



## Joined-up thinking cuts costs on mixed development

**By engaging AJ Energy Consultants to see his Eel Pie Island project through from the initial pre-planning stage to certification, architect Henry Harrison ensured the smoothest progress through the planning process, the best possible energy performance, and kept a tight grip on his budget**

**E**el Pie Island has a colourful history. It once played host to some of the world's greatest musicians at the legendary Eel Pie Island Hotel, later became a hippy commune, and today boasts one of the capital's most desirable postcodes. Situated on the River Thames at Twickenham, the iconic island can only be reached by footbridge or boat – an access problem that would deter most developers. But for architect and property investor Henry Harrison, this simply added to the site's charm, and in 2009 he embarked on an ambitious scheme comprising ground floor offices with four flats above, and a separate detached house.

However, location was not the only challenge. Eel Pie Island is subject to stringent planning conditions, being not only covered by the London Plan but also the Local Plan requirements of The London Borough of Richmond Upon Thames – BREEAM Excellent and Level 4 of the Code for Sustainable Homes were required as standard. With such strict parameters to be adhered to, Henry decided to bring in expert help right from the start, and engaged AJ Energy Consultants following a recommendation from planning agent Valerie Scott.

In order to ensure the best possible progress and outcome, AJ Energy worked with Henry throughout the

*“AJ Energy provided a high level of input throughout the project, including taking care of the huge amount of paperwork the planning authority requires”*

*Henry Harrison*

project – John Simpson, director, undertook the BREEAM assessment for the offices, the Code for Sustainable Homes assessments for the residential units, the mechanical and electrical design, and the detailed energy strategy. This kind of continuity not only fulfilled the requirement for compliance with planning requirements and regulations, but it meant that Henry had the benefit of dealing with one contact for all the energy- and sustainability-related elements of the build. Perhaps even more importantly, it enabled him to make

decisions that would keep costs down while still delivering the best actual energy performance for the finished development. This not only ensured running costs would be minimised, but that comfort levels would be optimised for the units' eventual occupants.

But despite such comprehensive planning, the delay between submission and consent was such that the proposed energy strategy was no longer optimal. By working together, John and Henry successfully revised the scheme quickly and within budget.

"We started off with water source heat pumps, which ticked all of the authority's boxes, but were impractical for this development," Henry recalls. "For example, John pointed out that if I wanted to sell the flats in the future, the single water source heat pump wouldn't be suitable – something that hadn't occurred

*"I had appointed a consultant to look after the Building Regulations compliance, including aspects such as drainage and waste water. However John volunteered far better suggestions, even though this was not part of his initial remit"*

*Henry Harrison*



## Sense and feasibility?

The higher levels of the Code for Sustainable Homes and BREEAM ratings have become in some cases essential for planning approval to be achieved - planners are now asking for BREEAM Excellent on pretty much any new non-residential scheme in London, even if the scheme in question is a commercial space that is smaller than a house.

As there are mandatory targets such as a 25% improvement against Part L of the Building Regulations and the incorporation of renewable

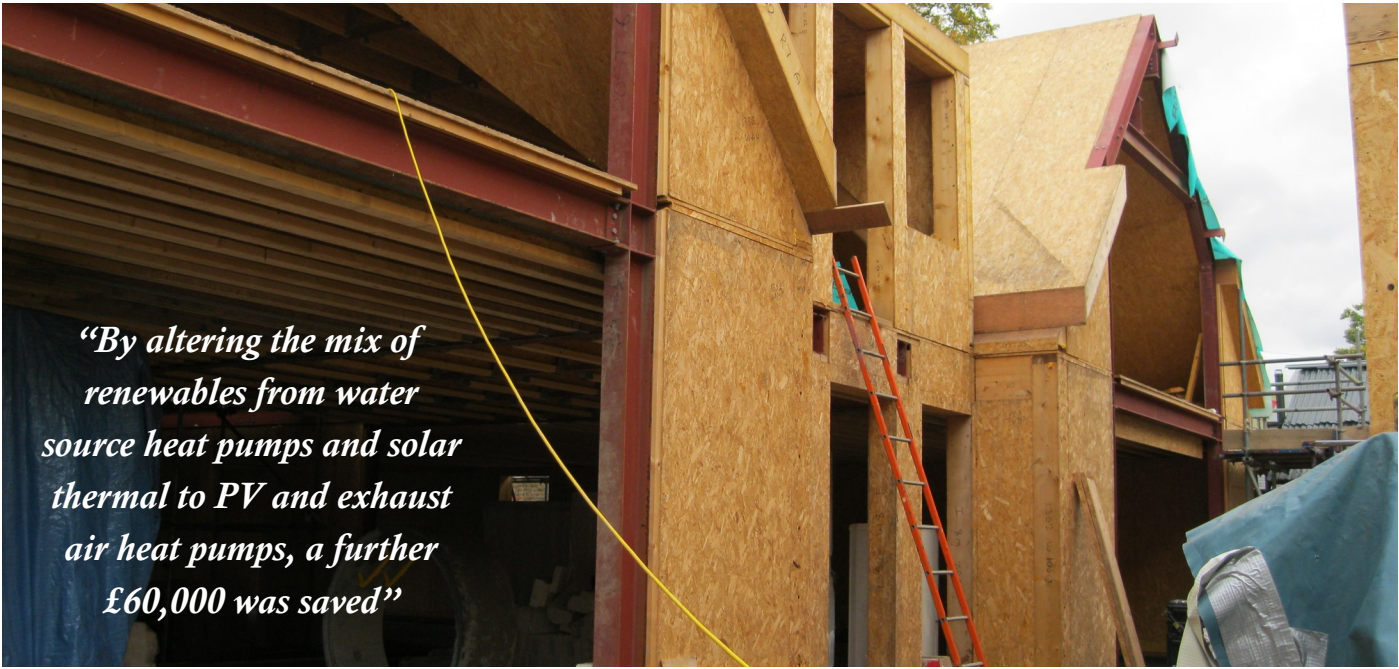
technologies, it is often virtually unworkable for smaller developments to meet such requirements, and that's before you've even considered the fact that a number of consultants would be needed (bringing with them additional cost implications).

