

Notes from Drivers for Change Panel debate, 9 December 2021 via zoom Hosted by Dr Shelley James chaired by John Bullock

With panellists

- Graham Edgell, Director of Sustainability and Procurement, Morgan Sindall
- David Geddes, Director at CO2 Target
- Florence Lam, Global Lighting Design Director at Arup
- Phil Marsden, Project Director AT Muse Developments
- Mark Ridler, co-founder of Green Light Alliance, Head of Lighting at BDP
- Gayathri Unnikrishnan, VP of Lighting Standard Development at the WELL Building Institute
- Simon Wyatt, Director for Sustainability at Cundall

Background

This event is part of the Luna Pro campaign, a six-month programme of events, interviews and cross-sector debates to build the business case for healthy lighting. This has been made possible by a team of six international manufacturer sponsors and a global network of scientists, regulators, industry bodies and media specialists. We are building on a social media campaign earlier in the year to raise awareness among teens of the impact of lighting on their health and well-being. These 'Tik Tok' style videos reached 2.5 million young people around the world with a click-through rate of up to 230% among German students.

The young people pointed out that they don't buy the lights. It became clear that around 80% of the professionals who buy lighting for our homes and hospitals, schools and offices have no formal training. So I set out with this brilliant team to find successful business people who had invested in better-quality lighting as a sound financial decision. And it was surprisingly hard to find.

But the people I did find were passionate advocates. They were all clear that spending a bit more was good for their people, good for profit and good for the planet.

So why is it so hard to find people who are really willing to talk about how better-quality lighting stacks up in commercial terms - and then put their money on the line?

It's a huge tanker to turn around: a fragmented sector with split incentives, a lack of transparency and a sector built on short term results to shift boxes rather than lighting solutions that integrate daylight and longer-term whole life costing.

I'm under no illusions. But the only way to do that is build bridges outside the lighting sector - thanks to people like our amazing panel today who are not only outstanding innovators, thinkers and leaders in their own fields, but also are starting to make a real difference to the way we buy lighting.

John Bullock:

Shelley gave us the provocation 'Drivers for change' for today. I would first like to look at two ways that change is necessary. First, we learn more about ourselves. We learn more about the way we work and the way we live. And when we look at our technology, we realize there is a real gap between the way we have been doing things and the way we could be better off doing things.

That requires a change. We also have to change in response to external circumstances. We have a climate emergency. We need to be learning to do the same things differently - and do different things differently. But these things will not go away.

We can't use our current thinking to move us into the future.

It's not to say the lighting industry does things right, but the construction industry ends up building poor buildings. And they build poor buildings because we have very poor management when it comes to procurement whoever's fault that might be.

So we don't only need change to look at where we're going in the future. In order to get to ground zero, we've got to start doing some of the old fashioned stuff much better.

INTRODUCTORY REMARKS

Gayathri Unnikrishnan:

We know that there are issues with transparency and there are issues with how we use light, but I want to take a few steps back.

I serve as the concept, lead for light and VP of lighting development at the International WELL Building Institute. We develop and administer the WELL building standard that is being used in about 3 billion square feet and impacting millions of people. My team and I review hundreds of research papers, standards and codes to develop the rating.

And we know two things for sure:

Number one: Where we sleep and spend our time has more of an impact on our health than our genetics. Number two: there are decades of research, linking human health and the built environment.

And the only people who can implement that, research are people who develop and run buildings and organizations. People like yourself.

Our ancestors started controlling fire about 2 million years ago, manipulating it for light heat and protection. In fact, control of fire was seen as the first indication of the technological evolution. We actually still have evolutionary characteristics from then.

Recent studies show that the direction of light has an impact on how our bodies respond. Light coming from above is more effective at treating circadian disorders and depression, light from below has less awakening characteristics at night: Light from above = the sun. Light from below = the fire.

Electric lighting, as you all know, started being used commonly about 100 years ago. Electric light showed us the possibility to extend our day, to change how we use spaces. It changed how we design and build.

And I'll ask you how many of you have spent 16 hours in total outside over the last week? 10 hours? I'm in the five hours camp.

We're spending more than 90% of our time indoors. We are healing, working, resting, and sleeping indoors. Our children are studying and playing in those electric lights. Light has replaced sunlight just in the last century.

Honestly, how we use electric lighting needs some love! Many spaces have lights that flicker, that can't be controlled and are just not working.

This has a huge impact on health. We know that flicker is directly linked to migraines and seizures. We know that light exposure at the wrong time can disrupt our sleep and cause many other issues, including cardiovascular diseases, depression, and obesity. Decades of studies link light to our health: children learn better when they're near windows, they score better in tests. People are more productive and happier when they sit near windows.

I know that all spaces don't have windows and daylight. But why can't they have great electric lighting? Strategic lighting, even on limited budgets can make a difference in people's lives. And that's where you come in.

Yes, you.

In your work as building professionals, you have incredible power and a huge responsibility to make that difference.

And with that, I'll leave you with one final thought.

What can you do within your circle of control to make a difference in the lives of the people who will use the building that you work on?

Graham Edgell:

As a main contractor we touch most of the sectors of the built environment.

