

Drivers for Change Panel debate opening remarks summary

(in order of appearance)

9 December 2021 via zoom

Hosted by Dr Shelley James

chaired by John Bullock

Gayathri Unnikrishnan, WELL

My team and I pore through and 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. People like yourself.

We evolved around the cycles of the sun, but our spaces have electric light, and 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 light exposure at the wrong time can disrupt our sleep and cause a ton of other issues, including cardiovascular diseases, depression, and obesity. There are decades of studies linking 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 can't have 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 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 people who will use the buildings that you work on?

Graham Edgell, Morgan Sindall

For every person in the world, we generate 1.26 tonnes of CO2. You can probably pick holes in some of my numbers, but the built environment is responsible for 45% of the carbon emissions of which 27% of that is in domestic properties. And 18% is in the rest of the things that we do. That is a massive baseline to start from.

We have an absence of data and real measurable standards in terms of validation and accreditation and consistency.

And when you're in a CapEx driven arena, like we are, with low margins, it becomes quite a challenge to get all of us together to collaborate. I think our industry is one of the very best to do that. But we need now to rally behind the flag.

Moving forward, we look at lighting and the way that works within the sustainable agenda, there isn't a platform for the circular economy. And where there is, it's inconsistent. And so we, as a contractor, we can't even bring in the wellbeing/ people factor because we're still worrying about the CapEx. The intent is there. But we can't find the consistent solution to move it forward. So we move into devalue engineering the project to get the CapEx down, to try and find ways to solve it at the back end. But it's often too late.

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

The next thing on the agenda for us is to drive up the collaboration, working together, finding solutions and sharing the risk.

Phil Marsden, Muse Developments

We've got a really strong sustainability strategy based on five key objectives reducing carbon improving biodiversity health, 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, really focusing, particularly on carbon and energy efficiency if we're going to make progress in tackling climate change. 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 we can for communities and people who work in our offices, live in our homes, spend time in our leisure spaces, our outdoor spaces.

And when you look at our five key objectives in our sustainability strategy, I think with the exception of bio-diversity, 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 and thought I think that's really needed. I think if you went and looked at most new open plan offices or residential developments, you'd probably see very similar light fittings with very similar light levels and the same sort of tones and colours used.

It's fair to say, probably along with most other elements of construction there remains that absolute focus on capital cost, but not so much whole life cost. If we're really going to start moving forward, we need to involve the carbon cost and overarching social value into advice and decision-making on lighting as well.

In terms of procurement, a regular pattern is that we'll get a design done for lighting that gets priced, often, the scheme is coming over budget and the contractor and subcontractors come up with a new design, a heavily reduced price for lighting.

That's quite often the case. I find it quite hard to understand actually, how sub-contractors can come up with a solution for lighting scheme that looks the same, performs the same, costs significantly less. There does seem to be from a client's perspective, a bit of dark art involved in the buying games and procurement chains around lighting that's 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, gain a full understanding of capital, lifecycle cost, carbon cost alongside energy use and performance.

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, but there's challenges which has an industry we need to come together to look to address in all aspects as well as lighting.

Simon Wyatt, Cundall

We regularly go into organizations 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 are keen, can see the benefits. We know that 90% of the cost to most organizations is their staff.

They understand that 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 of 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 see the benefit in terms of the improved productivity, improved performance at the employees. And there isn't the incentive for them to go down the route of designing for more wellness.

Over the last six years 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 that 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 circle the loop. And 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 healthy buildings: they can be low energy with most requirements in the WELL building standard can be met using low energy solutions. And lighting's a typical example. We just need to focus on access to natural daylight, which is low energy and the best in terms of health and 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 both to work in tandem together. But again, it's problematic between the disconnect between the end-users and the people actually specify, and procuring the system.

David Geddes, C02 Target

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.

I'm not sure everyone in the chain understands the solution and the knowledge that you need to have in order to offer these solutions. We sit directly with the client as the expert wing of their company. We identify what the client wants to achieve in their project. Is it an investment? Do they want to live with the building for the lowest life cycle cost, whatever that approach might be. If it's retrofit, we'll look at what's actually feasible to retrofit in the building. So all of that comes under a feasibility study. We then sit down with the manufacturers and we work out with them what is possible. And then we take back a costed solution, which includes an installation price. That's a pretty good guide.

And the client then understands that we've achieved all of their important elements, that is then signed off from the specifications is then met, it's sealed. At that point, we then engaged with their team to go through the traditional route. And we don't underestimate the importance of all the people in this chain and the importance that they bring to deliver the process.

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 through financial. It could be through lead times. It could be through a performance specification, but if there's going to be a change, that change is assessed by us. And we sit down with the client to let them see what ramifications that will have the project.

It might be really beneficial. It might not be, but whatever the change is, nobody can make that change without our rubber stamp. We strongly believe that strong specifications deliver a better project.

Florence Lam, Arup

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.

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 retrofit mechanism, and also recycle with recycle being the last resort.

In short, the industry, as a society, we should no longer afford poor design.

It's time to focus on embodied carbon. On the one hand I will advocate embodied carbon should be regulated in a similar way 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 as available to us today?

At the recent COP 26, 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 would have heard of the Luminaire broker, which is a tool that we are using to help accelerating a change. Potentially a key, to unlock and incentivize the industry for change.

The transition to a circular economy has been highlighted as a necessity to achieve 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.

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shelley@ageoflightinnovations.com

But to scale the circle of principles in 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 the relationships across the value chain, beyond 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. So this means the role of design will need to evolve as the golden thread through circular lighting, whole life carbon.

Mark Ridler, BDP / Green Light Alliance

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 the slavish engineering approach.

Dis- aggregating 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.

If they don't build what we design, then what we design is really very little value to anyone.

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 just rather than compliance and cost.

And we need to help them as designers, but we also need willingness in terms of the contractors and we need proper contract governance, so that the race to the bottom isn't the sign of success.

Even if we've got to the fantastic position where we designed sustainable designs, if the operators of the building are then just throwing that way in landfill, it's again of no value.

And that is even a challenge for our clients because it's this divide between CapEx and OpEx and there is a big cultural divide, something that we really need to work together collaboratively to solve.

Talking is good, but does it do anything do we achieve anything? I would point to the existence and of TM 66, which is the new circular economy standard, which the Society of Light and Lighting have just published. Very much a document owned by the SLL. But it was born out of profound engagement and they halfway through rescoped what their project was because they engaged.

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