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EDITORIAL

Magazine of the Year Best-Designed B2B Magazine Redesign/Relaunch of the Year Magazine Design Awards 2005

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COUNTLESS PROJECTS STAND TO GAIN FROM BEDZED'S TRIAL AND ERROR

By Isabel Allen

In his review of Jubilee Wharf, Bill Dunster's mixed-use sustainable development in Penryn, Cornwall, Peter Buchanan argues that 'appraisal of this sort of building should wait until it has settled into the life of the town and the performance of its environmental systems has been monitored' (*see pages 25-37*). As if to prove this, its completion coincides with criticism of its predecessor, BedZED, centring on the fact that its wood chip-powered plant has broken down.

Yet the problem underlines the extent to which BedZED was ahead of its time. Specified 10 years ago in the project's initial design, the plant was both unsophisticated and highmaintenance. Attempts to procure a replacement were scuppered by the supplier having gone out of business – an occupational hazard in a new and uncertain market. (An improved product is now available and Dunster reports BedZED will be running as a zero-carbon apartment block in four months' time (ajplus 12.12.06).) Projects up and down the country stand to gain from BedZED's process of trial and error. BioRegional Development, the company which initiated BedZED, went on to form a joint venture with the developer Quintain, with a pledge to build 'One Planet Living' communities across the UK. One of its current ventures is to team up with Kevin McCloud in his bid to build (and film) an environmentally friendly suburb, hence bringing the business of designing sustainable communities to prime-time TV. It is hard to imagine a more dramatic transition from messianic to mainstream.

Perhaps the most ringing endorsement of BedZED's success is the admission by Pooran Desai, BioRegional Quintain's sustainability director, that 'we have learned as much about how not to do things as how to do them'. It may be a terrible cliché, but in an increasingly risk-averse culture, it is important to remember that we learn from our mistakes.

CONTRIBUTORS



Penny Lewis, who reviews the Northern City exhibition at The Lighthouse on page 53, is the editor of Scottish architecture and design magazine Prospect



Peter Buchanan, who writes about ZEDfactory's Jubilee Wharf in the Building Study on pages 25-37, is a freelance architectural journalist and critic



Christine Sullivan, whose photographs of Jubilee Wharf feature in the Building Study, is an artist based in London who works in video and photography



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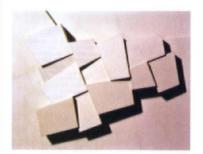
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- Robinson, Kenning & Gallagher
- architectural technician

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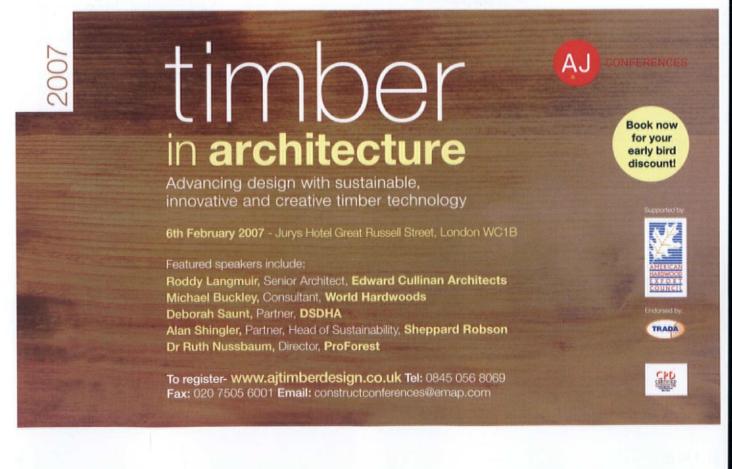
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THURSDAY 7 DECEMBER

- RIBA Award-winning lecturer criticises education system
- CABE offers very limited support to King's Cross improvements
- English Heritage finally gives full backing to Gehry's troubled Hove scheme
- Danes beat Rogers with Glasgow river crossing (right)



FRIDAY 8 DECEMBER

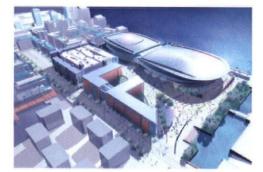
- Government allays Thames Gateway flood-risk fears
- Lyall trims tower in bid for Liverpool approval
- Trio of Brits make final five in Damascus competition
- Softroom succeeds Pugin in Lancashire (below)



MONDAY 11 DECEMBER

- Larabee Barnes awarded
 posthumous Gold Medal by AIA
- JCB chairman launches 'legacy
 to Uttoxeter' competition
- Brutalist Scottish stadium listed (see page 16)
- Future of Spence's Sussex arts centre cast into doubt (right)





TUESDAY 12 DECEMBER

- Wilkinson Eyre's Liverpool Kings Dock needs £9 million cash boost (left)
- Thames Gateway to bag £4 billion
 of private-sector money
- Livingstone bows to Green Party pressure over Bennetts' Islington scheme
- Broken boiler blamed for Dunster's
 BedZED problems