For us, it's all about the wider, sustainable agenda and how we in our industry can move it into a more prominent place. There are three things that are really important to us: the social value and the people, what we do in terms of waste and what we do in terms of carbon.

If you break that down into more tangible numbers: for every person in the world, we generate 1.26 tonnes of CO2 in the built environment.

You can probably pick holes on some of my numbers, but it's responsible for 45% of the carbon emissions, of which 27% in domestic properties. And 18% is in the rest of the things we do. That is a massive baseline to start from.

When we look at the way we, as contractors and designers can actually start to influence those people issues, we have an absence of data and real measurable standards, validation, accreditation and consistency.

When you're in a CapEx driven arena as we are with low margins, it becomes quite a challenge to get all of us together to collaborate.

And I think our industry is one of the very best to do that. We're better than nearly all the others, but we need now to rally behind the flag.

Moving forward, there isn't a platform for lighting within the circular economy.

And where there is, it's inconsistent. And so we as a contractor can't even bring in the wellbeing people factor because we're still worrying about the CapEx rather than the lifecycle - whether it will end up in the skip and all those other factors.

The intent is there. But we can't find the consistent solution we need to move it forward. So we move into 'devalue' engineering that project to get the CapEx down and try and find ways to solve it at the back end. But it's often too late.

We don't influence at the right time.

I want to highlight the risk factor, which is a barrier when you're in a low margin sector: it's difficult to decide whether to take a gamble to go for more innovative product, more innovative solutions. I think we probably get driven too much by compliance governance and maybe the new EU taxonomy, which will catch us up.

But in the meantime, the reason why I wanted to participate is that the next thing on the agenda for us is to drive up the collaboration, working together to find solutions.

Phil Marsden:

We're a national property developer- we specialize in large urban regions, mixed use projects very often delivered in partnership with local authorities. We take great pride in creating vibrant and sustainable places that are focused on improving the communities we work within.

We've got a strong sustainability strategy based on five key objectives: reducing carbon, promoting biodiversity, health and wellbeing, reducing waste and social value. And we're working really hard to push our performance against those objectives. It's clear our industry needs to make some radical changes focusing, particularly on carbon and energy efficiency if we're going to make progress as a sector in tackling climate change.

And that clearly includes how we work with lighting. We acknowledge lighting's got a key role to play in our schemes, creating the best possible environments for communities and people who work in our offices, live in our homes, and spend time in our leisure and outdoor spaces. And we want to create places that are interesting, vibrant, welcoming, safe, comfortable, energy efficient, and well designed, good quality and interesting.

When you look at our five key objectives in our sustainability strategy, lighting has got a very important role to play in all of them.

I can only really comment on what happens in the commercial sector. Lighting's probably not often given the appropriate level of attention that's really needed.

If you looked at most new open plan offices or residential development, you would probably see very similar light fittings with very similar light levels, the same sort of tones and colours used.

Typically in the commercial world, lighting is designed by the M and E designer. We probably only bring a specialist lighting consultant on board when there's specialist need or feature. This approach perhaps needs to be reconsidered: is lighting important enough to warrant its own specialist consultant on every project?

The functional requirement for lights drives the design in most instances.

But from my personal experience, whenever we have tried to be more innovative, inventive, adventurous with a brief for lighting, we have ended up with a ridiculously expensive solution and probably not very sustainable solution, actually.

And it's fair to say, along with most of the elements of construction, the absolute focus remains on capital cost, rather than full life cost. If we're really going to start moving forward, we need to involve the carbon cost and overarching social value into decision-making - including lighting.

In terms of procurement, a regular pattern we see is that we'll get a design specification that is coming in over budget. The contractor and subcontractors come up with a new design with a heavily reduced price for lighting.

That's quite often the case. I find it quite hard to understand how some contractors can come up with a solution for a lighting scheme that looks the same, same performance, but costs significantly less.

From a client's perspective, there seems to be a dark art involved in the procurement chains around lighting. There is far less transparency than some of the elements we deal with.

And I'm keen to understand how we can involve manufacturers suppliers earlier on in the process to gain the benefit of their specialist knowledge, look for more innovative solutions.

As a responsible developer, we're committed to driving change, creating interesting, vibrant places, and we accept there may be some additional capital

costs needed. As an industry we need to come together to address all aspects as well as lighting.

Simon Wyatt:

I lead our sustainability team. We've been looking at the implications of lighting for the last few years. And when we look at the sustainability, at people and planet, there's always been a mismatch of focus. At the moment, there's a very strong focus on the planet and net zero carbon and circular economy, which I'll come to.

But six or seven years ago, the main focus was on people. And with the launch of the WELL building standard, we saw a huge rise in interest of wellbeing and design. We were the first adopters of the well building standard in Europe in our office. And we've delivered over 50% of the certified space now in the UK.

And we were engaging with a lot of clients around wellbeing, both using the WELL building standard and just generally the principles of health and wellbeing. And there's been very interesting over the last few years, the disconnect between the known benefits of how from wellbeing, including lighting and the actual procurement.