If BREEAM Excellent or one of the higher levels for the Code for Sustainable Homes has been stated as a planning condition on a scheme, yet the target is considered unfeasible for a particular development, we can put together a report to state the case for a relaxation of the condition. We will also negotiate

with the local planning department, to come to an agreement over a more feasible outcome regarding energy targets – ensuring that the resulting scheme is not only energy efficient but also realistic in terms of cost, too.

For example, on this project we successfully negotiated the BREEAM requirement down to Very Good from Excellent – our report demonstrated that it wasn't possible to achieve the highest rating for a variety of reasons, including the fact that the planners would not approve a high enough number of PV panels to meet the required criteria.





*“By altering the mix of renewables from water source heat pumps and solar thermal to PV and exhaust air heat pumps, a further £60,000 was saved”*

to me before. So he changed it to a self-contained water source HDA system which is individualised. John also found a local company who had installed this technology in a nearby development, and arranged for me to view the scheme. This was then acceptable to planning.”

Another major step towards securing planning consent was John’s successful negotiation with the local authority, which resulted in the BREEAM requirement for the offices being relaxed from Excellent to Very Good, a more realistic target for this small development. Also, by altering the mix of renewables from water source heat pumps and solar thermal to PV and exhaust air heat pumps, (which work by extracting heat from the exhaust air of a building and transferring the heat to the supply air and hot water tap), John was able to save a further £60,000.

John’s energy strategy encompassed all aspects of the project, including a SIP system (structural insulated

## Lower costs and energy usage

A ‘tick box exercise’ approach to meeting energy targets encourages ‘green’ measures to be bolted on as an afterthought, rather than being selected as part of an integrated design. The result of this is higher expenditure and ironically less benefit to the carbon footprint of a build.

The best way to combat this potential pitfall is to work with an energy specialist end-to-end on a project, from initial design, through planning and compliance, to certification. This not only simplifies the process, with clear accountability and one expert point of contact throughout, but it often also cut costs and carbon emissions through an approach characterised by joined-up thinking.

We can say this with the benefit of experience, as it’s our preferred way of working. For example, as we were involved in this project right from the start, we could ensure that the design (both building and M&E) and construction supported the energy objectives. Not only did we advise upon the best renewables to meet the planning conditions, but they were also the ones which suited the development best, resulting in greater sustainability and energy performance. In addition, our advice on the energy efficient construction system (SIP – structural insulated panels) allowed renewables to be used sparingly, providing the best-performing and most common-sense solution, keeping costs down in the process.







panels). Pre-engineered and delivered to site, the panels comprise a core of insulation sandwiched between two outer skins of oriented strand board. The result is a CFC/HCFC-free solution which ensures high levels of air tightness and insulation. Designing the SIP system was one thing, delivering it to site was completely another. Like all the heavy materials (including a 3.5 tonne spider crane), the panels were floated to the island.

## PROJECT SUMMARY

- Located on Eel Pie Island, Twickenham, London
- Ground floor offices with four flats above, plus a detached house
- Planning condition of CfSH Level 4
- Original requirement of BREEAM Excellent negotiated down to Very Good
- AJ Energy recommended by planning agent
- Comprehensive service included pre- and post-planning stages
- £60,000 saved by reviewing renewables options
- SIP (structural insulated panel) system recommended for excellent U-values
- Remit expanded to include M&E design, and Building Regulations compliance

Finding a consultant with such a broad range of expertise made a significant difference to the smooth running of the project. "It's really useful to have someone like John," says Henry. "He really knows his stuff. This is why we originally brought AJ Energy in to look at the energy, and when I found out that they also have a background in M&E, I appointed them to manage this as well."

Henry explains that AJ Energy went beyond the original brief: "I had appointed a consultant to look after the Building Regulations compliance, including aspects such as drainage and waste water. However John volunteered far better suggestions, even though this was not part of his initial remit."

"John runs a tight ship," he continues. "With AJ Energy you're not dealing with juniors who have to ask someone higher up the chain when they're not sure. John provided a high level of input throughout, including taking care of the huge amount of paperwork that the planners require. I have already recommended AJ Energy – John was invaluable and I couldn't have done it without him; apart from anything I don't have the expertise, plus he is hands-on, experienced and lateral thinking."

## Got any questions?

For more information on our comprehensive range of services, please visit our website at [www.ajenergy.com](http://www.ajenergy.com) or email [mail@ajenergy.com](mailto:mail@ajenergy.com).