WEDNESDAY 15 DECEMBER

- English Heritage commits to renovation of Finsbury Health Centre
- Dixon Jones to propose new
 Embankment-Hyde Park route
- Conservationists launch renewed campaign to stop Supreme Court development (right)
- CABE demands remaining authorities sign up to Design Champion initiative



CONTRACTOR PREQUALIFICATION

ALDAR Properties PJSC, one of the largest property developers in the Middle East, and the UK's Laing O'Rourke have combined to create ALDAR Laing O'Rourke Joint Venture, to undertake the construction delivery of Al Raha Beach, Abu Dhabi. This is one of the most exciting and challenging mixed use developments in the world today.

ALDAR Laing O'Rourke Joint Venture is now seeking expressions of interest from experienced, suitably qualified construction companies, capable of executing major projects to world class standards.

THE PROJECT

Al Raha Beach development is divided into a number of individually named precincts, covering an area of 500 hectares, and includes the following elements :

- Infrastructure
- Leisure
- Commercial
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- Transportation
- Marine Works
- Public Spaces

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The success of this world class development requires suitable partners with proven ability to come together, within a collaborative environment to form capability led integrated teams. These partners will have the required resources and skills necessary to deliver individual or combined elements of the project, with regard to the following disciplines:

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- Utility / Service Installations
- Infrastructure Construction
- Landscape Construction

PROCUREMENT PHILOSOPHY

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JDIRECT LAING

NEWS



MINISTER BLANKS ARB REFORM

By Ed Dorrell

A letter from Labour minister Angela Smith (*above*) to ARB chairman Humphrey Lloyd, which has been leaked to the AJ, has illustrated the deep lack of support in the government for reforming title regulation.

The note was sent following a meeting between Smith, a junior minister at the Department for Communities and Local Government, and Lloyd. In the letter the minister illustrates her disinterest in the reform proposed by many in the profession.

Smith said architects should avoid trying to 'disassociate themselves from [title regulation]', and that in its present state the ARB is 'effective, efficient and careful'.

This has come as a sharp rebuff to the ARB Reform Group, which is made up of members elected to the ARB's board who have campaigned all year to see the work of the organisation pared back or even killed off.

The group has demanded that the government make changes to the 1997 Architects Act, which originally set up the ARB.

Some members of the group have argued that the registering of British architects should become a function of the RIBA.

But the letter dismisses these concerns. 'The ARB is... a minimalist body,' it states. 'Comparison with other regulators, statutory and nonstatutory, clearly shows that it is both effective and efficient, and careful in its use of funds.

'Parliament is unable to instruct a regulatory body – one which it has set up as an independent body – on how best to administer its responsibilities.

'The legislation clearly established the ARB as a regulator, and endowed it with discretion to adapt to changing circumstances and public expectations.

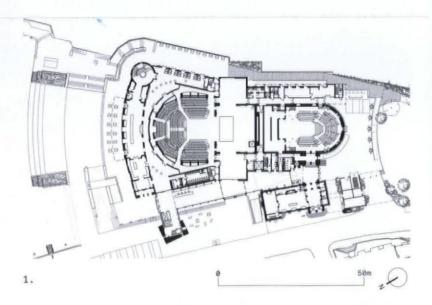
'There would, it is true, have been other ways of going about the separation of roles. Some professions have voluntarily done it inhouse. Others have needed encouragement, persuasion and in some cases legislation.

'Architects should take pride in the fact that they were among the first in the field and instead of trying to disassociate themselves from their chosen model of regulation, must seek to ensure that it evolves progressively for the benefit of the public and thus, ultimately, for themselves.' Colin Brock, a member of the ARB Reform Group, said: 'It seems that the minister is in favour of the *status quo*, and this seems to be the way that she works.

'Next time, the delegation that goes to see the minister ought to be more balanced, so more than one message gets to her.

'This will not defeat us,' Brock added. 'At least, it is extremely unlikely to. We must try by dialogue to win the arguments.'

However, long-term ARB critic Ian Salisbury disagreed. He said the letter was an improvement on previous correspondence from the government, which he claimed never even accepted that there was dissent.



BENNETTS RAISES THE ROOF AT RSC

By Ed Dorrell

The Royal Shakespeare Company (RSC) has submitted for planning this new scheme by Bennetts Associates for the redevelopment of its home in Stratford-upon-Avon, Warwickshire.

The scheme is the latest bid by the RSC to restructure its work in the town following the collapse last year of Erick van Egeraat's plans for a new home for the company.

The Bennetts plan retains the facade of the original grade II*-listed Art Deco theatre, while entirely reworking the original interiors in a bid to create what it is hoped will be 'the best theatre for Shakespeare in the world'.