We regularly go into organisations and talk about the benefits of designing for healthier spaces, the benefits of better lighting, the benefits of achieving the WELL building standard. Everyone is generally enthusiastic and they can clearly see the benefits. We know that 90% of the cost to most organisations is their staff. They understand the financial benefits of improving the quality of the space.

But we don't always see that realized in design and performance.

And that's because there seems to be a disconnect between those who get the benefit for the quality of the space and those building it or procuring it. Quite often, you have a property division who are being held to account on the cost per square meter of development. They can see the benefit of going for higher wellness standards. But they're not being judged on that performance. And therefore, ultimately they don't go down that route.

We need to see more joined-up thinking where we're looking at the operational costs, not just of the building, but the people inside the building, the whole organization and bringing that to the forefront.

Where we're doing speculative lighting designs, we're working with developers. The problem is they don't see the benefit of that return on investment. The occupier sees the benefit in terms of the improved productivity, improved performance for the employees. And there isn't the incentive incentive for them to go down the route of designing for more wellness.

There's obviously marketing potential of selling a WELL-enabled building or WELL certified building, but it's not fully realized in design and quite often gets valued-engineered out. Over the last six years, we've, we've definitely seen huge interest in well-being and designing for wellness. But it's really not driven through to the design process.

And there seems to be this disconnect between the people who benefit and the people paying for the cost of construction and they need to be brought together in order to close the loop.

What's been interesting over the last couple of years has been the rise of net zero carbon and the climate emergency.

And to be honest, we don't see very much competing in terms of how good-quality buildings can be low energy: most requirements in the WELL building standard can be met using low energy solutions. And lighting's a typical example. We need to focus on access to natural daylight, which is low energy and best in terms of wellbeing.

So we don't have to think it's either a healthy building or low carbon or low energy building. The key is getting them to work in tandem together.

David Geddes:

We've seen many projects fail at the junction between specification and procurement. And if we are going to build back better and ultimately benefit the project and the client, we've got to better understand the process of selection.

The traditional route includes a client, architectural design team, internal contractor, then a sub-contractor or a wholesaler, and then a manufacturer. It was never quite clear who's keeping control of that.

I'm not sure everyone in the chain understands the solution and the knowledge you need to have in order to offer these solutions. So through frustration, we changed the way we work. We sit directly with the client as their expert representative, We identify what the client wants to achieve in their project.

For a new build, we look to how they want to run the building - is it an investment? If it's retrofit, we'll look at what's actually feasible. So all of that comes under a feasibility study. Once we understand the client's needs, we sit down with the manufacturers and work out what is possible. And then we take back a costed solution, which includes an installation price. That's a pretty good guide.

The client understands we've achieved all of their important requirements. That is then signed off - the specification is sealed.

At that point, we engage with their team to go through the traditional route: We don't underestimate the importance of all the people in this chain and the value they bring to deliver the project.

But through our process, we bring clarity to the design at the outset. And if there is going to be a change, it might be from financial, from lead times, from a performance perspective. But if there's going to be a change, that change is assessed by us. And we sit down with the client so they can see what ramifications that will have on the project. It might be really beneficial or not. But whatever the change is, nobody can make that change without our rubber stamp.

So we are a technology led business. We understand the strengths and the weaknesses in a solution: for example, the difference between the various wireless technologies wireless technologies and why one should be used over another. From the placement of the chip onto the led board, the sub board, the driver the forward current and thermal heat sinks and optics. So we really don't leave an awful lot to be discovered in the future. We do it all at the feasibility stage. We believe that we future proof the sites because of that.

But we de-risk the project for the client because we look at an end to end solution. We strongly believe as a company that strong specifications deliver a better project.

Florence Lam:

Lighting is ubiquitous within the built environment, creating safer cities after dark illuminating workplaces and lighting our homes, wherever people are, light exists.

As design professionals, we carry huge responsibility on the designs we create, specification decisions we make and project installations we deliver for people, place and planet. My response to the provocations on change is threefold. First design for humanity. Second decarbonization and third adoption of circular principles.

So, first of all, design for humanity: less is more. The industry should demand design that values the aesthetics, the quality, longevity, human health, and safety material impact of the lighting systems, the energy efficiency, optimal maintenance, the reuse and retrofit mechanism, with recycling being the last resort.

In short, as an industry, as a society, we can no longer afford poor design.

The second point about de-carbonization is that it's time to focus on embodied carbon. On the one hand I advocate that embodied carbon should be regulated, in a similar way to how regulations on eco design and energy labeling are reducing operational energy. But on the other hand, we can't wait for accurate and comprehensive measurement or regulation before taking action.

So what are the obvious quick wins available to us today? At the recent COP26, Arup announced our commitment to measure whole life carbon for all of our building designs from April, 2022. This means we are committing every one of our designers and engineers to establish and gather good data about the carbon embodied within all our designs, including lighting. So to enable us to radically improve our designs as well as how we specify to reduce embodied carbon.

Some of you will have heard of the Luminaire Broker which is a tool that we are using to help accelerate the change: this is potentially a key to unlock and incentivise the industry for change.

