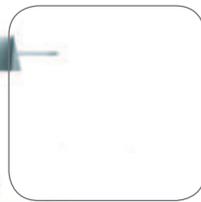
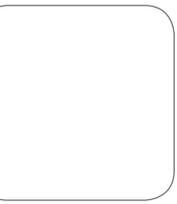


# klik.system project

## Secure connection system

klik.system project has been developed to offer you a complete package for lighting distribution and control. We understand that our customers need to be able to trust that the proposed designs comply to all relevant British Standards and be confident in the support offered by their manufacturing partners.



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# klik.system project

## Reducing capital cost

### Faster to install

Because klik.system can be totally pluggable from the distribution board to the final connection point, it is remarkably quick to install. Time on-site and therefore cost is dramatically reduced.

### Semi-skilled installation

The unique design of klik.system prevents unsafe connection, with fully labelled parts which correspond to construction drawings and instructions. Therefore klik.system can be quickly and easily installed with a combination of semi-skilled and skilled labour.



# Carbon Footprint

Whether it be a new build or renovation of an existing building, it is important to achieve a minimal carbon footprint. This may simply be:

1

## Social

A social responsibility to make the environment cleaner, by reducing CO<sub>2</sub> emissions

2

## Regulations

To comply with the Building Regulations

3

## Cost Savings

Because electricity is expensive. Saving energy will lower costs to a business making it more competitive

## Plug and Play

klik.system provides the ultimate in plug and play technology. The whole electrical distribution system can be designed to be fully pluggable from the distribution board to the final point of distribution e.g. a luminaire.

The fully pluggable klik.system allows the installation to be designed using a combination of standard and bespoke lengths of pre-wired plugs & sockets, all corresponding to construction information, for a quick and simple installation.

klik.system caters for the requirements of both distribution of mains electricity, and also for control data for lighting installations. This is provided for with a choice of 3, 4, 5, 6, or even 7 core pre-wired leads.

Leads are available in a variety of lengths and cross sectional areas to suit project requirements. klik.system offers a choice of distribution methods.

## Operating costs

Installing newer, more efficient systems with good controls will reduce lighting costs. klik.system can save energy and the cost of lighting in buildings by:

- Automatically turning off lighting when it is not required or when areas of the building are not occupied.
- Taking advantage of dimming technology in luminaires to regulate light output and supplement the available natural daylight to achieve required lux level.
- Giving flexibility to building design and the environment of its occupants. Ensuring that occupants can work in the building comfortably with localised control and reassurance whilst reducing energy consumption.

# Increasing your control

klik.system is designed to give you the control you require for lighting in your building, this ensures that the minimum amount of energy is used, also allowing people to use the building in comfort and safety.

klik.system allows for a variety of control philosophies:

## Basic manual system

For manual switching using pluggable switch drops for fast installation and reconfiguration if required.

## Standard automatic system

This employs state of the art plug-in presence detectors complete with photocell technology. Automatically saving energy when areas are not occupied by switching lighting off, and not switching lighting on when sufficient natural daylight is available. Absence detection enables even more control and therefore energy savings.

## Dimming connection system

This system uses our 5 and 6 core pre-wired plugs & sockets, enabling data from digital dimming detectors to control lighting. Using this system the lighting can be configured to the exact level required by the occupants of an area. The system takes into account the amount of available natural light and uses the minimum amount of power to raise the light level to the required lux.

## Complete building system

Using klik.system alongside our tebis.TX we can implement a whole building system of control and wiring. With the use of KNX, a European building control standard, klik.system and tebis.TX can integrate lighting control with all other building services.

klik.systems' unique plug and play connector allows re-configuration of the building lighting distribution and control as the needs and use of the building change.

Where large offices are required to be sub-divided into smaller offices or vice versa, the klik.system can be simply re-configured with the addition of plug-in sensors, switches or control circuits linked as required.

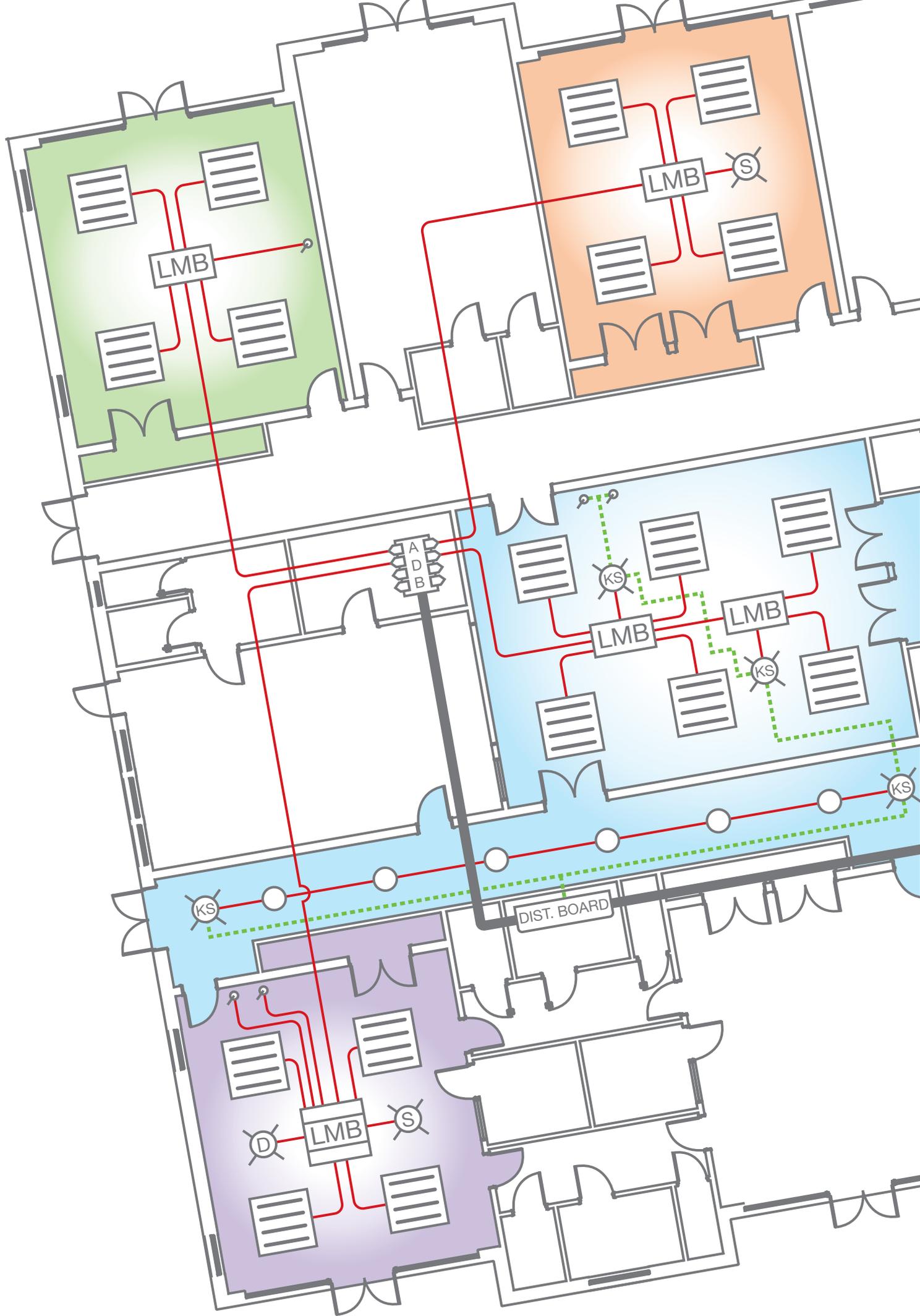
Upgrading of luminaires from on/off HF to Digital can also be catered for by a simple change to the pre-wired lead and sensor without the need to make changes to the Lighting Marshalling Boxes. To reduce disruption during maintenance periods the pre-wired leads can be disconnected on load.