Designed with theatre consultant Charcoalblue, this proposal aims to be a modern take on the Shakespearean courtyard theatre, with a thrust-stage auditorium seating over 1,000 people.

The scheme's key move is to create a new roof, which will straddle the main Royal Shakespeare Theatre and the smaller Swan Theatre and will appear to almost hover above the pair.

A new foyer will be created to the west of the complex, sitting behind the Art Deco facade, while a new walkway will run down the south side of both theatres, linking them together.

Since outline sketches for the project were published in June this year, revisions have been made to the roof and the new tower. The revised design accommodates a larger roof which, according to the practice, will 'float dramatically' over the facade and then extend south to wrap around the existing flytower and backstage wings.

There have also been alterations to the plans for the 35m tower, which is as yet unnamed.

This process has resulted in designs for an insulated and waterproofed viewing room within the walls of the tower, offering views over the town and the river. Above this is an open-air platform, from which there will be views across Stratford and the surrounding countryside.

Three brick walls that taper and twist towards the top contain the inner steel structure, stairs and lifts.

An independent community forum was set up in March 2005 to consider the plans. And since the publication of outline designs, the RSC and Bennetts have run a programme of public consultation. Support from local groups won through this process represents possibly the single biggest achievement to date of the Bennetts plans.

One such group, the Stratford-upon-Avon Civic Society, told the AJ that it considered the process of drawing up the proposals a 'case study in the process of public consultation'.

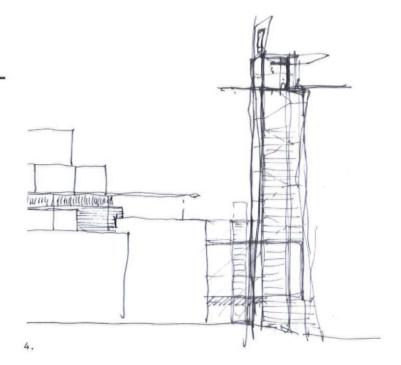
'We've been involved all the way and are very pleased with the plans, we will almost certainly support them,' a spokesman for the society said.

Work on the transformation is scheduled for completion in 2010.

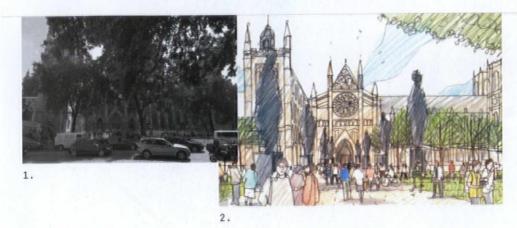


 Site plan
 A view looking west at the retained Art Deco facade
 Section

4. Concept sketch



NEWS IN PICTURES



1 & 2. The sketch (left) shows how historic views of the south side of Westminster Abbey (seen in its current state in the photograph, far left) will be reclaimed and the area pedestrianised





3 & 4. Plan of Parliament Square today (above left) and how it will look under DSDHA's plan (above)

DSDHA SHAPES PARLIAMENT SQUARE

DSDHA and the Greater London Authority (GLA) have unveiled these designs for one of the UK's most important projects - the redevelopment of Parliament Square in central London. The images, exclusively revealed by the AJ, are the first designs from a feasibility study for the reshaping of the square. The core aim of the project will be to improve the central area of the square and close off the south side to traffic, which, it is hoped, will also reduce traffic flow on the other three sides. The scheme will also aim to create crossings on to the square, as well as improve disability access, which does not meet current standards. The project is part of the World Squares Masterplan, which was produced by Foster & Partners in 1998. This masterplan had a long-term vision for an overall development running from Trafalgar Square, south through Whitehall and down to Parliament Square. The first phase of the project was Trafalgar Square, which was completed in 2003. Whitehall was supposed to be the second phase, but, according to the GLA, the success of Trafalgar Square led to London Mayor Ken Livingstone deciding to look at Parliament Square instead. 'The images give an idea of how the square might look,' said Gill Bull, of the GLA squares development. 'The Mayor is currently commissioning design work and traffic modelling to see how it might work.' The scheme is subject to planning approval from Westminster Council, but detailed designs are yet to be produced. However, it is understood the Mayor's office is hoping to begin work in the latter half of 2008, with completion due in 2010. By Richard Vaughan



6.

5 & 6. Concrete security walls (in the photograph above left) will be replaced with security bollards integrated into the street furniture (in the visualisation above right)

7 & 8. The visualisation (below) shows how Parliament Square will be fully pedestrianised and updated from its current state (below right)



7.