And the third point I want to make is on the circular economy. The transition to a circular economy has been highlighted as a necessity to achieve a zero carbon economy. We have this desirable and feasible hypothesis that the lighting industry can expand into recovering light: luminaires, materials and lighting

components from buildings and feeding back into the lighting supply. But to scale the circular principles in the mass market, it needs a viable business model.

A significant barrier for reuse is the associated risk. How risks are perceived, shared and resolved will rely on your relationships across the value chain, beyond the lighting sector and the circular principles. Viewing existing buildings as material banks is expected to shift the onus of ownership of existing material assets to new clients, including lighting manufacturers, suppliers, asset owners, and insurers. This means the role of design will need to evolve as the golden thread through circular lighting and whole life carbon costing..

Mark Ridler:

It's important to consider product in the context of the project cycle.

We have our hands on multiple levers and some of them have been mentioned today: daylight and then intelligent interpretation of code rather than a slavish engineering approach.

Disaggregating product from buildings rather than integrating them so that they can be removed and recycled and reused. And indeed of course, product specifications. But only when working with others is any of this of any significance. So for instance, if we agree to dis-aggregate a product within a project, that is going to have an aesthetic impact on the project, which we're going to have to get our co-designers and clients to buy into.

They need to understand why we're proposing something. We need to take them on that journey and we need to get their buy-in. It's more significant when we come out of the design stage and actually start building and operating these things.

So for instance, contractors: If they don't build what we design, then what we design is really of very little value to anyone. And it certainly won't achieve the sustainability targets we have. But to do that, the contractors need to be given an even chance of actually achieving what the targets are.

So we need our clients to engage with contracts in a different way. You need to understand what the specification or design is really doing rather than compliance and cost. And we need to help them as designers, but we also need

willingness in terms of the contractors, where we need proper contract governance, so that the race to the bottom isn't the sign of success any more.

Operationally, I think this is an even more difficult one because even if we've got to the fantastic position where we designed sustainable designs, which specifies the same product, it's been bought, it's been installed. But if the operators of the building are just throwing that into landfill, it's again of no value.

And that is even a challenge for our clients. Because there is this divide, which has already been talked about between CapEx and OpEx. There is a big cultural divide - something we really need to work together collaboratively to try and solve.

I am also wearing the Green Light Alliance 'hat'.

As a designer and as a member of the lighting community, one of the most important things we can do is talk to our clients, to our contractor partners, to the people that operate our projects, with manufacturers and with academia which is why networking organisations like the Green Light Alliance and seminars like this are so important.

Talking is good - but does it achieve anything?

I would point to TM 66, which is the new circular economy standard. A document owned by the SLL, but born out of profound engagement: halfway through they rescoped what their project was because they engaged with others in the value chain.

So collaboration and talking has an impact. It really can make a change. So let's do more of that.

DO WE NEED MORE CONSULTANTS?

John Bullock:

Do we have enough chairs around the project table? Should there be more chairs with different people? Who truly represents the client at a project meeting who might understand everything that we've been talking about? That client is not there. And so we end up with project meetings, being driven by project

managers and contractors. Do we need a new type of consultant, like a new type of quantity surveyor - except we're not looking at money, we're looking at different types of quantities, environmental quantities, health, and wellbeing quantities.

Simon Wyatt:

You say the client's not there. The client is not always known. If you build in a building for an end-user, there may be a client who is present. If it's a speculative building, there isn't the end-users or client present at that point. And even where there is a client is normally the property wing of that client.

So if you're working with a big corporate, you won't be talking to their people that are going to be operating the building or using the building. You were talking to a development arm of that organization who are building.

So there generally isn't someone with a vested interest in the performance of the space around the table.

There are more and more projects now that have sustainability champions. So in my team, we originally would be doing small sustainability commissions over the last 20 years. Now we're more integrated into design team and project teams involved in setting the brief in the early stages. And part of that brief will be the wellbeing piece- things like the energy performance, the circular economy strategy, the wellbeing and those things.

And those things are listed out as part of the sustainability strategy in terms of key performance indicators and indicators. And those become red lines, which the design team needs to work towards.

I'd say you don't need the client around the table. But having the client is always better. But I think as long as you have clear performance requirements, and those are red lines, you can achieve the same outcomes, but we need to be clear what those performance requirements are.

And for most schemes there, isn't a requirement for lighting. If we can put the lighting performance, as we were talking about earlier, in terms of the energy budget, the carbon budget, also the end of life, circular economy, and have a requirement in terms of the wellbeing requirements as well. Then it's much easier to make sure that that's maintained by the project team as they go through things by value engineering.

Mark Ridler:

Not all of it is quantitative; we also need to consider qualitative aspects. That's why you need the client at the table, so that they need to understand quality. If it just comes down to numbers, you lose a massive amount.

Shelley James:

Comment from guest: Some clients are already reluctant to pay for lighting designer. So adding another consultant with associated fee seems like a non-starter.

Phil Marsden:

Perhaps I can give a client's perspective on this. We don't own the buildings that we build. So there's a level of complexity there: we don't necessarily know who that end user is going to be.

And you may say some developer traders don't necessarily have a vested interest in how buildings perform after it's been sold, but that's not the case to be fair with most responsible developer traders, including Muse.