klik.system also allows flexible configuration at commissioning where areas can be linked together. This is important in larger open plan areas where specification requires notional or actual corridors to be lit if any part of the area is occupied.

Building-wide common zones such as lift lobbies, stairways or break out areas can also be controlled so that the lighting is on whenever the building is occupied.

klik.system offers a comprehensive range of energy saving lighting control and distribution products to meet all requirements for a lower cost of ownership through increased energy efficiency and reduced maintenance requirements.

This system encompasses innovative cost-effective solutions, providing a fast payback for every area of the building, from the restrooms to large open plan offices.



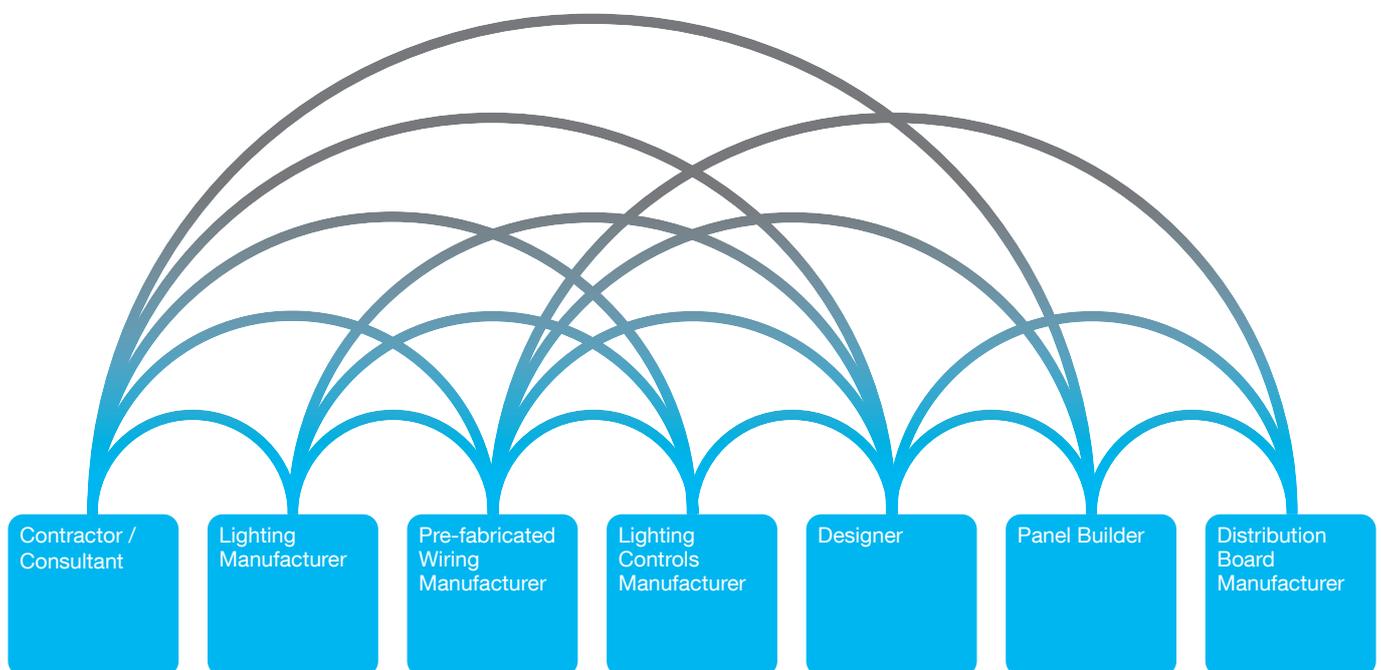
# Communication

Presently when contractors look at installing a pluggable system they are required to liaise with a number of organisations. These may include the manufacturer of the chosen electrical distribution equipment. Once this is established a panel builder may be required to modify the equipment, add socket arrangements and complete any internal wiring.

A wiring system will then be required to distribute the power to all parts of the installation. This will require both specification for the cables and the required connector. The lighting controls manufacturer is required to ensure the desired functionality of the system. They also need to be involved in the choice of connector system to ensure compatibility with the control systems.

These manufacturers will also be required to talk to each other to ensure that the different parts of the system integrate on site to form a robust system.