NEWS IN PICTURES







1, 2, 3, 4, 5 & 6. The anonymous designs submitted in the Sherwood Forest Visitor Complex competition

SIX GO INCOGNITO IN THE FOREST

These are the first images of the shortlisted schemes in the Sherwood Forest Visitor Complex competition. Designs by Niall McLaughlin Architects and Ken Shuttleworth's practice, Make, are among the six anonymous proposals that are about to go on public display around Nottinghamshire. The other four firms battling it out to land the £50 million project are Glenn Howells Architects, Richard Murphy Architects, Patel Taylor, and Wilkinson Eyre. The winning scheme will become the centrepiece of the Sherwood Forest: Living Legend bid, which will be submitted by Nottinghamshire Council in an attempt to bag a substantial cash handout from the Big Lottery Fund's Living Landmarks grant programme. All six finalists have already been given a £4,000 honorarium and the RIBA's Competitions Office expects to announce the eventual winner early next year. By Richard Waite







AGENDA





1 & 2. Peter Womersley's grandstand is only the second football stand in Scotland to be listed

WHAT A SAVE – FAIRYDEAN LISTED

By Richard Waite

Not all the locals agree, but for fans of 1960s Brutalist architecture, the listing of Peter Womersley's concrete grandstand at Galashiels in the Scottish Borders is well deserved and long overdue.

The recent B-listing decision by Historic Scotland means Gala Fairydean FC's 'striking' Netherdale stadium has become only the second football stand in Scotland to be given heritage protection.

In architectural terms at least, the East of Scotland Football league minnows can now proudly puff out their chests alongside Glasgow Rangers – the owners of the other listed grandstand.

Built between 1963-65, the concrete structure, with its distinctive V-section vertical fins and wedge-shaped canopy, was seen by many as the UK's answer to the 'expressive and bold' stadia emerging in post-war Europe.

According to the Architectural Review in March 1965, Womersley's stand was not just 'structurally interesting' but also a 'geometrical composition of unusual interest and subtlety'.

Amazingly the boardmarked concrete and brick structure, which boasted integrated turnstiles, cost a paltry $\pounds 25,000$ to build, and most of that was raised through a public lottery.

Although the stand has been slightly altered in recent years – there has been some brick infilling to create an extension to the bar – both Docomomo and the Architectural Heritage Society of Scotland were adamant the building deserved to be listed. Paul Stallan, design director at RMJM, says he can see why the building, designed with engineers Ove Arup, is revered.

He says: 'Without question it is a *tour de force*.

'At a time when most football stands were still a hybrid of cast-iron and timber construction, this structure stands out, not only as technologically exemplary but also a masterwork of geometry and proportion.

He adds: 'Today, when football bling extends to stadium design, this is both honest and athletic in its expression. It represents the Zidane of Scottish football stand structures; old, noble and hard as nails.'

However, not everyone is able to see the significance of the stand. Some local groups, including Borders Heritage at Risk, believe the structure is similar to second-rate Eastern Bloc architecture.

Others call the decision 'madness' and say that 'Hysterical Scotland' is out of touch with public feeling and opinion – especially when older more 'historic' buildings in the town have been flattened to make way for new shops.

Alan Dunlop, of gm + ad, though, is happy to defend the work of Womersley, who he rates alongside greats such as Gillespie, Kidd and Coia.

He said: 'This is an exceptional piece of architecture, its structural gymnastics are quite amazing. Anybody who knows anything about architecture could not say otherwise.'



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NEWS IN PICTURES

ARCA IN SALFORD DOUBLE BILL

Arca Architects has unveiled its latest proposal for a mixed-use tower scheme in Salford - a key project within Feilden Clegg Bradley's masterplan for the Exchange Greengate area close to Manchester city centre. The proposed development is a redesign of an original 60-storey, singleskyscraper scheme which came in for criticism from CABE last year. Submitted for planning with Salford City Council last week, the project now features two smaller towers - the shorter a 31-storey building with a rooftop pool complex. The taller block, which at 46-storeys will be as high as Ian Simpson's Beetham Tower across the city, will boast Manchester's first public observation deck. Enabling work has already started on the 405-flat scheme which also includes plans for a 223-room five-star hotel. By Richard Waite





1 & 2. The two towers (above) replace an earlier scheme for the same site which featured a single skyscraper (left)

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ASTRAGAL

'A shameless capitulation to her former employer, the CBI – an open invitation to developers to try their luck'

Simon Jenkins on Kate Barker's planning report. *Guardian*, 06.12.06

'The last thing London needs is vision. London does not take kindly to being designed'

The Greater London Authority's new Design for London director Peter Bishop. *Times*, 06.12.06

'I would tear down every building built by that pompous shit Richard Rogers'

'Poet and entrepreneur' Felix Dennis on what he'd like to see demolished. *IoS*, 10.12.06



IN A PICKLE

One of the highlights of the RIBA President's Medals last week was the plate of free sarnies some AJ hacks found lurking in a back room. They were a little dry and perhaps left over from a previous function, but Astragal is ever thankful when he happens upon a traditional cheese and pickle number. And **Peter Cook**'s old mucker **Colin Fournier** seemed to agree.

