



DEMONSTRATION AND LEARNING

By **James Nicholls**, Managing Partner
Stephen George + Partners



Social responsibility is an integral discipline within Stephen George + Partners (SGP) and we are committed to delivering sustainability and social value in both our business operations and the schemes that we design and deliver for our clients. Our Social Responsibility Group meets regularly to share ideas and explore opportunities and activities we can develop further, while our **passion for sustainability** has made us want to do all we can to encourage the next generation of architects to be equally as passionate via our various schools' programmes.

However, the actions we take today did not materialise fully formed from day one, and have emerged over time through a continuous process of learning, knowledge share and real-world practice.

Whilst **our interest in sustainable design dates back to the 1970s**, our enthusiasm for sustainability, social value and learning was further stimulated back in 2008 when we received a brief for a Sustainable Construction Training and Research Centre in Dartford, later to become known as SusCon. Our clients, Dartford Borough Council, Prologis and North West Kent College, were keen to win funding

and did so in 2009, with the project jointly funded by the Homes and Communities Agency, the South East of England Development Agency and the Skills Funding Agency via CITB-Construction Skills. The scheme was designed and tendered in April 2010 and completed in 2011.



It was a incredible project to work on; a real labour of love, you might say, which didn't feel laborious at all despite being designed over the Christmas holidays! The fact that it was a joy to work on was partly down to our client's brilliant brief – one that pushed sustainability as a priority and ensured the scheme would be an exemplar facility to demonstrate sustainable building materials, technologies and techniques.

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It allowed us to do things that we would never normally do, such as using three different frame types – steel, concrete and timber – for the three different elements of the scheme and encouraged us to specify different building materials, taking into consideration toxicity, recycled or renewable content, long lifespan and their environmental impact over and above the BRE requirements for 'A' rating. It also allowed us to trial what were then nascent technologies such as 3D design software.

SusCon was awarded a **BREEAM 'Outstanding' rating which, at the time of its completion in 2011, was the highest BREEAM score ever achieved for an education building.**

Much of what was achieved at SusCon would not have happened without the encouragement of our client and their aspirations to reduce embodied energy. Built environment organisations who want to stay ahead of the curve and remain frontrunners in sustainable development and progress towards Net Zero Carbon see demonstration projects as a positive instrument; one that can provide tangible reference points and real-world data on sustainable building and the processes through which it can be implemented. The demonstration project can also provide opportunities for learning and knowledge share on sustainable development in the building sector. This is important because that education and knowledge can be a pivotal enabler to address the net zero challenge.

However, the knowledge gained from demonstration projects can have little influence on the broader built environment sector in isolation. To ensure greater learning and change, evaluation and dissemination of results, both positive and negative, needs to be encouraged. However, studies from Europe⁵ have acknowledged a 'waste of opportunities' and point to a lack of formal dissemination of experience; both internally, from the organisations involved in the demonstration projects, as well as externally, from the demonstration projects to the rest of the building sector.

In this regard, **SusCon was a game-changer. It not only acted as a catalyst for SGP challenging the status quo and looking for more sustainable options for architects, but also provided a template for the dissemination of knowledge and ensuring that a demonstration project can act as a change agent.** We immediately saw the educational value of the project and sought to maximise knowledge, learning and development opportunities in several different ways. For instance, during the construction phase, SGP's Project Architect, Heike Heinzlmann, toured the site with college students, inspiring and educating a future generation of built environment professionals on sustainable building.



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Meanwhile, throughout the design and delivery of SusCon, significant R&D on the project was undertaken by Chris Halligan and Jo Denison, both from our Leeds office. In the spirit of sharing that knowledge and the role we all must play in the push towards Net Zero Carbon, they suggested collating all the information and publishing the lessons learned free of charge in what would eventually become **SGP's Guide to Building Materials and the Environment**.



The Guide is an extensive and independent analysis of building materials and how sustainable they may or may not be. It debunked pre-conceived thoughts on several products along the way and provided guidance on production, use and disposal of materials ranging from the traditional to cutting edge. True to our word, the Guide was made available free of charge and downloadable from the SGP website. As you can imagine, this was met with resoundingly positive feedback and **The Guide went on to win the RIBA President's Award for Practice Based Research.**



The good news is that, some thirteen years' on, we are still sharing that knowledge, with the third edition of The Guide published this year via our website and still free-of-charge. This latest edition has seen almost all the original materials re-assessed. The construction industry has changed significantly in the years since the original was published, with some of the materials that were expected to have a great future failing to make a mark and new materials – and new ways of making old materials – coming into the spotlight.