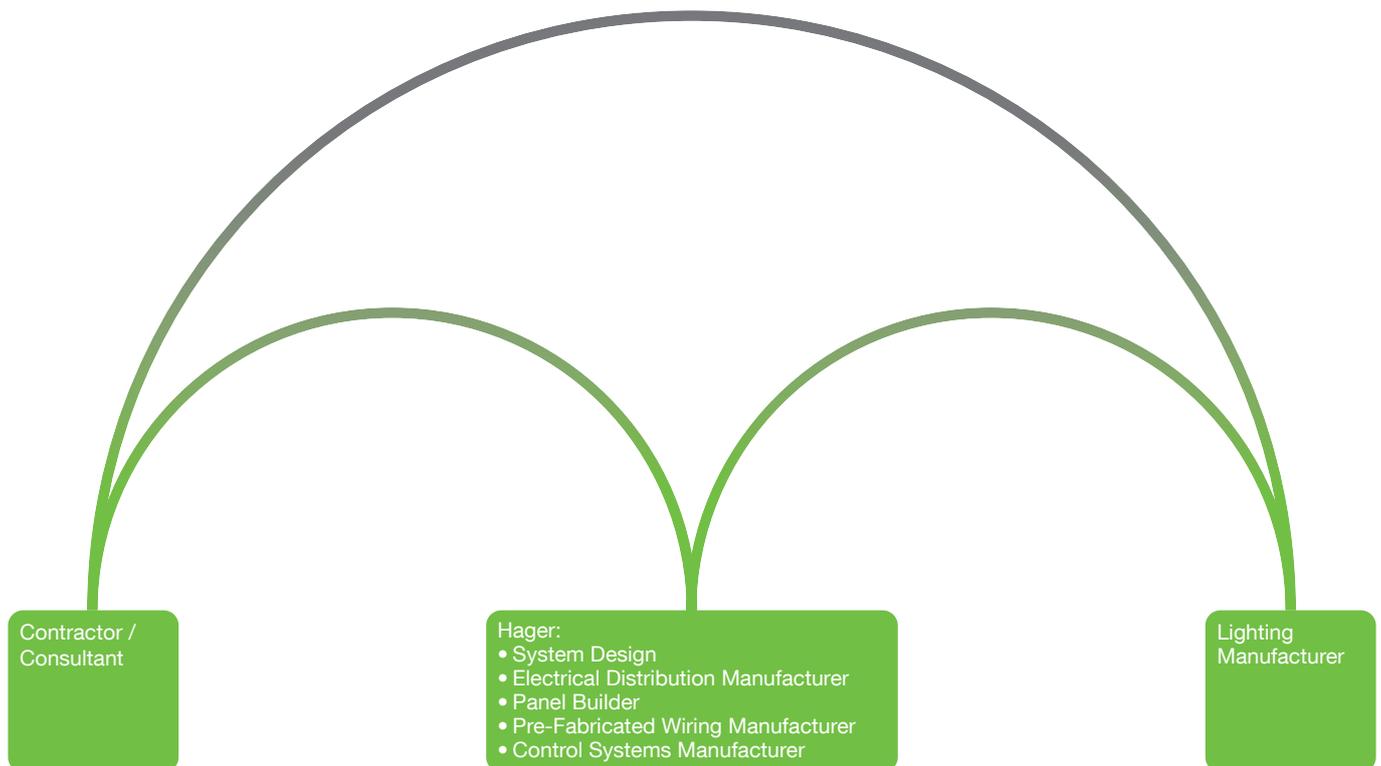
Typical lines of communication for a project:



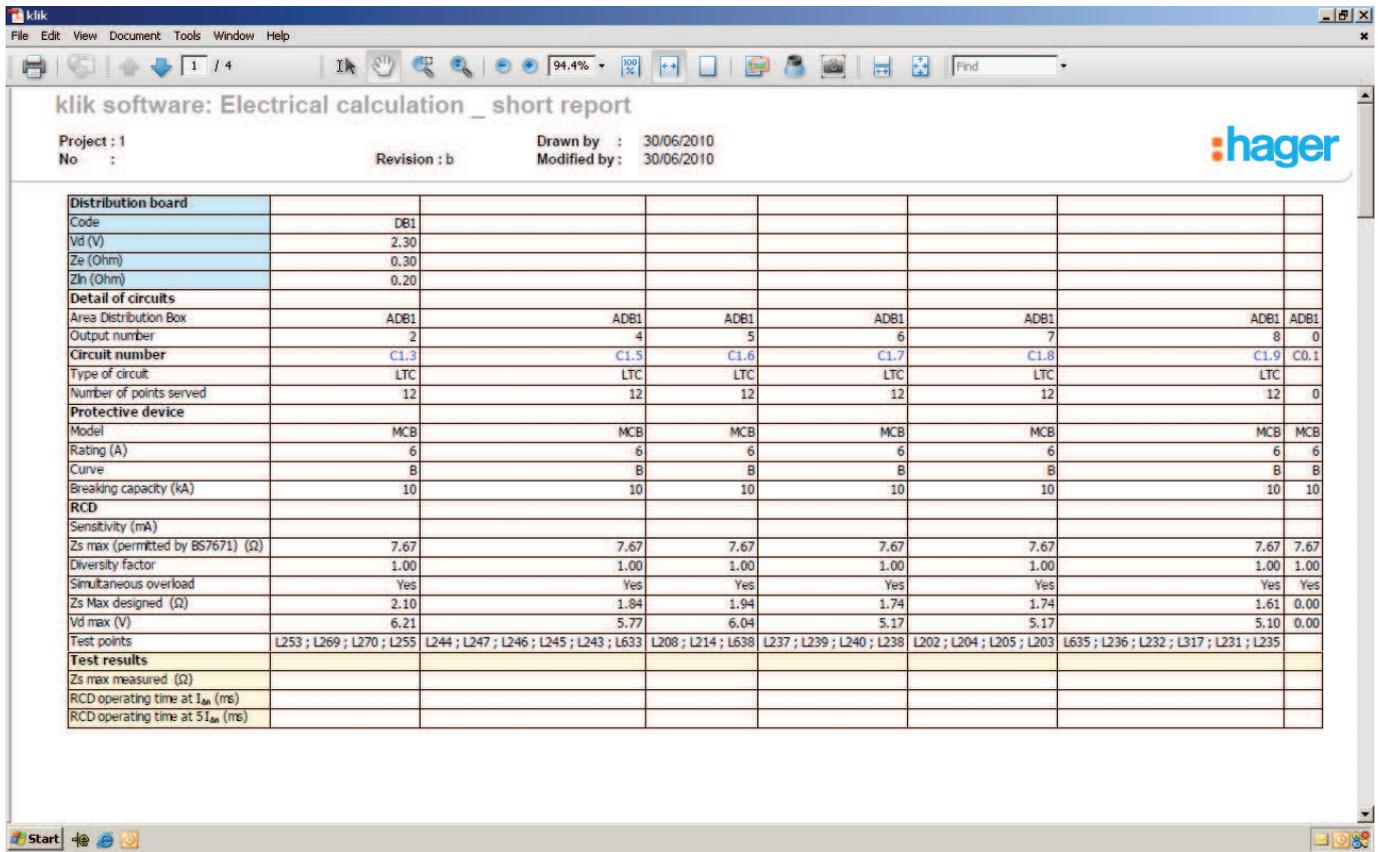
However, with klik.system project the contractor will only be required to liaise with us and the lighting manufacturer. From the building layout drawing, and the basic electrical design information, we will provide a design complete with electrical calculations. Distribution schedules, drawings and test information will be provided for the installer. With the whole system being provided by us, there is no risk of compatibility issues arising at any stage of the project.

