Online purchase	Website link
E27	E27 lamp	Light fitting shop	10W E27 LED 3000K 800lm	44764	3.73 €	2	7.46 €	Online purchase	Website link
G9	G9 lamp	Light fitting shop	G9 LED 3000K 5W 450lm	27898	6.00 €	5	30.00 €	Online purchase	Website link
48V track	Surface mounted 48V track	Lighting shop	Surface pendant Track	807221015	2 000.00 €	2	4 000.00 €	Quote 20105009	Manufacturer Sales rep
230V DALI track, 2m	DALI-track, 2m	Lighting shop	White DALI track, 2m	A219-21-02-B	135.00 €	1	135.00 €	Quote 20105009	Phone Email
230V DALI track, 1m	DALI-track, 1m	Lighting shop	White DALI track, 1m	A219-21-01-B	71.00 €	1	71.00 €	Quote 20105009	Website
					Light fitting costs (VAT 0%)		23 527.82 €		
					VAT 24%		5 646.68 €		
					Total including VAT 24%		28 233.38 €		
NOTE! THIS IS IMAGINARY BUDGET									

LIGHT FITTING BUDGET & PRICE QUOTES

From the room schedule totals and the LED tape schedule a comprehensive list of lighting equipment is gathered into a light fitting budget, which then can be distributed to the wholesalers and/or light fitting manufacturers to quote from. The quotes received will be summed back into the budget to get the final cost of the lighting equipment. The ordering process of the fittings will be streamlined as the lighting documentation provides all of the information needed for quoting the fittings, which makes tendering the project quicker. The purchaser can then place the fitting orders based on the already existing quotes, which have been double checked by the designer to include all the fittings and accessories as designed. Lighting designer will not order any fittings.