



## **Hard science can convince the hardest noses – just show them the figures**

**Gary Wilburn, Creative Director at HPW Architecture, is convinced that even uninterested developers can be persuaded to adopt a low energy approach to construction – if you forget the flannel and show them the figures.**

HPW Architecture works primarily in the commercial privately funded world, mainly designing retail, leisure and commercial based projects. Inevitably one of our greatest challenges is convincing clients to invest in sustainable and renewable solutions, not least when pay-back can be longer than they would normally consider when undertaking building projects.

Commercial developers often cannot determine at planning and conception what the needs of the actual tenants are going to be, and as a result the market and institutions call for minimum specification and embellishment. On the basis that investors often struggle with the concept of having to achieve current building regulations and the standard levels of air tightness, sustainability is not their main priority!

Return on investment (ROI) is a key contributor to their decision process and as such we have to prove the true value of adopting a low energy solution. As investors often require short-term payback this does not always fit well with the Whole Life Value of a sustainable approach, and the energy savings that can be made over a buildings lifetime. When the investor is the owner and tenant the benefits are easy to sell, though when any direct financial gain is to the tenant (in reduced bills) and there is no immediate advantage to the landlord, the whole life value can be far less attractive.

To try and get past this frustrating situation, we adopt a pragmatic and cost-benefit orientated approach. The objective is to demystify the whole agenda of low energy solutions, and demonstrate the value through scientific modelling of the building performance aligned with Whole Life Costing.

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We have adapted cost and dynamic modelling to allow us to feed in energy costs and any related incentives such as FIT, RHI, etc... thus providing accurate ROI figures and related benefits. How the information generated is presented to the clients (and other stakeholders) is hugely important to achieving “buy-in” to the sustainable agenda and its obvious advantages. We have found that scientific data and calculations can be a useful tool to convince the finance director or key decision maker to consider an alternative and low energy approach. This must be communicated in a “less is more” manner with all jargon and data simplified as far as possible. We find that graphs and tables, comparing to benchmarks derive the best success and understanding.

An example of this in practice has been applied on a project HPW completed in 2011 near to our offices in Hampshire, at Paultons Park, a family owned amusement park. The location is in the New Forest National Park, and therefore of a sensitive nature for obvious reasons.

The client had not previously built buildings with any real insulation or indeed any energy strategy at all, and was not familiar or particularly keen on anything remotely sustainable. We consulted closely with the local authority, the community and at executive level with the National Park Authority, and took into consideration their concerns and comments.

However, they had never previously encountered a scientific, as opposed to purely visual, way to approach the scheme. Not least, dynamic modelling, and the demonstrations of the way natural ventilation and illumination would perform, were new to them — until we pointed out the numerous Victorian and older buildings in the region that have similar features.

Combined with the benefits of wildflower roofing and retention of all excavated material on site to help reduce visual impact at the rear of the building, the client and the consultees – immediately grasped the attractiveness and cost benefits of such a solution. The planners supported the application and we gained unanimous approval.

At the detailed design stage we threw in a key ace card to swing the client fully behind a highly insulated, low energy low operational cost build. The ventilation and cooling demands in a large, heavily used building that accommodates up to 300 people, many of them children running around at full pelt, are considerable.

We prepared the comparative costs for a conventional mechanically ventilated and air-conditioned system, and a wind catcher and cross ventilation solution, the former costing £340,000 and the latter costing £52,000 and saving on the floorspace for a plant room as well. This with the compounded issue of lifetime energy costs for the mechanical solution versus no energy costs for the natural ventilation system was hugely appealing.

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Whilst the modelling demonstrated the peak temperatures during the summer showed potential overheating at 28-30 degrees in mid-summer, this was accepted as a risk worth taking by the client, especially as it was felt the target audience would be playing outdoors on the rare days when such temperatures occur.

The building with its seven windcatchers has now been operating for a full season with record attendances on the park. We've been able to keep a close eye on the building's performance as it is just down the road from our offices. When we take clients, consultants or colleagues into the building in the hottest weather they always ask where the air conditioning is located. When they are told there isn't any, they are staggered, and some don't believe us!

As a result all concerned are committed to adopting similar installations on the future buildings on the development: RESULT!

Opportunities to apply a genuinely holistic sustainable approach to the design, construction and operation of commercial buildings can work and bring genuine benefit without additional cost or prohibitive additional complications. We simply need to look to broader options, often proven historically, or successfully applied by our neighbours on the continent for many years. The current economic situation is helping very few of us and we face austere and frustrating times, surely if we can essentially save our clients money this is both appealing and engaging.

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*Gary Wilburn is Creative Director at HPW, who provide sustainable architecture, interior design and branding. Their mission is to develop solutions that are innovative, simple, attractive and affordable, assisting clients to meet green legislation and minimize environmental impact. [www.hpw.co.uk](http://www.hpw.co.uk)*

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