Once the contractor is ready to install the klik.system the delivery can be broken down into stages aligned with the scheduled activities on site.

Lines of communication for a klik.system project:







## The quotation

Quotations are also included within klik.system software. These quotations can be broken down by part type or area to suit the client's needs and includes a unique project part referencing system which is embedded into the .dwg file. This also allows the client to order parts of the system to suit the progress of the whole project.

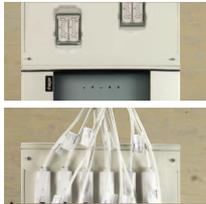
## Printed outputs

The klik.system software enables the printing of quotations, part lists by area or section and electrical reports. A choice of electrical reports is provided detailing all the design information for the project. These reports also provide an aid to the final inspection of the installation with designed maximum Zs Volt drop and testing point information etc.

This section also produces all of the plots for construction drawings complete with part references to aid an efficient installation.

# System components

1



## Pluggable Distribution Board

Hager distribution board to suit requirements of the installation. The distribution board will be populated with protection devices as per the design and pre-wired to a multi-pole socket.

- Factory tested assembly
- Complete with internal connections
- BS EN 60439-3
- Short circuit tested: 10kA conditional rating

6



## Tee Piece

In line connection unit to allow daisy chaining.

- Wired, Pluggable and Direct Connect to Luminaire
- Standard, Digital and Emergency Luminaire
- BS 5733:2010
- BS EN 61535
- Short circuit tested: 1500A conditional rating

2



## Home Run

A Factory made multiple circuit distribution cable connected to the ADB.

- Fed with 27-core 4mm<sup>2</sup> SWA
- BS 6724 Cable
- BS EN 61984 Plug

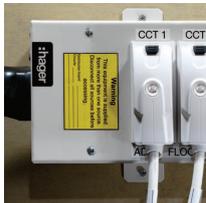
7



## Switch Blocks

A connection unit to enable two way switching.

3



## Area Distribution Box (ADB)

A pluggable outgoing connection unit from which cables distribute to feed final circuits.

- 9 circuits from distribution boards
- Fed with 27-core 4mm<sup>2</sup> SWA
- BS 6724 Cable
- BS EN 61984 Plug
- BS EN 61439-2 Enclosure
- Short circuit tested: 10kA conditional rating

8



## Luminaire Lead

Wired or Pluggable to Luminaire

- Standard, Digital and Emergency Luminaire
- Up to 16A rated
- BS 5733:2010
- BS EN 61535
- Short circuit tested: 1500A conditional rating

4



## Lighting Marshalling Box (LMB/LDU)

A pluggable connection unit from which individual light fittings are fed.

- Pluggable supply
- 5, 7, 9, 11 Outgoing Ways
- 16A rated
- BS 5733:2010
- Short circuit tested: 1500A conditional rating



## Hardwire Marshalling Box

- 7 Pole
- 4, 6, 8, 10, 12 Outlet
- 16A Rated
- BS 5733:2010
- Short circuit tested: 1500A conditional rating

5



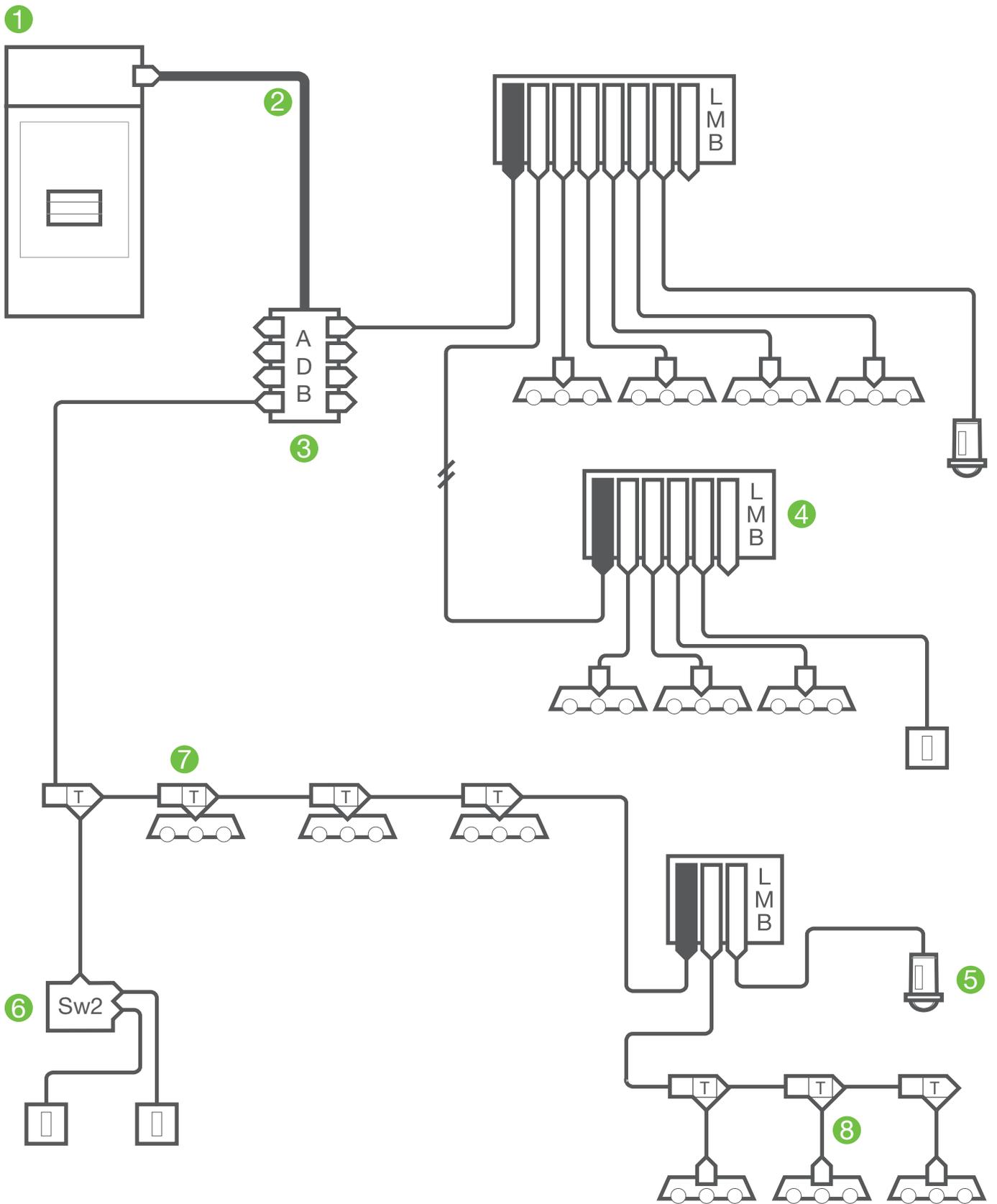
## Sensors

Plug in presence detectors to suit control requirements.