And actually there's a real commercial approach to building buildings that perform very well because they will likely sell better and let better so even if you take the responsibility aspect, there's a commercial angle there. So as a client, we'd always be at the table.

We would take part in every single design team meeting. One of the key roles we've recently started to appoint is a sustainability consultant. They add that wider holistic overview of the whole project who looks after the whole sustainability piece. And that's been really, really valuable for us. In terms of lighting designers, we would use specialist designers if we got genuine value for that process.

And I think this might be a bit controversial, but historically I, I don't think we have. I honestly couldn't say that from the projects I've worked on, where we've appointed a specific lighting designer, we've got into those really good discussions about overall energy usage and performance and whole life cost and carbon.

So there isn't a reluctance from us to add another line into the appraisals to cover a specific role if it's needed. But there's got to be a value and maybe we just need to use different principles. We would certainly be up for thoughts about quantity surveyors. There is a new aspect to every decision on a project now. You always have the cost-quality-program triangle. Now we've got ESG and that's covering carbon and social value. And we're trying to embed that fourth dimension in every single decision we make.

So, something might cost more, but it's got less carbon and adds value socially, that's a decision factor. Getting that measured and quantified and into that process is really, really important, but quite difficult actually.

Florence Lam:

I think the change needs to be a lot bolder than just adding another consultant to the table. What need to change is the currency, no longer in pounds or euros, but value in carbon. We need to be able to assess value from a sustainable financing point of view.

I remember 10, 15 years ago when we first talked about transitioning to LEDs. to a client, one would need to demonstrate payback to justify the cost, even though it was a good idea. But only when the rental tenancy changed so that if you haven't got the box on LED lighting ticked, you won't let out that office space, no more feasibility studies. The client just asked for LEDs. It changed immediately.

Education is important though. There's something quite fundamental where the value is articulated differently. One of the other speakers was talking about the carbon value, the ESG, those are the kind of new currency that we need to articulate what that really means.

We were talking about healthy lighting, impact on the planet: The need is to change the way values are assessed rather than adding another consultant to the table.

The designers need to expand and evolve their knowledge and the many ways they articulate their approach on projects, the social value, the value and the impact on the planet, environment, biodiversity, all of these need to play into it. Then it's a more holistic and comprehensive argument for the client to understand and make decisions.

THE PROBLEM OF SPECIFICATION

John Bullock:

If we have quantitative red lines with things that that should be absolutely crucial, who establishes the red lines? The government likes the idea that every light source will be minimum of 120 lumens per watt, but that's just one number.

And as long as you can satisfy that one number, that will meet the energy requirements. And of course we know that's a nonsense because we understand system design. And it's not just about putting in a thousand light fittings that are working at 120 lumens per watt when you only need a hundred, but who deals with the quality?

How do we get that across that position where the gulf seems to be: this is where the quality sits, and this is where the money sits. Is the client investment on the money side? Is it a gulf? Or is there a Venn diagram? Do we get an overlap? If we do have an overlap, who's in the overlap? who has the client's ear? You don't listen to lighting designers because you can't see the point of us. So who tells you what good lighting is?

Phil Marsden:

Normally on a project the lighting is designed by M and E consultants who obviously have a knowledge of that. But I don't think they'd say they were experts in lighting design. I'd say it does a job.

John Bullock:

So if the standards shifted, whether they get worse or get better, they would be the criteria that they would be working to. So perhaps the influence that we need to be talking about is 'who controls the quality of the specification?'

David Geddes:

Just as nobody in this webinar would design an air source heat pump without a full M and E design, because they don't believe they can achieve that job for

themselves. But if I've heard it once, we've all heard a million times - 'I've got a mate who does lighting design!' That's why we sit with the clients.

I don't think lighting designers are given the respect that they should be given for the role that they do. We've been to a big site in London a couple of months ago. They've designed the lighting down to the new guidelines. So it just gets over the bar. Brilliant.

The new tenant is a legal company. Their lighting requirements are a minimum of 500 Lux because they're reading technical documents all day. So they're now getting the owner of that building to pull out all the lighting and put in a new set. Nobody listened to them.

So many times we are involved in a project because there's been a push on budget and the easiest thing is to re-engineer it or go and get something dreadful. The client then has to pick up the pieces over time by employing someone.

There is a cost layer, but there's value add to it. Sometimes we design from end to end, sometimes it might be a plug and play solution. We're taking out cabling solutions, we're putting in wireless technology. So actually we take out cost from the contractor. We give the client a better longer term life cycle product that's more sustainable. A lot of the time, the lighting can be pushed around quite a lot. It's quite often a small element of the build.

And I just think it needs to be given its place. There are lots of LED panels out there that we've all seen. They might have a warranty of five years, but they're not usable lights for five years. It's been signed off. Brilliant. But in two, three years time, it's not fit for purpose.

And if we're talking about embedded carbon, we're talking about lifecycle, surely a product that can be retrofitted with new LED solutions or drivers that commercially last a hundred thousand hours. So we're not just pulling them out and throwing them in the ground. I think that's a more interesting conversation. And I think that there is then a real value add.