A SUBSTANTIAL ERROR

Astragal can't be certain because his mind was drifting somewhat – possibly on to his favourite subject of who would win in a fight between a tiger and a bear – but there are reports that a chap from Atkins giving a speech during the President's Medals do apparently referred to *'substainable'* three times when, presumably, he meant 'sustainable'. Is it possible he'd had one too many glasses of the president's special reserve prosecco?

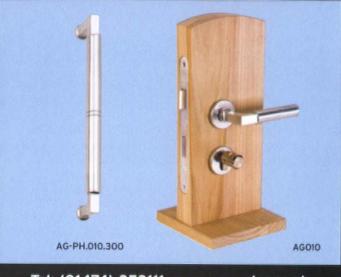
OH YES, SAYS ONO

Yoko Ono is never one to avoid controversy, and so it should come as no surprise that she has admitted she's a big fan of the contentious new X-museum on Liverpool's waterfront. The revelation came at a blacktie bash held to officially launch 3XN's already high-profile project - a scheme which has raised the hackles of heritage busybodies trying to protect the setting of the Three Graces. According to practice chief Kim Nielsen, Ono gave an unequivocal 'Oh yes' to the plans. Forget Norwegian Wood - bring on Danish concrete.

TAKING A PITT STOP

What do you give a man who has everything? asks www.zeenews.com so pertinently. It goes on to describe how Angelina Jolie solved this particular dilemma for her architecture-loving partner, Brad Pitt. What could be more appropriate for a prebirthday treat (Pitt turns 43 on 18 December) than a private tour of Fallingwater? As Angelina apparently told the staff, 'He's hard to buy for'. Pitt was said to have enjoyed his tour of Frank Lloyd Wright's masterpiece and the tour leader found him 'incredibly informed about architecture'. But lest anybody think this was an entirely ascetic tour, it included a private champagne and caviar reception in the living room. A little more glamorous than the usual catering.





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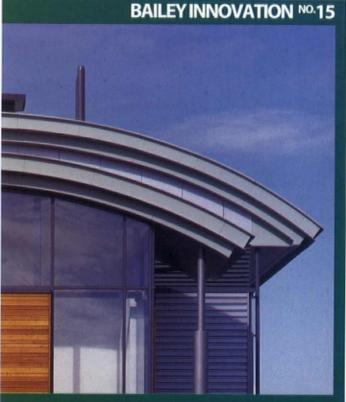
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BAILEY

LETTERS

LIFE-ENHANCING LYONS HAS BEEN WELL SERVED

This is in response to your correspondents' comments on the Eric Lyons and Span exhibition at the RIBA (AJ letters 07.12.06).

I am no doubt prejudiced as my daughters were born at Castle Green; one of them went on to become an architect, and the other started her married life in Weymede, although we did have to strip down the Tyrolean kitchen and replace the Tudor handles that had been installed by the previous occupier.

Maybe the exhibition is 'rather flat', but it is exemplary nevertheless. Models wouldn't help here. Span developments need to be experienced from the ground level, as at Templemere, where the subtle contouring allows paths to disappear from view as one moves around. Usually the new planting (now mature) complemented existing specimen trees.

Living at Castle Green was a life-enhancing experience. Well-designed internal spaces; good orientation and top-lighting; built-in furniture; a logical hierarchy of private to public spaces; and a safe harbour for children to play in.

Experimental? I don't think so – simply a determined and skilful developer/designer team who were catering for what was then a niche market. It was the early days of Habitat and affordable quality design.

Forty years ago, when architects earned $\pounds 2,000$ a year, these were affordable homes, at $\pounds 6,500$. Today, when architects earn $\pounds 35,000$, they are no longer affordable at $\pounds 300,000$.

That's all to do with rising land prices, but also probably the clue as to why Span has never been bettered.

For further reading I'd recommend *Eric Lyons and Span*, edited by Barbara Simms, from the RIBA bookshop. *Colin James, Witney, Oxfordshire*

LONDON CALLING - ALL THE ARCHITECTURAL SHOTS

I was amazed to see yet again the sway towards the glitzy student work from the capital in the President's Medals (AJ 07.12.06).

May I suggest that all those students outside of London (and those from London who may be interested) be entered into a parallel student competition that concentrates on and celebrates content rather than form; called the 'Student Medallions'. Your cover missed out one badge from its collection... a London one. Wear it with pride, RIBA, instead of keeping it hidden inside your jacket – because the bias is clear to see. Paul Bower (a disenfranchised sixth-year student from the Sheffield School of Architecture)

NOT A SLAMMING BUT AN INTERNATIONAL CRITIQUE

I find it difficult to ignore the AJ's report of my apparent 'slamming' of the standard of the teaching of architecture in the UK (ajplus 07.12.06).

In conversation with your reporter I referred to a tendency which is prevalent in many architectural schools to reduce the complex process of design and the use of many different tools to just one – mainly a digital tool. This tendency is international.