## Conduit Box / Surface Connector

- 7 Pole,
- 16A Rated,
- Standards: BS 5733:2010
- Short circuit tested: 1500A conditional rating



Notes: Installation couplers to BS 61535 only are intended for connection and disconnection without load only.  
 The installation coupler is not suitable for use in readily accessible areas.  
 BS 8488 - Prefabricated wiring systems to this standard by different manufacturers might not be compatible nor safely inter-connectable.  
 Installation coupler systems are not replacements for the national domestic plug and socket-outlet system.

# Service offering

One of the characteristics of prefabricated wiring systems is that they are bespoke and made for a particular project. The product range is complemented by our specially developed klik.system service offer.

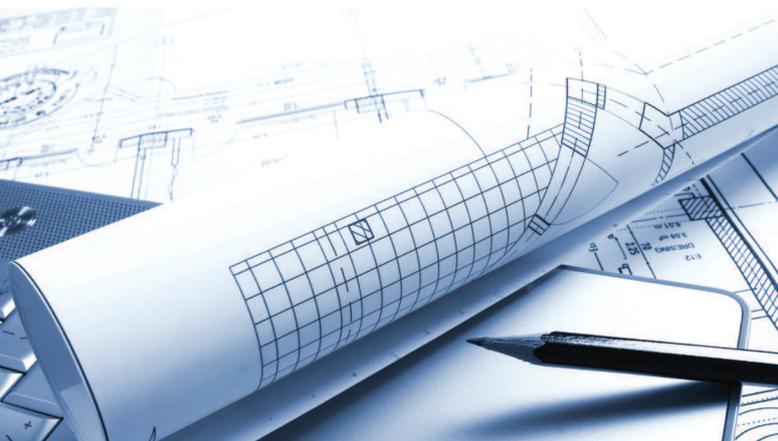


## Sales

Highly trained, with an in depth technical understanding of klik.system, the engineers are able to discuss in detail both the pluggability and controls options available from klik.system to the designer/consultant for the project.

## klik.system training

System installations are carried out by electrical contractors who have been trained to the relevant level of competence in klik.system. We will continually provide training to contractors from basic level through to advanced commissioning level. Our klik.system partners will have access to dedicated technical information and support from our systems technical engineers.



## Design and quotation

Our design and quotation team use a dedicated software package to produce a fully marked up lighting distribution design layer drawing showing positions of products and cable runs. Volt drop and Zs calculations for the system based on design length and cross sectional area. A comprehensive product list, presented in your format, by room, area or floor. A quotation in the format you require and finally a schedule of circuits with all the klik.system information already completed.

Once your quote has been sent to you we will contact you to ascertain it has been received, is clear, and meets your requirements. At this stage we will add to, or change the design as necessary to meet any changes to specification.



## Order process

Once the order has been received our system will break it down to sub-orders to match the delivery schedule and products required by room or area. You will receive an order and delivery schedule confirmation.

## Delivery and logistics

A dedicated team will fulfil the orders as required for dispatch direct to site. The klik.system components will be grouped to the customers requirements.

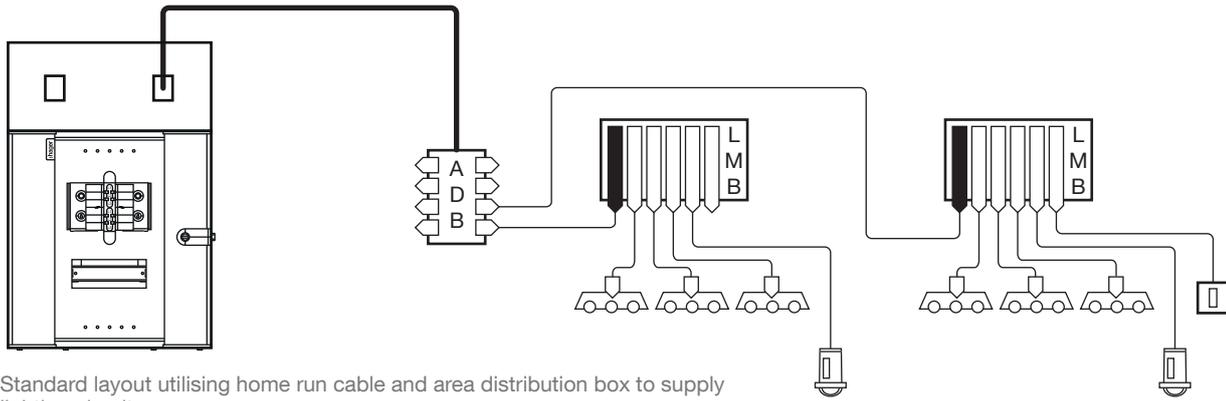


## Technical support and commissioning

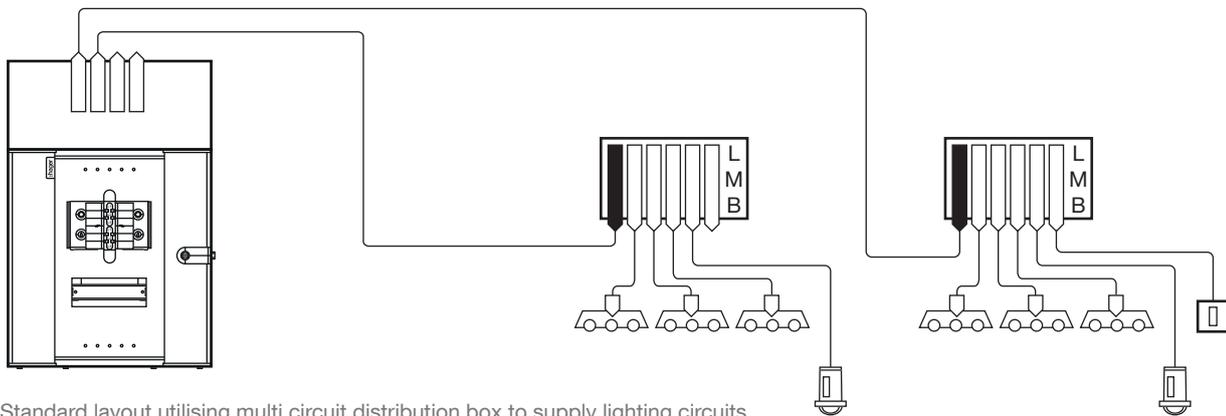
A dedicated team of Technical Support Engineers are on hand to assist with any system issues arising during installation.

