Notes from conversation with
Mark Ridler, Lighting Director, BDP
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About Mark

Mark is an award winning international lighting designer who leads the lighting profession across BDP architects.

He has ove35 years' experience and is a Fellow of the Royal Society of Arts (FRSA). After designing over 100 shows, he became an associate at MBLD in 1998 and joined BDP in 2003. Mark believes that collaboration is essential for great design and has recruited a vibrant team from varied backgrounds, including product designers, engineers, theatre designers and architects, effectively forging them into a winning force in international lighting design.

Human interaction with architecture through the medium of light is central to his philosophy and practice. His projects are varied, covering commercial, public realm, leisure, retail, art and art galleries, transport and daylight design.

Mark has won many international awards including an Award of Merit for Princesshay, Exeter, and the IALD Award of Excellence for Finsbury Avenue Square, London. Mark was named Lighting Designer of the Year at the Lighting Design Awards in 2014 and was honoured with a Special Recognition Award from the Institute of Lighting Professionals in 2016.

Mark was Vice President, Architectural for the Institution of Lighting Professionals (ILP) and its first Chartered Lighting Designer. He has authored the PLDA ethics policy and is one of the founders of the Joined Up Lighting initiative hosting regular seminars for industry professionals. He co-authored the BCO Guide for Office Lighting and is the founder of the Green Light Alliance, a body devoted to promoting the circular economy in lighting.

In this conversation, Mark discusses the refit of the BDP office in Central London, his views on design and his work with the Green Light Alliance.

BDP office refurbishment project

BDP London office 2019, image credit: Zumtobel.

It was one floor of our London office, predominantly used by architects. The design was done in 2001, so it was quite old.

It was based on a T5 fluorescent, 100% indirect scheme. The architectural context is very high ceilings and windows at high level. So you get views to the sky, but not direct horizontal views.

And when it was originally designed, it was subject to quite severe 'Value Engineering' so only half the ideal positions were put in. It's also split in half north- south. And the south half borders a square and has much better daylight. The north half has narrow Victorian streets with surrounding warehouse buildings. So the daylight was much, much worse. The interior design had been reconfigured to accommodate a changing work setting so essentially the lights were no longer where they needed to be.

The uniformity was pretty poor.

The facilities managers had done their best in terms of cleaning. But the reflectors on the indirect luminaires were not as good as they used to be. So you got a horrible stripey ceiling and poor uniformity to the deck. We were getting complaints from people not having enough light.

When it was good daylight, you could get away with it. But where there was bad daylight, it was just not acceptable. So we put in more infrastructure, we introduced a direct-indirect scheme so we could increase the intensity but keep the same volumetric illumination. So people's facial rendering was as good or better.

The good thing about fully indirect lighting is that you get very good vertical illumination because the light kind of 'snaps' everywhere. So you're not getting that direct shadowing. But the bad thing is that it has that cloudy sky feel. It's very diffused. So our preference is to have a mixture of direct and indirect. You get some kind of punch and intensity - it's a

more efficient way of doing it - but still you get the bright skyline. You still get good visual modelling of people's faces. Vertical illumination on the walls is still good.

The main thrust of the design was actually really, really simple.

We increased the light levels to what they needed to be - which was quite a lot more light -but we didn't increase the energy use. So whilst the move to LEDs didn't save us energy, we increased the light levels without using any more electricity.

In the original situation, there was no lighting control at all. There were just switches at point of entry. That meant essentially that the lights were on all day, every day until the security guard wandered around at night. So, it could be turned off at nine, 10 o'clock at night, but the whole floor would be burning if there was just a single person working late; really, really inefficient.

One of the things that we introduced was a Bluetooth control system, without having to run extra control you could nonetheless introduce PIR sensors on a time clock regime. That also allowed us to dim the light level so that it was optimised.

But that also allowed us over the coming years as the LED output 'droops', to periodically raise the electricity going into the installation so that those lighting levels would be maintained. So there's a lot more efficiency. You've essentially got constant illumination. The colour rendering is improved massively.

We were quite subtle and precise about the line of slightly cooler light going up and the warmer light coming down. So it was flattering on skin tones. But you still don't have the bright daytime impact. We didn't go the full circadian route. There's so much daylight in that space that we felt as though the benefits of any daytime boost would be very minimal if anything.

It would have been nice to be able to tune down and go very warm in the evening, but that was an aspiration that we couldn't really afford.

The whole scheme is based on task illumination as well. There are desk lamps on every bench so people can turn their lighting level up. If, for instance, they've got visual acuity problems or they're slightly older and their eyes just need that little bit more light.

We used the Linetix product - it's extremely discreet since it has a very low profile. In a white environment there's so much light that they almost disappear. And then there are spotlights on the track that was providing the electrical infrastructure that allows us to highlight wall features. There are big format images of the architects' previous projects, for instance, and pinups for crits and ongoing work that people want to share or they are particularly proud of.

So the end result was quite a simple scheme in many ways but
produced a complete revolution in satisfaction with the lighting environment.

Obviously when you're doing the lighting design for your own building and for a whole bunch of architects who are essentially my clients, the pressure to get it right is quite high.