We were sitting with a senior client a couple of weeks ago. They've just had all the students come back - over 6,000 across the UK. And all the students were talking about was that this was the most 'eco' building. This was BREEAM excellent when it was refurbished five years ago and they couldn't get enough of it.

And it was really interesting. We've done a redesign for them on all the lighting. All we've done is put retrofit gear trays in - with new emergency lighting and new wiring and everything else. But, ultimately we've kept everything we could because that was sustainable.

So I would argue that if anybody's not sure about what a lighting designer or somebody that's going to hold the specifications strong, I would urge them to get someone along. And then they might just see why I, and a number of people think that there's a value add to have us in the room.

Graham Edgell:

From a contractor's point of view, I think all we require is clarity. And the fact that every time there is a change, that adds risk to us because it adds cost. And so it's, it's clarity for us. And I think that the currency. I support Florence 100% that there is another currency at the table now, apart from the pound note.

And I think it's about doing the right thing at the right time. So it's clarity, for us. Stick with it. We can only trust the design community to design and raise their game to the sustainable standard. But once they've done that, we're more than happy not to devalue engineer. because that is what happens in truth if the red line isn't held. And that needs to be based on an environmental standard.

From a contractor's point of view, I've got to be honest, we actually get down to the CapEx / OpEX decision, which says to us - we've already been told that it is X, so we will provide X. We probably haven't considered all of the ESG and wellbeing elements early enough. But we make it work because cash will come into the equation and the M and E contractor is under the same financial pressure.

Florence Lam:

Besides the CapEx and OpEx, we may need to be talking at the investors level. So imagine developers making an investment into a development, they probably don't have all the cash they need. They would look for investors, pension funds, et cetera. And those are now putting pressure on ESG compliance for investment funding..

It's not just established where the bottom baseline is, but it's how one can actually improve from the baseline. Not just what a normal spec office building expectation is, but how you can exceed that.

The better ones are probably more likely to get funding. This is what I meant by currency that reflects the different requirements expected of good lighting, eg good design that has longevity. Longevity will become the requirement rather than accepting a poor quality installation put in as Cat A and then into waste straight away, because fit-out would require something different to be specified.

Hopefully those practices are no longer acceptable.

Gayathri Unnikrishnan:

I just want to continue with thread that Florence started: ESG is a major driver in investment decisions. And how developers get the investments, SDG's and mapping those SDG's is another driver that we have seen.

There's one more group that we need to bring to the table. And those are the consumers.

There's increasing awareness among people about the quality of their spaces. It's increasing at a much higher rate than we ever thought possible before. And there are millennials and millennials have received a lot of flack, but Gen Z is also coming to the workforce and they are not here to negotiate.

So we need to understand that we are going to have to make a stand and make our presence known when we make those decisions. And lighting designers are not at the table. Yes. But they are important. And that awareness is growing as well. It's much better than it was five years ago.

So we are on an upward trajectory trajectory here. The same with the acoustic designers. And yes, the HVAC people are at the table and have been at the table for a while. But lighting designers are finding their way to the table too. It's so much better. Five years ago, I was receiving comments that it's too expensive to do daylight modelling. And I would ask - 'so how much are you paying for that sofa that you have in your lobby?'

But now that's not even a question. Daylight modelling and good daylight is now a given in buildings.

So there's a lot that we can do with what we already have. What we need to understand is: Who's got the capital? who's got the money? and what is driving the decisions around that?

THE NEED FOR DATA

John Bullock:

So who's writing these briefs? There is no doubt that we're moving forward. At the moment we are reliant upon an enlightened client body to pull it forward. But I don't see where the push is.

So one of the things that has been notoriously poor is the quality of technical specification within a lighting spec. The idea that you can swap out one fitting for another, and nobody notices the difference because the spec hasn't been altered. But clearly the spec has been changed because what got swapped out was better than what actually got installed.

Who is actually creating that quality brief that the client can sign off on, that the designers can work to - and people like Graham can say, 'we know where we stand?'

Mark Ridler:

When we come to the table the first thing we ask is what's the budget? that's Cap Ex budget, but increasingly it will be about circularity and carbon. We also ask which sustainability standards are you going for? BREEAM, or the WELL or whichever. Because all of those codify the design. And the designer's role is about the complex balance between competing demands upon the design.

It's very much our role to define that and interpret it in terms of quality so that clients and designers can make quality decisions down the line rather than it only being about cost.

So we want to reduce the cost of this element. Fine. You can do it in these ways. These are the impacts on the design and the users. Because that's the other thing that we do when we're writing that brief: we do it from the perspective of those people that are going to use, inhabit and encounter our designs.

We are their voice in the room at the beginning of the project. We see ourselves as the defenders of those people all the way through the process.

Florence Lam:

As I mentioned earlier, that poor design should have no place anymore. But the same goes for poor specifications. That is a very critical part: how lighting designers translate their designs into something that can be handed over to the contractors, the manufacturers, to the installers, to actually realize the design itself - the integrity of the specifications.

That's always been a challenge.

How can we make sure the integrity stays all the way to the end of the project, but also beyond, as well from a maintenance and reuse retrofit perspective? I think data has a huge role to play. We've been talking about data being the golden thread with BIM.