Most klik.system products will be easily setup on site by installers. However, some of the more in-depth control systems may require commissioning, we can quote for this service as part of the project.

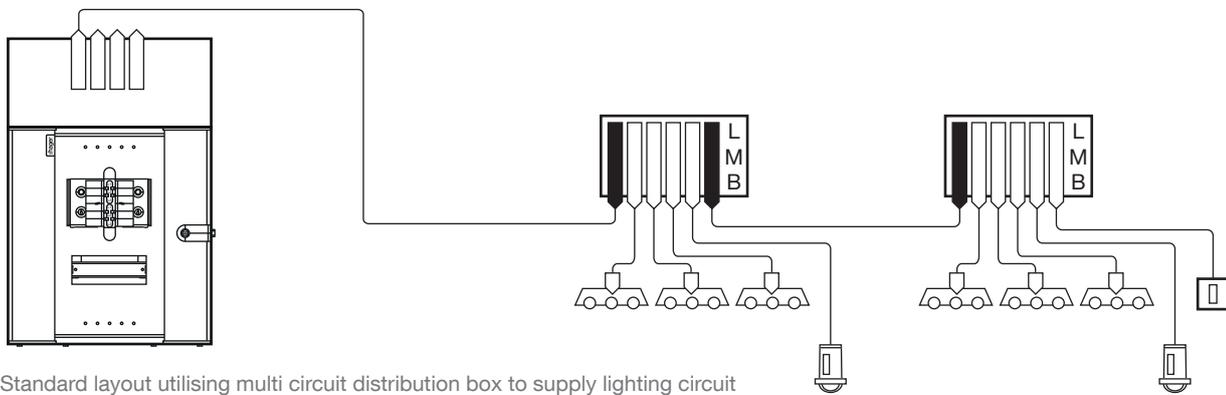
Product Description	klik Product identification	BS number	Description
klik.system Marshalling Boxes	KLMB*P	BS 5733:2010	General Requirements for Electrical Accessories.
Occupancy Sensor	EEK*	IEC 60669-1, IEC 60669-2-1	Switches for household & similar fixed electrical installations Part 2-1 for Electronic switches.
Conduit Box / Surface Connector	KLPCR/7	BS 5733:2010	General requirements for Luminaire supporting couplers for domestic, light industrial & commercial use.
Luminaire Leads	KLB*, KLJ*, KLP*, KLT*, KLE*	BS 5733:2010 BS EN 61535	General Requirements for Electrical Accessories. Installation couplers intended for permanent connection in fixed installations.
Link Leads	KLA*, KLG*, KLK*, KLV*, KLZ*	BS 5733:2010 BS EN 61535	General Requirements for Electrical Accessories. Installation couplers intended for permanent connection in fixed installations.
Switch Drop Leads	KLC*, KLD*, KLF*, KLH*, KLL*, KLM*, KLR*	BS 5733:2010 BS EN 61535	General Requirements for Electrical Accessories. Installation couplers intended for permanent connection in fixed installations.
LS0H Flexible Cord	Supplied with luminaire lead	BS 6500:2000 BS 7211:1998	Flexible cords rated to 300/350V for use with appliances & equipment intended for domestic, office & similar environments.
Pluggable Distribution Board	KLDB*	BS EN 60439-3	Low voltage switch gear and control gear assemblies,
Area Distribution Box	KADB*	BS EN 61984 (Plug) BS EN 61439-2 (Enclosure)	Connectors. Safety requirements and tests. Low-voltage switchgear and controlgear assemblies. Power switchgear and controlgear assemblies,
Home Run Cable	Supplied with KADB	BS 6724	Electric cables. Thermosetting insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V, having low emission of smoke and corrosive gases when affected by fire



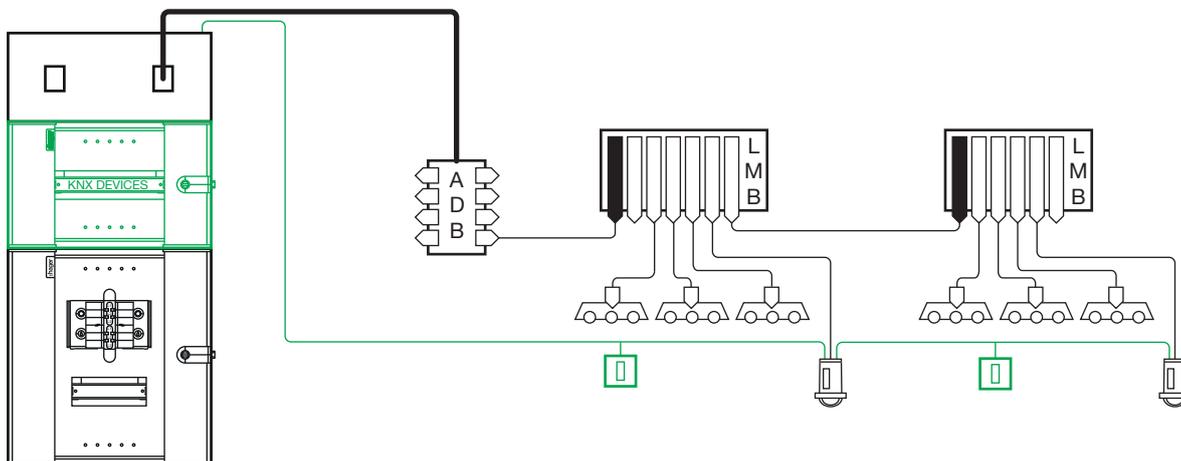
Standard layout utilising home run cable and area distribution box to supply lighting circuits.



Standard layout utilising multi circuit distribution box to supply lighting circuits.