I have not slammed anything, and certainly not specifically the UK. My loyal attitude to many architectural schools in the UK very clearly shows this. Dalibor Vesely, by email

CABE'S CONCERNS ARE NOTED BY THE REAL DESIGNER

An online article (ajplus 06.12.06) mistakenly credits Cassidy and Ashton as the designer of a mixed-use scheme in Preston. Cassidy and Ashton Planning is acting as planning consultant and we, Wood Associates, are the architects.

Following initial consultations with the city council, which were encouraging, the scheme was submitted in an outline form, with the design being omitted from the application as a reserved matter.

We note CABE's concerns and it may be appropriate to take some of them into account when the scheme reaches a more advanced stage.

David Cox, Wood Associates Architects

Please address letters to: The Editor, The Architects' Journal, 151 Rosebery Avenue, London EC1R 4GB, fax 020 7505 6701, or email angela. newton@emap.com to arrive by 10am on the Monday before publication. The Architects' Journal reserves the right to edit letters.

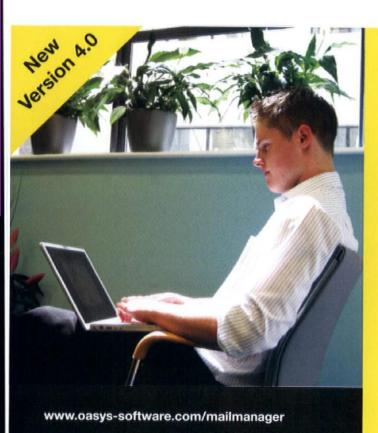




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ZEDFACTORY/ JUBILEE WHARF



BUILDING STUDY

A HYBRID OF BUILDING AND UPTURNED BOAT, THE WIND TURBINES AND COWLS HAVE A NAUTICAL FEEL

By Peter Buchanan. Photography by Christine Sullivan

After working for Michael Hopkins and Partners on projects including Nottingham Jubilee Campus and Portcullis House, Bill Dunster set up his own practice in 1999, specialising in low-energy design. Its BedZED development for the Peabody Trust in Sutton won the sustainability award in the Housing Design Awards 2000. The practice is in the process of changing its name from Bill Dunster Architects to ZEDfactory, to reflect the contribution of all its members.

Jubilee Wharf, a mixed-use development in Penryn, Cornwall, is the latest of ZEDfactory's schemes that dramatically reduce fossil-fuel consumption and CO_2 emissions. While not yet generating all its energy needs, with future upgrades it will do so. Nevertheless, some key components (such as wind cowls) are improved versions of those on BedZED; and like that seminal scheme it includes residential and workplace units, potentially diminishing the need to commute. It furthers other aspects of the green agenda, contributing to community life and drawing attention to the ambient energies it harvests. It thus provides an enhanced quality of life essential to both the green agenda and its popular endorsement, as well as a sense of connection with other people and nature – psychic satisfactions which, it might be argued, alleviate the desperate drive to consume.

The building is prominently sited, almost as a gateway to Penryn. It is conspicuous from the harbour creek and the road from Falmouth to the east as it terminates a waterside row of nondescript commercial and semi-industrial buildings. These extend north-west along Commercial Road from where it is met by the town's main street, which slants down the hillside from the west, its final stretch offering views of the harbour, the new building and its wind turbines. The site had been derelict for a decade, latterly even cleared of its sheds, the planners having rejected a previous owner's proposal for mixed-use development when Andrew Marston bought it in May 2002.

Project, client and architect seem exactly matched. Marston is that rare client, committed to long-term and community benefits. Five generations of his family have been involved in building, property and hotels. When he bought a 125-year lease on the site it was to create a development that would bring income to further generations of his family, and help regenerate Penryn. Hence his commitment to diminished running and energy costs, and 'future proofing' through later upgrades.

Marston initially envisioned craft studios around a communal courtyard. Having been a craftsman himself, he knows crafts are important to the Cornish economy and that much that is produced goes directly to clients elsewhere. Cornwall and its craftsmen could benefit if their products had greater local presence. Talking to townspeople, he also established the need for a nursery school, a multi-purpose hall (for yoga and so on) and offices for community organisations. All these elements, which constitute about half the development, qualified for grants from the Objective One programme of the European Regional Development Fund (applicable only to Cornwall and Wales in the UK) that covered



1. The building is prominently sited and conspicuous from the harbour creek

about a third of their construction costs. Local grants were also used for some community elements.

Marston interviewed other architects before choosing ZEDfactory, appreciating its ethos and the community spirit and loyalty to BedZED among its residents. By now the site was subject to a local masterplan stipulating a block fronting the south-facing edge of the wharf with parking behind. But the parking wasted a prime part of the site, and the wharf edge is subject to regular flooding. (Dunster's rejection of the masterplan and the unconventional look of the building would provoke initial resistance from the planners. But then the 2003 New York blackout, followed by a limited power failure in London, highlighted the timeliness of his proposals.)