We hand over the spec data embedded in BIM: to say to the contractors and to the responsible client - hold onto this, this is not going to change.

If at that point, the project is within budget, the spec should just carry forward rather than cut back. The spec data capture not just lighting performance that was originally designed for, but the carbon, where the fixtures are sourced or the circular requirements are all built into the whole design of the building. It's not just one element: changes to any element on the project impact the design integrity.

So that transparency through data is such an important point to make.

Phil Marsden:

What most clients I guess would tend to do in terms of M and E spec is they develop a performance specification. They wouldn't ordinarily go into the minutia of what every single light fitting is.

That's the norm, I think, at the moment. And maybe that then causes problems later on because that then opens up what actually goes in that building in terms of light fittings for the contractor and supply chain. I think the reasons for that probably comes down to procurement.

And I think that there's a nervousness, particularly around M and E, where if you start specifying very specific products and manufacturers, you then get beholden to cost uplifts and that is a problem in the market. If a supplier is seeing their name in a specification, guess what, the cost goes up. There's definitely a nervousness around that.

When we come to the table and we get a client brief and then we start working on the specifications, the first thing we say is: what's the budget?

I bet if you asked 95% of quantity surveyors what the budget is for a particular light fitting they would have no idea. They'd be able to tell you we've got a certain budget per square meter for the M and E systems. But they will not be able to break that down into how much that there is for a specific lighting fitting on a scheme.

And actually there may be a skills gap there in terms of the quantity, surveying advice, particularly on M and E including lighting.

It's always a bit of a dark art in terms of costing. And so maybe that's something we need to think about.

COST IMPLICATIONS OF NAMING A SUPPLIER

Graham Edgell:

So from my point of view, in procurement, once the name is in the frame, we do see the elevation in costs.

Mark Ridler:

One of the things we do is to run many tenders in the project on budgets. First of all, we can back up from our previous experience with projects and give a pound per square meter for a similar type of project. So you can benchmark your quality aspiration and sustainable aspiration, all the various other things to a previously delivered project.

Particularly at RIBA stage three, we will market test specifications. So you as a build construction client team have something to nail them to rather than just a Christmas present.

Florence Lam:

The Luminaire Broker is a specification web platform. The designers, the architects, the specifiers will post the luminaire specification requirement on an open platform where any manufacturers will be notified, look up what has been specified and match that with any particular product that best matches the specification. The decisions are tracked and traced. The reason why we want to do that is to make sure that the choice of manufacturers are purely performance based. This also helps our designers to make sure the market tests we conduct are truly market tested. Particularly when we talk about circular, locally sourced materials, how they transport materials, how they are made. We are integrating all those circularity features into this tool so that how decisions are made is as transparent as it can be and we can carry the learning forward.

It's just taking steps to say we are committed not just to talking, beyond educating, but actually taking actions and learning through doing to realize that we constantly need to know more of what's available in a market in real time and how we could do better.

Phil Marsden:

There's clearly a place for good quality lighting designers in the design process.

John Bullock:

The larger companies may be able to do this but the smaller companies probably don't have the resources. Should we be expecting to get more information and more support from our professional organizations to enable us to do that?

Mark Ridler:

I think that will be a centralized top-down solution, which probably wouldn't get us where we need to be. I think where professional organizations can really add value is to be a platform for the meeting of different minds.

Here I speak for the Green Light Alliance, rather than the SLL because the Green Light Alliance is a place where people can share their frustrations and solutions. And that's where you'll get evolution of process.

And I don't think it's a small practice problem.

Yes there maybe some high-tech solutions, which big companies will bring to big projects, but this is about establishing a brief that is user-centric, and is defined in terms of budget, and is responsible in terms of sustainability.

There are small companies that are very active in this field of providing, and doing great design. I don't think it's a problem that only big organisations can handle.

Graham Edgell:

Obviously people on this call live in a different world to me. But Florence made it clear earlier that we need data. We are acknowledged as a contractor and we've got an enlightened developer in our group but the absence of data really hurts us. We can't defend the red line because there's not the energy certification's not validated. It's not clear how many products are validated.

So you can get wrapped up in lighting design all you like, but the reality is at the coalface, the M and E contractor is driving the market. And the fact that you've named a manufacturer product elevates the price.

And then we go through this rigmarole of trying to bring it back down. When all we want is clarity that says we can meet our sustainability targets. So we do need the data. Is anybody measuring the fact that the light products came from the other side of the world? Not at the moment.

Florence Lam:

Measuring data is important, to help the rest of the value chain to de-risk as well, because there will be a lot of uncertainty and ambiguity to come with change. Who wants to be the first one to jump? Data is the driver of a change right from the beginning. It's not just about climate change. There are some immediate issues about shortage of resources causing delay challenges to import into the UK. Delay in construction will hit profit. These are all reasons why the

industry needs to work much, much closer to resolve the issue differently rather than the old way of passing the baton.

Having that visibility and transparency much earlier on - what is required on what project type, where, so that industry and the value chain, can better respond together more timely and effectively.