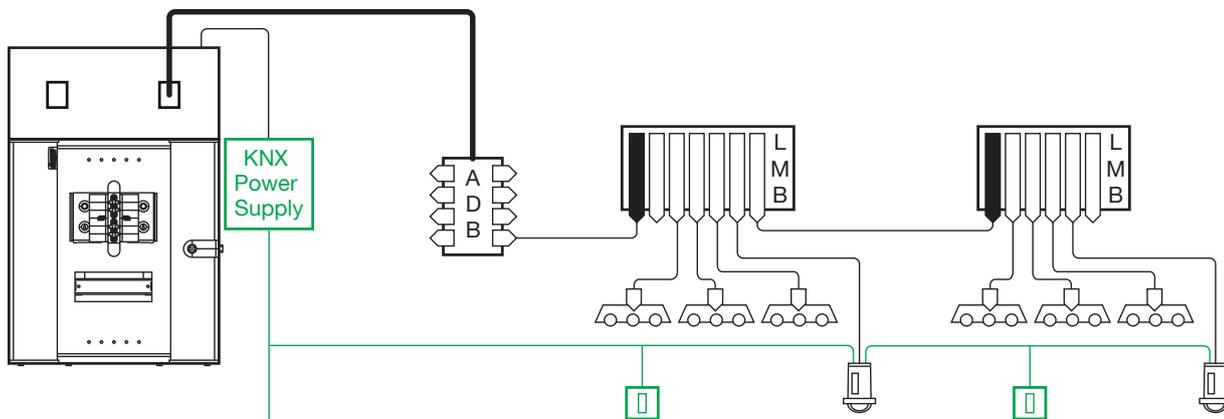
Standard layout utilising multi circuit distribution box to supply lighting circuit with daisy chaining of LMBs, LMBs controlled independently.



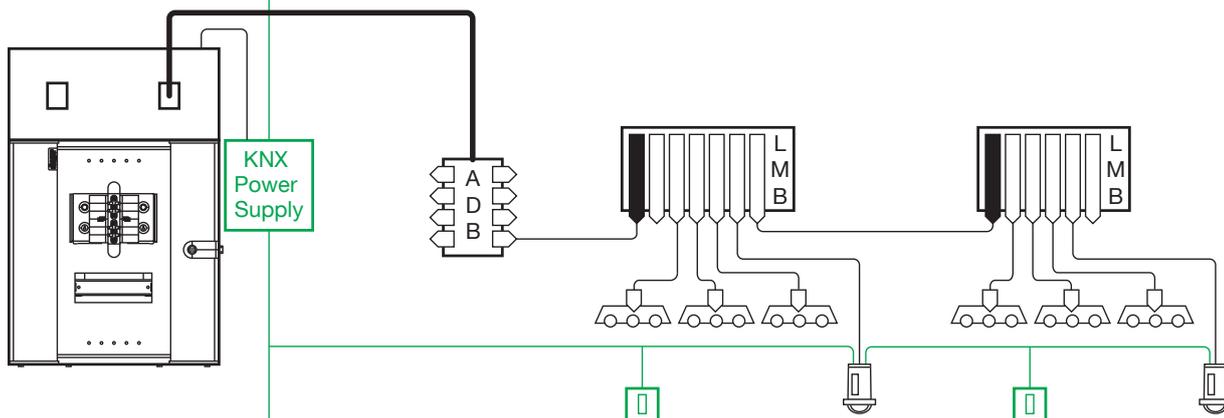
Standard layout utilising home run cable and area distribution box with control provided by KNX system.

Lighting controlled over multiple levels via KNX system with head end visualisation unit.

