

GETTING ON TRACK

How can raised access flooring contribute to the future-proofing of a building's electrical supplies? *Andy Pearson* outlines the use of underfloor busbar and its potential benefits.

Sustainability is rising rapidly up the world's agenda. More organisations now recognise the compelling reasons in its favour, both in terms of mitigating the impact of climate change and in helping them sharpen their competitive edge.

According to the World Business Council for Sustainable Development, adopting sustainable practices can make firms more resilient and unified in purpose. It can also smooth their relationships with regulators, banks, insurers and financial markets plus ensure that they attract and retain customers and staff. This begs a fundamental question: how can firms ensure that they operate sustainably, specifically in terms of how they manage their buildings?

The key is flexibility. This is something that needs to be built in from the very start of a project, which means the entire professional team including developers, architects, consultants, contractors and facilities managers working together on the design to ensure that they increase flexibility for the building owner.

SPREADING THE COSTS

The initial construction and fit-out cost of a building is around 10-15% of the total lifetime cost. This means that throughout its useful life a large percentage of costs are incurred through refurbishment and maintenance. Hence there is a pressing need to examine early in the project all of possible opportunities for flexible solutions. When it comes to the electrical services, for example, installing a modular distribution system such as power track under raised floors can reduce the whole life costs of a building dramatically.

Most commercial offices in the UAE currently have concrete slab floors with recessed multi-compartment trunking, rather than raised access floors. However, blue-chip, financial and banking clients that are opening offices in the region are expected to increasingly demand raised access floors in the buildings that they propose to buy or lease. This is an important point worth noting by developers, architects and consultants wishing to maximise their business opportunities.

And there are good reasons for installing such a solution. When used in conjunction with a raised access floor, underfloor power distribution offers



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POWER DISTRIBUTION

a range of solid business benefits. These include:

- greater flexibility, especially in terms of allowing the rapid and cost-effective reconfiguration of an office space;
- greater speed and ease of installation;
- future-proofing of the building so that as power

and electrical distribution demands rise, there is the capacity to accommodate them;

- the simplification of maintenance through ease of access;
- ensuring that all services are available wherever required within the workspace.

UNDERFLOOR ELECTRICITY

Track systems are now the norm for power distribution under raised floors in the UK. They are being increasingly specified in the Middle East as an growing number of companies recognise their enormous advantages in terms of flexibility, cost and time.

Electrak was one of the first companies to offer busbar power distribution systems under raised access floors more than 25 years ago. Recognising the need to meet the increasing power requirements of the technology-led workplace, it extended its standard underfloor power distribution range to cater for dual, low noise and three-phase applications.

The company manufactures its products in the UK; they are distributed in the Middle East by EKA UAE. All products are designed and built to internationally accredited safety and compliance standards. They are modular in design, which dramatically reduces

installation times compared with conventional wiring methods and future-proofing the workplace against costly modifications.

Electrak offers three distinct product ranges – of office power distribution, lighting control and busbar trunking. Office power distribution includes a range of underfloor power track, floor service outlet boxes, floor grommet outlets and Rotasoc, a multi-socket, modular desk system.

For lighting control a future-proof system called Lightrak is offered. This is simple to install, commission, operate and reconfigure. A busbar hybrid, buscom trunking, is a combined power and comms distribution product for a range of control systems.

Busbar trunking ranges from 25A to 1000A and can be used to serving applications ranging from office and retail lighting to industrial power distribution.

REAPING THE BENEFITS

Raised access floors provide clients, developers and contractors with huge cost savings and ensure a faster construction time can be achieved. The overall cost per square metre for raised access floor systems is far lower than installing services in a suspended ceiling system and the concrete slab finish and tolerance required is of a different quality than that for carpet and tiles, which means faster slab finishing. Indeed, installing services under the floor can be up to 45% faster than providing them overhead in the ceiling space. This results in a reduction in the overall project construction time.

In addition, raised access flooring enables easy housing and maintenance of the vast quantity of data cables that are required in modern offices. It can also be used to accommodate underfloor air conditioning, an approach which can reduce energy consumption and lower floor to ceiling heights when used instead of in-ceiling equivalents.

Underfloor power distribution systems have advantages of their own. For example, they make reconfiguring a space for tenants less costly and they easily accommodate freestanding furniture; there is no need to core through floor slabs as with overhead systems.

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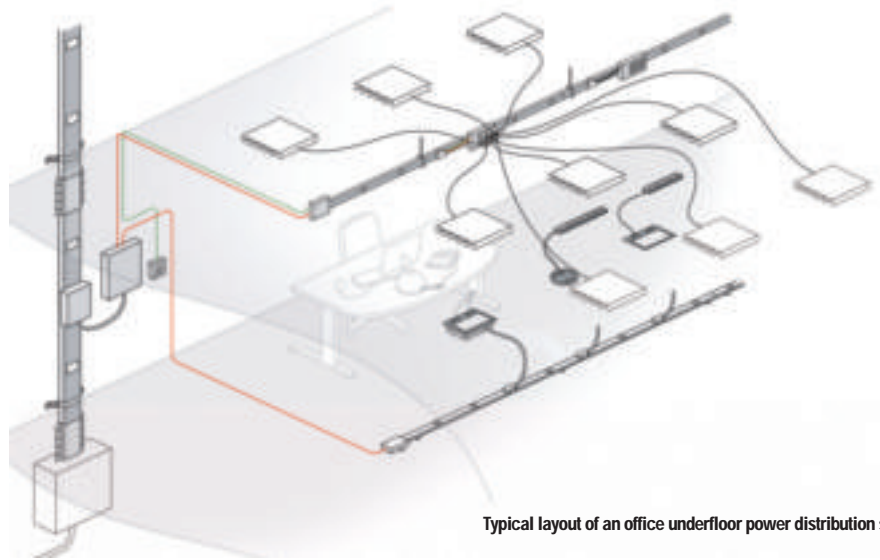


POWER DISTRIBUTION

Electrak power track, for example, is designed for ease of installation. Systems have minimal parts and are installed by rapid push-fit assembly. The system comprises of continuous lengths of power track that are generally arranged in a parallel format. These are fed from the distribution board via track feed boxes and can be installed in a floor void of only 48mm.

The track feed boxes are provided with one or two 25mm-diameter holes to suit mineral insulated, copper-clad cable, armoured cables or single core in conduit. The first length of track connects to the track feed by snap-fitting the integral connector into the track feed outlet socket. Lengths of track then snap-fit together with the integral track connector positioned in the shuttered end of the previous fitted track length. Track lengths have integral floor fixing brackets that further simplify the installation.

Access to power is provided along the power track by simply plugging tap-off units into shuttered socket outlets. These tap-off units feed all types of conventional floor service outlet boxes or directly through the floor to workstations and desks. Electrak offers floor boxes, grommets and a modular desk power system to meet these needs.



Typical layout of an office underfloor power distribution system.

Electrak comes in three standard lengths – 1.2, 2.4 and 3.6m – with regular (300mm) tap-off outlets. It is ASTA approved and certified to *BS EN 60439-1* and *2*. As well as dual tap-offs, standard and low noise tap-offs can be plugged into any socket outlet along the entire track length.

By adopting underfloor power track, a reduction in overall lifetime costs can be gained. It also ensures that a building fulfills its tenants' needs now and into the future. [MEP](#)

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