## From peroration to plug and play

# How many presidents does it take to change a light bulb?

As a in boy in the 1970s, I can remember walking onto my local high street by night. On the way the streets were somewhat dimly lit and when you got there, only the occasional shop window was illuminated and the sum total of the exterior lighting scheme for Bligh's Hotel was a solitary lantern hanging over the main door. So, maybe not the most energy efficient of technology, but there wasn't that much used and what there was lasted a long time, *writes Bob Bohannon, President, The Society of Light & Lighting*.*

**Bob Bohannon, President, The Society of Light & Lighting.**

Jump forward 30 years and I was running the British arm of a German exterior lighting company. On average our fittings lasted 15 to 20 years in use and on the rare occasion somebody had a problem, we maintained a stock of spares and would do all we could to repair things … often for free as part of our commitment to the product. In the office, if a fluorescent tube failed, we would reach up and put a new one in with little thought, cleaning, repairing and re-lamping – all forms of life extension; keeping things in use was natural then.

Move forward another 15 years to around 2015 and now the lighting industry was driven by a laser focus on luminaire energy efficiency. While officially predicated on a need for carbon reduction, the true driver was the return on investment possible by replacing legacy luminaires with ultra-efficient LED versions. As with any business case, the lower the capital cost the quicker the return on investment and this, coupled with an offshoring of manufacturing, created the low-cost LED luminaire.

Compared to my dimly-lit high street of the 1970s we now see an explosion of coffee shops, retail outlets and restaurants, all with many, many more luminaires than before – albeit very much more energy efficient ones.

But here's the rub, the old joke about how many (fill in your stereotype) does it take to change a light bulb doesn't work anymore. The LED and the driver is often integral to the fitting, so if one were to fail you have to replace the whole thing – you simply can't repair it, life extend it, even if you wanted to. We've become used to this throw-away economy, only pausing to grumble that our washing machine/TV/whatever doesn't last as long anymore, while we order a shiny new one.

By now you are most probably thinking that this Bob Bohannon bloke is a bit of a luddite, stuck in that pre-LED world where everything looked better through (2700k tungsten) tinted spectacles. LEDs are more energy-efficient and they are also part of our green jobs revolution that drives economic growth. All that is true, but it is not the whole story … we might have a problem: "The only person who thinks we can have infinite growth in a finite world is either a lunatic, or an economist." – *David Attenborough*.

Now many would reasonably think that we recycled all those replaced conventionally-lamped fittings, or those generation-one LEDs that didn't last quite as long as was hoped for because the manufacturers were still on the learning curve. However, here again I present you with another inconvenient truth: "In 2019, 42,000 tonnes of lighting equipment was placed on the UK market. Only 2,700 was recovered through WEEE schemes. The amount officially recorded as re-used was zero." – *Nigel Harvey, Recolight*.

So, what happened to all these luminaires, not forgetting that the WEEE Directive came into force in 2003, so any equipment 18 years old or younger all proudly bore the crossed out wheelie bin mark? The harsh reality is that much was sent to landfill. What did go to a grandly-named *Approved Authorised Waste Treatment Centre* saw any value in your old luminaire literally shredded to recover the metals, which themselves would need energy inputs to melt them down for re-use. Green? No.

Our old method of resource usage under the typical economic model has been referred to as *Take* (resources from the environment), *Make* (products in factories), *Waste* (dispose of products into the natural environment). Dr Mark Carney, the renowned Canadian former head of the Bank of England asked in his recent BBC Reith Lecture: "Why do financial markets rate Amazon as one of the world's most valuable companies, but the value of the Amazon appears in no ledger until it is stripped of its foliage and converted into farmland?"

Many readers will know of the circular economy, but I must stress it is not just about more recycling. True circular economy is about keeping products at their highest value for as long as possible, in our case keeping a light fitting as a light fitting by a process of good product design, product quality, serviceable and upgradeable components. Luminaires should be able to be re-purposed, re-used or re-manufactured and this requires

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not just product design changes but an ecosystem of supporting services – more green jobs, but this time locally-based green jobs.

**From linear to circular**

I can report that, slowly, things are changing. The Irish Government published its *Waste Action Plan for a Circular Economy* in September 2020. The UK Government's industrial strategy has confirmed ambitions to double resource productivity and to eliminate avoidable waste by 2050.

Policy documents are an important part of the road map to sustainable building services, but as David Attenborough will be the first to remind us, the environment will not wait. We need practical action right now and this will most likely take the form of legislation, supplier innovation, specifier or client-led demand, dissemination of practical knowledge, and the adoption of assessment methods.

The European Union's *Single Lighting Directive* has started the move to action requiring the removal (replaceability) of light sources and separate control gears (LED drivers). A handful of manufacturers, from large multi-nationals to national players down to smaller operations, should be applauded (and maybe rewarded with our custom?) for their hugely positive moves towards circular economy capable fittings, supporting ecosystems to keep them in use and use of a disparate array of accreditation.

Which brings us back to the title of this article "How many Presidents does it take to change a lightbulb?". Well, back in May 2020 I was honoured to become the President of the Society of Light & Lighting. My Presidential Address, delivered online rather than to the usual AGM due to the UK's first COVID lockdown, was on the theme of "Build, Back, Better". A key aspect was the adoption of the circular economy.

But we didn't just leave it as a President's peroration, mere motivational words. We started listening, consulting, learning and engaging and what is soon to come out of that whole process is a suite of three tools, the objective of which is to to give information to all, enable supply push by creating a nuts and bolts tool for manufacturers, and to stimulate demand-pull by giving specifiers and clients the questions they need to ask.

The first tool in the suite is the forthcoming *CIBSE SLL Technical Memorandum on the adoption of Circular Economy in the Lighting Industry.* This describes the back-ground to the circular economy in general, including the drivers behind its adoption. But most importantly, it gives guidance on how the circular economy affects each sector of the industry, what opportunities it may bring them and what to do next.

We are also near the completion of the *SLL's Circular Economy Assessment Method for Manufacturing (CEAM-Make)* which allows manufacturers (or specifiers if they so wish) to assess the performance of their luminaire and its supporting ecosystem in terms of its circular economy performance. The resulting score is out of 4, and the objective is to move as many products and manufacturers from zero to hero (4) as quickly as possible by giving them the detailed issues they need to consider. The assessment method is comprehensive, covering product design, manufacturing, materials and supporting ecosystem.

The CEAM-Make may be a little too in-depth for a busy specifier to use every time they need to choose between luminaires, or in the transition period where manufacturers have not yet fully completed their CEAM-Make assessments. Therefore, the third part of the suite of tools is the *SLL's CEAM-Design*. Being a specifier support tool, it essentially prompts the most important questions to ask a manufacturer.

All the tools in the suite have been created in full consultation with people knowledgeable in the field, from manufacturers to product designers, lighting designers and end users. The tools will be updated, but the hope is that they deliver the practical know-how, understanding and level playing field for claims that make an already-green industry truly sustainable in terms of its product's in-use energy performance . ■

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**A strong believer in both environmental and corporate social responsibility, he is committed to reduce the environmental impact of his activities for the sake of generations to follow and is currently leading the team writing the *SLL's Circular Economy Fact File & Assessment Method*.**

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