Simon Wyatt:

So one of the things which has come out of this call and discussion is obviously the role of the lighting designer. And I think they can and should be the best person to advise. But in my experience in sustainability over the last 10 years, the consistency of the data that's provided by lighting designers is not always the same in terms of what they're able to provide in terms of energy. Carbon and circularity data should be at the forefront.

The guidance from the SLL is significantly ahead of most other MEP systems. So the CIBSE circular economy guide that came out recently is only on lighting. The rest of the industry is way behind.

There should be this data coming forward from lighting designers, but on projects historically. it's not always forthcoming in terms of operational energy. Lighting designers refer to the MEP and then don't provide the information on embodied carbon.

They're not able to provide the same level of data that you'd get from a structural engineer or an architect. So I think lighting designer is ahead of a lot of the rest of the industry. But I just don't think there's the full consistency.

So I think the guidance is there. The members need to be providing that high level of advice and guidance to clients so that when a person like myself as a sustainability consultant is asking for that information, that information is readily available and is useful for the clients rather than deferring to other design team members.

Shelley James:

Post-occupancy and how buildings really work and whether they deliver on their promises is something else that we need to be a lot more honest about.

John Bullock:

10 years ago, when I was talking about sustainability, the only comment you got back from the audience was ‘Who cares John? Why should we bother?’

Now manufacturers are telling me that they're getting involved with environmental product declarations because they want to be on a tender document and they can't get on that tender unless they've got EPD's. That's a hell of a change. But manufacturers are late to the party.

Shelley James:

The market is designed to ship boxes, so it's hard to sell a long term solution because they're always going to bring out the next ‘new and improved’ thing,

CONCLUDING REMARKS

Gayathri Unnikrishnan:

I have to ask: why are we changing our fixtures? Why are we reinventing the wheel? Why are we not using what we already have? That is the most sustainable way forward. Is there a reason for us to change out everything and put the newest, most coolest circadian lighting system? No, we don't need the tuneable lighting for circadian. We need windows.

Lighting designers and the lighting industry has so much power, so much more power than I hear in this call based on my work with all the other concepts.

And WELL lighting is the most united and the most progressive and futuristic. And we can come together and really make a change.

And it's not like ‘who's doing this and who's doing what’. Everybody knows what we need to do for humans and the environment: humans are the centre of the circular economy, we all know it. Why can't we just do it?

The lighting industry is leading the way for innovation in health and wellbeing in the built environment. We need to learn to use the technology, resources and tools that are already available to make changes within our unique circles of control.

Graham Edgell:

We've still got a long way to go in terms of making the collaboration effective. But I'm heartened by the strong message from all the speakers that there is a real positive future.

That leadership from the lighting sector will help the other parts and the sectors and the categories we're involved in across the trade. So it's increased collaboration.

This call has made a difference already, and if we can not do it as a one-off and progress it, maybe that's the way forward.

Phil Marsden:

We want to create the best quality buildings and places we can, the most sustainable, vibrant places. And we have a hell of a lot to think about when we're doing that. And if we can work with designers, manufacturers of particular elements, that enable us to do that, make our lives easier, then we're all ears, you know, there's absolutely no reluctance to bring specialists in.

It's been really positive to hear the sort of expertise that is out there. I just encourage anyone who wants to have a chat with us: we're always looking for advice and assistance, particularly from innovative consultants with a passion for sustainability. I think it's been really positive in that respect. Really good discussion. Thank you.

Simon Wyatt:

I think there's a lot of positives. One of the hats I wear is as chair of the CIBSE knowledge generation panel.

And the lighting community is by far the most active community within CIBSE, producing the most information and most aware of what's going on with circular economy and energy. And I think the opportunity to get your voice heard around the table is definitely there. Having those facts and data to support what you're saying and provide that information to clients like Phil would be hugely valuable.

David Geddes:

I think all of these things are fairly easily resolved. It's great to keep the conversation going, to understand more about what barriers people see so we can maybe offer a challenge to that and offer some joined up thinking,

Florence Lam:

What we can be reasonably certain about is that using less material, designing more effective and healthier lighting, reusable and last longer are key to supporting the transition using circular principles to transition to zero carbon economy. While we continue to design the new shiny beautiful buildings and light fixtures, we need to think about the long term and how we can implement this golden thread to enable a more joined up industry wide approach towards something that will really last with good quality.

To do that, we need an open data framework that draws on all the knowledge and experience around this table, to identify the unknown risks and research gaps for the reuse potential of fixtures and materials down to the lighting components. This framework could possibly be used as a tool during the design and consultation process in the future, to treat all the existing lighting stocks as 'healthy light banks' that perhaps the industry can draw on in the future.

That may be a dream, but let's see!

Mark Ridler:

I'm going to finish by reiterating what we said at the beginning, which is that collaboration is key. Data and collaboration is not as easy as it seems. If it was open and available, then it would be perfectly transparent and audit-able and reliable. So I think that collaboration in data availability would be great. But more immediately, I would welcome everyone to join in the Green Light Alliance particularly the contractors and developers here because it's for everyone.

The lighting is a small part of your world but lighting is leading the way: we may be able to help you solve other problems like concrete structure and the other, really, really big number players in the sustainable construction debate.

Thank you!

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Age of Light Innovations

shelley@ageoflightinnovations.com