You'll never hear the end of it if it's not!

They were very pleased with the result - it has been pretty well received.

Impact on energy usage

Shelley: I understand that you're able to replace your fluorescents with this new lighting scheme without any increase in the amount of power usage. Is that to do with the sensors or is it to do with the technology?

It's essentially three things.

- One is the light source: just much more efficient than fluorescent.
- Second is the optics: they are very well engineered so you get a really wide distribution of light for the given suspension height. The glare characteristics of the downlight element are really well controlled too. Which means that you can drive the lamp a little bit harder, which increases the efficiency.
- The third element is control: just adding efficient controls really makes a big difference.

Shelley One of the questions people in the property sector ask is how much more is this going to cost? Would you be able to say roughly how much more this solution cost?

If you were comparing this to a 600mm flat panel lay-in ceiling solution, but that's not an option in that space anyway - because we didn't have a 600mm ceiling - so you can't compare it to that.

You couldn't compare it to an office environment with a 3.2 meter ceiling because this one was four and a half meters. So what would the 'bargain basement' solution have been? It's

difficult to think of anything other than some kind of suspended or trap-mounted solution in that space.

I suppose you could have gone for a completely direct system. I don't think that would have saved that much money.

But the critical thing is that lighting is a minuscule part of the cost of the building, and a completely negligible part of the cost of your people. You've actually only got to get your people working 1% better then you've paid for the lighting 10 times over.

Northamptonshire County Council: cost savings and improved performance

To give you an example, we did a project for Northamptonshire County Council.

We introduced the Linetix floor-standing solution to that project as a value engineering option. In that situation, you still get absolutely perfect light in terms of direct/indirect, people, energy, but you strip everything off the ceiling.

This allowed the engineers to strip the cooling off the ceiling - they didn't have any services to the ceiling at all - so the whole thing actually produced a much better quality of light and cost less as well.

That's unusual, but it's an illustration that quality doesn't always come at a capital premium.

The value of design

This is one of the contributions that design brings: if you look at the brief very carefully and you understand what the project's strategic objectives are, you frequently can come up with a solution that is more efficient, uses less stuff, is cost neutral and energy beneficial, and in terms of the human, massively beneficial.

But if you were just going to say, well we're going to do a sector generic solution.

So a good fitting was going to cost more than a bad fitting. How bad can we go? It depends what the budget is. Depends what we can get away with, depends what minimum numbers we can hit. Nobody's going to like it - actually in a Cat A situation they'll probably come in and rip it all out and put something else in anyway.

Just not the way to do it. And that's not capital efficient either. I can't give you: 'it only costs 10% more' because sometimes it costs 30% less and sometimes it costs 20% more.

Most of what we get involved with is owner occupied. In some fashion. So you're creating something for an end-user.

That's what motivates our design: a profound understanding of human needs and desires within an architectural environment. So unless we know those needs and wants of your end user, that human within the space, is going to be, it's quite difficult. Because then it just boils down to a compliance question: what's the cheapest way of getting those numbers.

But they tend to end up being, well, inevitably not very human, and therefore not as effective as they could be. There's enough light for you to come in and do pretty much anything. But will you want to? Will that help you in a workplace environment?

Will that help you attract the best staff? Is that going to create the best teams? Is that going to keep people in your organisation? Is it going to communicate your brand values or your ethos to your staff if they are just in some generic office that could be anywhere in the world, anywhere in the country?

It depends, I suppose, where you as a business are in that value chain, as to how much you value the environment you provide for yourself.

We have provided the architects on that floor with an exemplary environment so they can just get on and do what they love; to do it well without getting migraines, without headaches, so they can work productively and happily. They're not gold-plated. There's nothing luxurious about it. There's nothing ostentatious about it. It's just good high quality illumination. It's the minimum they deserve.

So if you were talking about reducing the cost you'd also have to commensurately reduce the quality. And then how low do you go before your staff start noticing or complaining?

It's almost impossible to attribute particular numerical impact to a single source of intervention. So if the bean counters are going 'well, show us the money, then, prove it', I've never been able to have the stats that do it. But then you don't have to do everything objectively. You can do things qualitatively as well.

Future proofing and the circular economy - product or project?

We've done quite a lot: It's now got a very flexible infrastructure. So you would hope that the lighting and electrical infrastructure will allow for the space to be adaptable in the future and the dimming system with the head room.

But one of the things I've been heavily involved in is the Green Light Alliance, which is centred around the circular economy. The challenge is interestingly, what happens if the light fittings actually out-last what the need is.

What do you do with them end of life or interestingly, when they've still got quite a lot of life left in them? That's a really interesting debate that we're trying to grapple with, both as designers and the supply chain - they're beginning to change the way in which they construct the products, but also looking very carefully at their business models.

Designers are the halfway house to communicate circular economy principles to clients. Last year, we did research that showed that the projects are a really intrinsic part of that circular story. Because you can have a circular product but if you insert it into a non circular project, it's not circular. That interface between CapEx and OPEX is really critical and there's a big journey there for sure.