Equally, the ripple effects from those educational tours we conducted around the SusCon site can still be felt in our practice today. Believing we have a responsibility to educate future generations on sustainability and responsible architecture, we have maintained close relationships with schools, colleges and universities, culminating more recently in our Better Buildings Programme, an open-source and free-to-use website created by SGP to introduce primary school children to sustainability and embodied carbon in building materials through a classroom, teacher-led programme.



In 2022 we delivered **Better Buildings**, alongside class teachers, at schools in London, the Midlands and Leeds. We have shared the programme via the World Wildlife Fund, the Let's Go Zero schools' sustainability programme and Leicester City Council's Sustainable Schools team. The initiative was also shortlisted in the AJ100 Sustainability Initiative of the Year 2023.

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While the push for Net Zero Carbon has gathered momentum over the last few years, a lack of information has often made the process difficult to navigate and conceptualise. The only way to steer a successful course is knowledge. Alongside other built environment leaders, we understand that demonstration and learning present the greatest opportunities for real change in our sector and we will continue to play a part in developing evidence on materials and performance, sharing knowledge on implementation and inspiring future generations to rise to the challenge.

Simon Cox, SVP Head of Development Management at Prologis UK, reflects:

“Sustainability; Net Zero; Climate Change; back in 2008, these were all terms which were just starting to arrive in the common lexicon and be understood by the public. In the 15 years since this guide was produced, the world’s attention has been caught by the importance of mitigating climate change.

In this context, the work which Prologis supported SGP on, at the time of the development of the Sustainable Construction Training and Research Centre in Dartford, was groundbreaking. From the approach that was taken measure carbon emissions in the construction process, to the selection of materials to reduce our footprint and the related materiality guide which resulted, the project has created a lasting legacy which all involved should rightly be proud.

For Prologis, it set in motion a course of action which continues to this day – with a continued and continuous focus on carbon emissions reductions in the construction and operation of the buildings we construct. We’re committed to achieving net zero emission across our scope 1-3 value chain by 2040 – an ambitious target which will require significant focus, innovation and investment.

SGP have contributed a significant amount to our sustainability journey. As much as it takes confidence in your convictions to brief a design team to step outside the perimeters of a “standard” construction, it also takes innovative thinking “outside the box” for a design team to answer that brief. In this regard, I’m grateful to have had SGP as our long-term, valued partner since the beginning.

Our mutual understanding of the ambition and indeed the constraints have allowed us to create of model of continuous improvement, implementing incremental gains to achieve carbon emission reductions.”

The latest edition of SGP’s Guide to Building Materials and the Environment can be downloaded free-of-charge here: <https://www.stephengeorge.co.uk/a-guide-to-building-materials-and-the-environment/>

For further information about SGP’s Better Buildings Programme, please visit: <https://www.stephengeorge.co.uk/social-responsibility/better-buildings-programme/>

[1] Femenías, P., Learning from buildings: A Strategy for Environmental Design – Discussions from a Case Study of the Sustainable Building Project GWL-terrain in Amsterdam. Licentiate thesis. Department of Built Environment and Sustainable Development, Chalmers University of Technology, Göteborg. 2000

[2] Femenías, P., “Accepting the Challenge: Interpretation and Implementation of Sustainable Building in the Swedish and the Dutch Building Sectors”. In Proceedings of Sustainable Building 2002 International Conference, September 23-25 2002. Oslo, Norway. 2000

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<https://www.irbnet.de/daten/iconda/CIB3460.pdf>

[3] Gluch, P. & P. Femenías., "Communicating Sustainable Building: The Image Conveyed by Media". In Ed. Edén . M and Jönsson. Å. MISTRA Sustainable Building: Experiences from a cross-disciplinary research programme. pp 77 –90. Departments of Building Economics and Management/ Built Environment & Sustainable Development. Chalmers University of Technology. Göteborg. 2000

<https://research.chalmers.se/en/publication/117405>

[4] Femenías, P., Demonstration Projects for Sustainable Building: Towards a Strategy for Sustainable Development in the Building Sector based on Swedish and Dutch Experience.. Dissertation. Department of Built Environment and Sustainable Development, Chalmers University of Technology, Göteborg. 2004

https://habiter-autrement.org/01_tendances/contributions-01/Projects-for-Sustainable-Building-thesis_femenias-1.pdf

[5] Demonstration Projects: An Effective Strategy for Sustainable Building Paula Femenías, Doctoral Candidate, Department of Built Environment and Sustainable building, Chalmers University of Technology, S-412 96 Göteborg, Sweden. See section 5.1: 5.1 Deficiencies in contemporary demonstration projects

<https://www.irbnet.de/daten/iconda/CIB2735.pdf>

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