

Sustainability and the Stirling Prize shortlist

Simon Sturgis

Last July I was discussing with Ben Derbyshire, then RIBA president-elect, ways to promote sustainable thinking more directly among architects. Sustainability is typically treated as a 'bolt-on' or box-ticking exercise, and I was keen for environmental considerations to be treated like gravity or sunlight: that is, fundamental to any design process. Ben suggested joining the Stirling Prize jury as a non-voting sustainability adviser. This was a great idea, as sustainability has never been an obvious feature of Stirling Prize judging, and therefore this would be something of a first. So, in late September I joined the jury as it visited all six finalists over three days.

My starting point was the assumption that all six would automatically meet currently defined sustainability standards. Although useful, such standards do not necessarily result in a truly sustainable building nor enable meaningful comparisons between finalists. The criteria that I decided on were essentially very simple. Firstly, how each building represents an efficient and optimal use of resources to achieve the desired architectural outcome and, secondly, the likely use of resources over the future life of each building. By resources I mean both the energy and the materials that a building consumes during construction and over its expected life. Considered together, this enables a proper assessment of a building's true carbon footprint. It is worth noting that, typically for new buildings, more than half of the lifetime footprint is material-related. There were, of course, other important factors, such as social and cultural sustainability, that came into consideration, and could be seen as possible trade-offs against resource efficiency. Biodiversity and renewable energy sources were evident in the majority of schemes, but not as game-changing features.

As a base, therefore, I was interested in the interrelationship between initial material and design choices against the long-term performance of both energy and materials. For example, a durable choice (brick, for instance) may have high initial carbon costs but low lifetime costs. One can also compare the environmental benefits of additional insulation against its environmental costs. This long-term thinking was evident, for example, at Hastings Pier, which used recovered pier decking as cladding. The architect stated that 'there is no closure between constructing and maintaining', and in a sense this is true of all buildings. With every project, we discussed what it would be like after 50 years. Barrett's Grove is in concept highly sustainable. It has a CLT structure (low carbon), clad with brick (high carbon but very durable), and impressive insulation, so all good. However, the design feature of vertical gaps in the brickwork (beautiful) means the waterproofing layer is visible and exposed. The same basic detail is used for the roof. How long will this last, and does it point to future environmental costs? Juergen Teller's photography

studio is very low in day-to-day energy use, which is excellent. However, its extensive use of concrete means it is also very high in embodied carbon (notwithstanding the 15 per cent cement replacement in the mix).

Three of the six finalists have timber interiors, with much natural brick and concrete also in evidence. I am a supporter of robust, natural finishes, as they avoid a finishing layer, with the additional resource implications. However, the future life of these choices should be considered. CLT-finished walls, floors and ceilings are impressive today but what happens over time as the timber darkens, and suffers wear and tear?

The issues of cultural and social sustainability were also important. Four of the six had social or cultural functions. The Command of the Oceans and Hastings Pier rely on public funding and/or public visits. Both need to operate efficiently with minimum cost over many years, and the success of the buildings is therefore reliant on economic sustainability. Both Glasgow City campus and the British Museum extension are huge carbon investments that need to function as efficiently as possible from both energy use and fabric durability perspectives. The museum extension is, per square metre, a very carbon-expensive building, with five floors below ground and sophisticated servicing requirements. However, these high environmental costs should arguably be set against the very significant cultural benefits provided. Both buildings had exposed services, facilitating adaptation.

The judges were uniformly interested in the issues I describe above and the relationship between initial resource use and overall lifetime costs. I will be summarising the sustainability issues at the start of the final judging so I hope this will contribute to their thinking. All the finalists meet current sustainability standards with varying degrees of success. However, only a couple can be seen as truly sustainable when looked at from a more holistic view of resource efficiency in the context of social and cultural impacts. Legislation and standards are still behind the curve when it comes to understanding and assessing this.

Embedding considerations of sustainability into architectural design is still evolving. This initiative is an important milestone, and one that I hope endures. Architecture should reflect and enlighten the society in which it sits. The Paris Agreement to mitigate climate change may seem remote but the government's commitments will affect us all over the coming years. Architects need to better understand the materials they specify and what happens to their buildings over time, from both an energy and fabric perspective.

Finally I suggest that good architecture is inherently sustainable as society retains such buildings. Bad architecture is a waste of resources. *Simon Sturgis is author of Targeting Zero: Embodied and Whole Life Carbon Explained, published by RIBA Publications.*