ZEDfactory proposed two blocks framing a sheltered court looking across the creek, the ground floor of the blocks and the court raised by 1.5m, leaving a strip along the historic quay edge at the existing level. Along the south-facing quay is a twostorey block with community facilities at the ends and rooms with plumbing (kitchens, WCs and changing rooms) in between. On the ground floor, against a ramp up from the street, is a Sure Start nursery with a south-facing, roofed play space beyond. At the block's other end is a café-bar with a raised timber deck outside enjoying sun and splendid views. Above the nursery are the offices and above the café is the large hall.

The four-storey block on the other side of the court has two levels of studio workshops below maisonettes, which Dunster proposed as part of a more intense development than Marston had in mind. (These are rented, though Marston lives in one and another has been sold to his mother for holiday use. Marston's wife, Alice, runs the café.) The workshop windows on the court can serve as shop fronts. Ground-floor units are accessed off the court and have a goods entrance from the rear parking court. First-floor units are along a gallery overlooking the court. This gallery is reached via a bridge from stairs set into the lower block. The same route provides access to another stair behind the taller block; this climbs to the access gallery to the maisonettes, but does not descend to the ground. These elongated access routes help animate the court, to which the bridge defines an entry portal.

The maisonettes command fine views up and down the creek and have evolved from those at BedZED. Airtight and super-insulated (with 300mm Rockwool cavity insulation and high-performance windows), they have high-thermal-inertia concrete floor slabs and inner leaf, and are ventilated by tracking wind cowls with heat exchangers. (The cowls are squatter than those at BedZED, and are angular rather than curved, with triangular flashes of colour that seem to be aptly nautical. Partly because of the corrosive sea air and high coastal winds, they also have more robust bearings, taken from a Ford Mondeo wheel hub.) Both floors are fronted by a glazed sunspace, part of it double height, that helps warm the units in winter. The lower level opens out on to a balcony; and on the upper level inward-opening French windows turn part of the space into a balcony area.



2.

2. A glazed sunspace helps warm the units

3. Elongated access routes animate the court, to which the bridge defines an entry portal

4. The four-storey block houses two levels of studio workshops below maisonettes

The workshops are similar to the maisonettes in construction. But with less solar gain, they are heated in winter by low-temperature underfloor heating. (There is underfloor heating in the community spaces and maisonettes, but it hardly needs to be used.) Ventilation is by side-mounted units with electric fans.

The shaping of the cross section of both blocks was crucial to ensure sheltered conditions in the court and was refined by computational fluid dynamics (CFD) analysis. The lower, down-wind block is designed to lift the wind up and over itself, the court and the taller block without turbulence. Thus its south wall leans back and sweeps in a curve into the roof, the whole supported by laminated timber beams and clad externally, like all the roofs, in durable zinc. (Because of its shape, much of this block is of lightweight construction with thermal mass provided by the concrete floor slab.)

The upper floor extends out to shelter a walkway to the café, and the roof eaves reach yet further to guide wind across the court to where the taller block helps maintain a stable high pressure within the court. The southern edge of this higher roof pitches down to help entrain the air and provide a sunny surface for the solar heating panels – and for future retro-fitting of photovoltaics as their payback period diminishes.

The solar panels provide hot water for half the year, and are supplemented in winter by a wood-pellet biomass boiler. On the quayside, in front of the lower block, stand the wind turbines, their masts mounted on hinge plates so they can be lowered on to

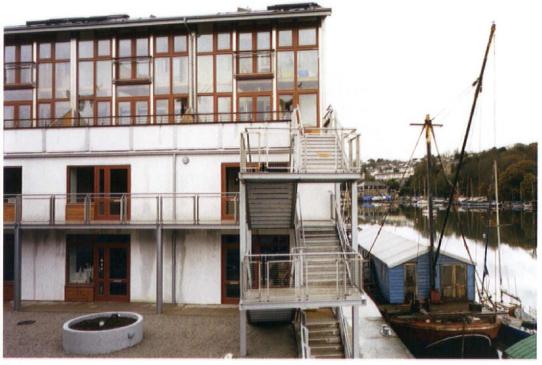


3.

the quay for easy maintenance. These are not the highest performance turbines available, but are robust and safe, the blades furling rather than speeding up in very high winds. Provision has been made for each maisonette to be fitted with its own rooftop micro turbine. Along with the photovoltaics, the building should then generate all its energy, if not more.

Where possible, local materials and labour were used. For instance, some walls are clad in locally grown western red cedar, and external soffits are untreated local larch. All timber is Forest Stewardship Council (FSC) accredited as being from fully sustainable sources, including the durable imported red angelim of the café deck. Other materials, such as the wood floor in the café and the ceiling in the hall, are recycled. So too are what were granite kerbstones, used to consolidate the edge of the old quay.