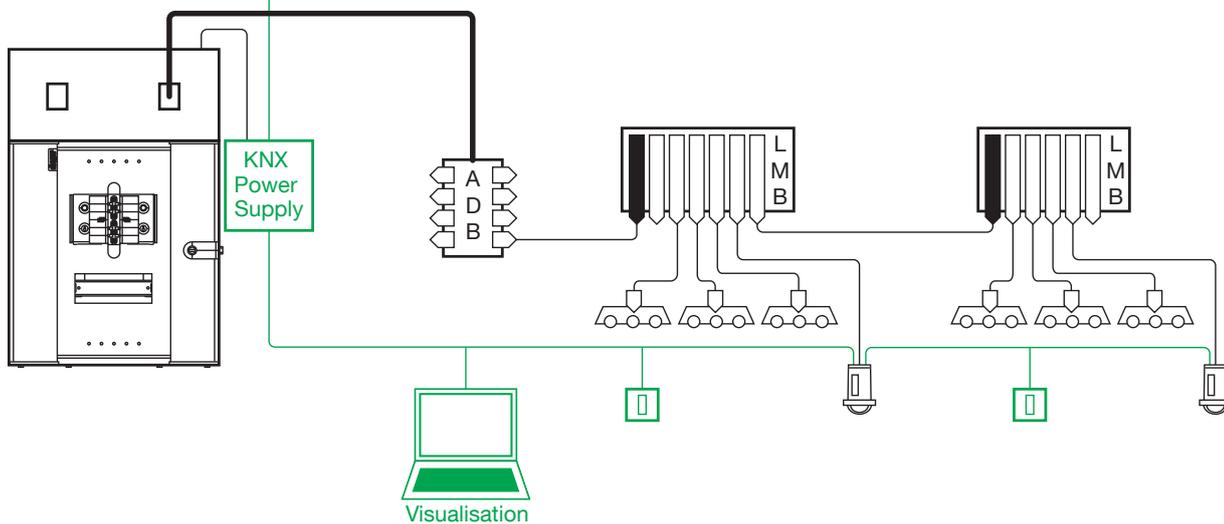
### Second Floor



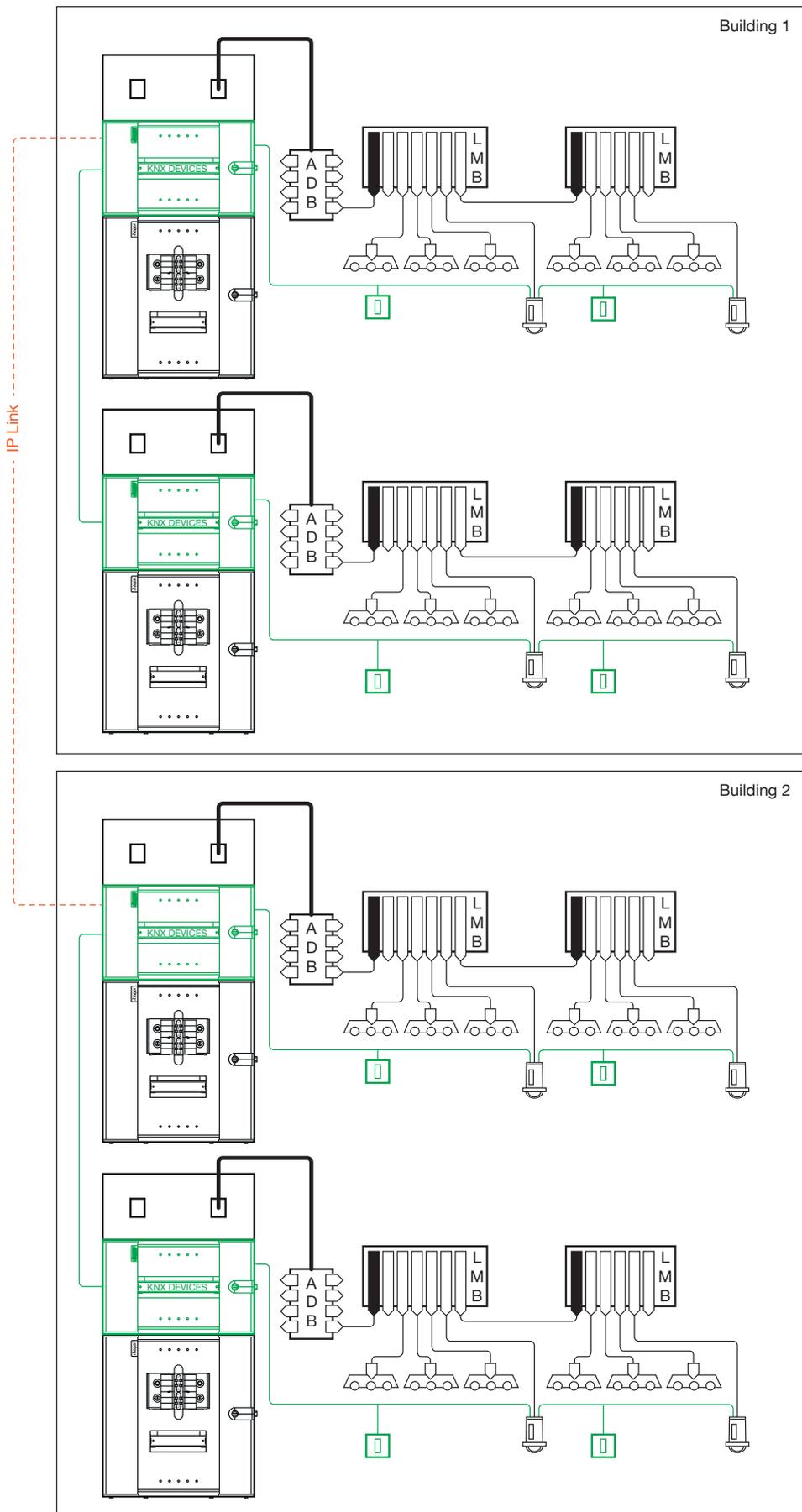
### First Floor



### Ground Floor



Separate buildings with KNX control linked via local area network.



klik

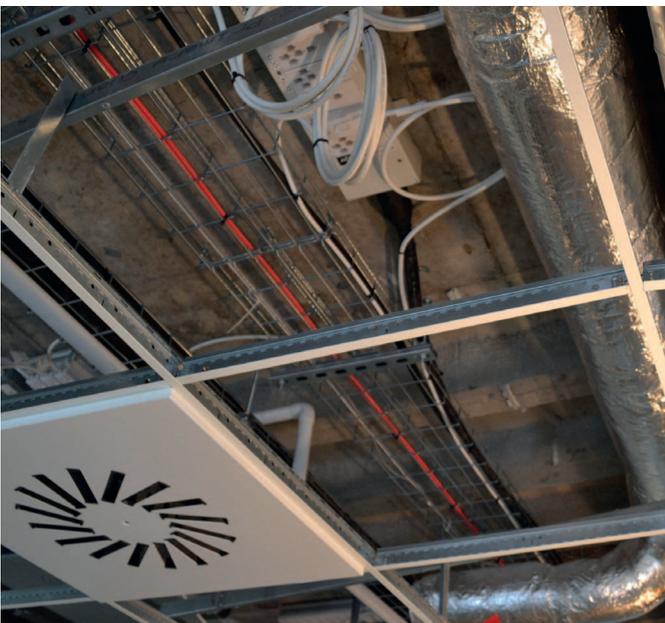


# 6 & 7 New Bridge Street

Burgin Contracting have achieved a 70 percent time saving on an electrical installation for prestigious central London offices by using klik.system.

The installation at 6-7 New Bridge Street in Central London has used klik.system from the distribution boards right through to final luminaires and lighting control. The prefabricated wiring system also provides power to fan coil units throughout the seven-storey building.

Andy Collinge, electrical operations manager for Burgin stated “The system has saved us significant time in the first fix because there are fewer hard wired connections to make. This labour saving translates into a cost saving on the job making us more competitive in the tender.”





## Products and solutions

### klik.system:

- klik.system ensures the benefits of prefabricated wiring systems can be exploited, whilst assuring compliance with BS 8488 (Prefabricated wiring systems intended for permanent connection in fixed installations).

### Invicta 3:

- 11 Invicta 3 TP&N Boards were used, 3 for landlord supplies and 8 for tenants.

“In addition there will be significant savings when it comes to inspection and testing since the system has been designed and manufactured in a factory controlled environment, so it has been pretested. This in turn means that there should be less fault finding before we hand over the completed job and then reduced snagging afterwards.”

Burgin Contracting used 11 of our Invicta 3 TP&N distribution boards; three of these boards are for the landlord’s supplies and 8 for tenants. The dual distribution boards are all MID metered for both lighting and power to meet Part L2 and with MID approval can be used for billing tenants if the landlord chooses to do so.

The multi core home run cables from these boards supply area distribution boards (ADB) in the ceiling void. These in turn are connected into lighting marshalling boxes (LMBs) via link leads. The luminaires then plug into the marshalling boxes as do the occupancy sensors that provide the lighting control.

The occupancy sensors switch the lighting on in response to presence and then switch the luminaires off after a time out period where there is no further presence detected. The occupancy sensors also contain a photocell so that the luminaires switch off if the available natural light is above a set level.

To ensure that the prefabricated wiring system complied with all of the relevant standards and regulations, we designed the system using our bespoke software package. This produced a fully calculated design, which included drawings, electrical calculations, test information and delivery schedules.

“All of the products were delivered complete with drawings that detail exactly what leads should be used where. All of the cables are labelled, so there was no problem in identifying the cables which are used for individual connections, so human error was minimised.” stated Andy Collinge.

As a manufacturer who supplies distribution boards, a lighting installation and control system and wiring accessories, we can provide all of the elements needed for a prefabricated

wiring system. This minimises the problems that a contractor might have on site in liaising with several manufacturers, whilst maintaining all of the time saving benefits they would expect from a prefabricated wiring system.

In addition to this, our bespoke klik.system software does all of the necessary calculations, such as impedance, cable sizing and voltage drop, which are required for compliance with BS 7671. This validates the design and protects the contractor in design and build operations.