Construction had its problems. Piling encountered old walls from earlier quays (damaging the rig) and a sewer not aligned as shown on surveys, leading to a 10-week delay. With half the building funded by various grants, there was reluctance to advance detailed design development until these were certain. But, once granted, construction had to start quickly, without time for a full bill of quantities. Such problems, together with those of contractors encountering unfamiliar technologies and their knock-on effects, led to a 67-week build time, overrunning by 32 weeks: and to cost overruns of \pounds 600,000 taking the budget to \pounds 3,600,000. Marston accepts these with good grace, attributing much to the funding process and recognising that he has a sound long-term



4.

investment. The \pounds 1,700/m² gross internal cost is competitive for such a complex mixed-use scheme with a low-carbon specification and microgeneration.

Appraisal of this sort of building should wait until it has settled into the life of the town and the performance of its environmental systems has been monitored. Yet already when visited after being open only half a week it was becoming lively; the bicycle shop on the street, the workshops and the hall were all busy, and the café was bustling. The location of the various functions clearly fulfils Dunster's design intent of 'having the right activities happening in the right place at the right time'. The building may be unconventional to look at and resembles no neighbour. But, evoking a hybrid of building and upturned boat, with the blatantly functional elements of wind turbines and cowls recalling similar nautical elements, it is apt to its site.

It responds to the road bend it sits on, terminates the buildings behind and steps down to the empty wharf in front of it, and the roof extending over the ramp is a generously welcoming gesture. The courtyard is well sheltered from wind, and much of it from the rain too. Already it has attracted interest for a craft fair and could host farmers' markets and so on. Trees have yet to be planted and the court has been left deliberately to see what demands are made on it and how it might be finished, perhaps with the placing of benches.

If the design raises a quibble, it is that no uses spill on to the south-facing quay, and the backward slope of the wall feels unwelcoming. Despite the flooding and the protection offered against the corrosive, spray-laden winter winds, this seems a missed opportunity. Apparently the café deck was to have extended a little way back along the quay, but the space was needed to lower the end turbine. Besides, as Marston says, it is apt that the quayside seems part of a public promenade.

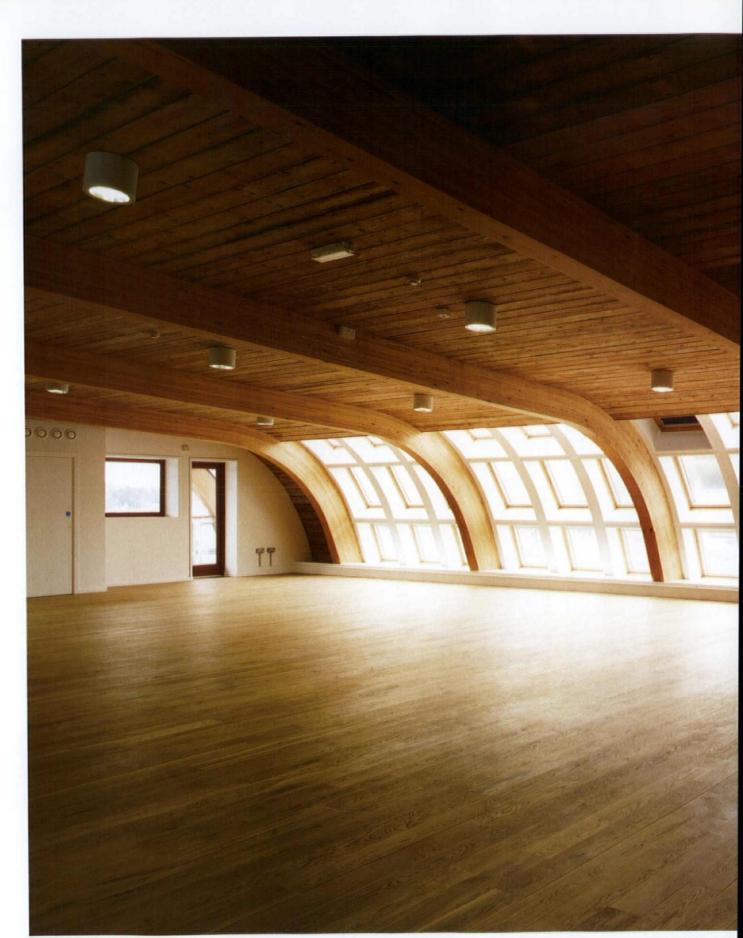
Jubilee Wharf is clearly another milestone in green design and a tribute to the dogged commitment of client and architect. Critics and architects, the latter feeling guilty about not making similar commitments, should not carp about time and budget overruns that will not matter in the long term. This is no fashion statement, but the inevitable future, to learn from and emulate – now made easier because Dunster has ensured the ready availability of the technology.



5. The lower down-wind block is designed to lift the wind up and over itself, the court and the taller block without turbulence



6. The upper floor shelters a walkway to the café, and the roof eaves reach yet further to guide wind across the court







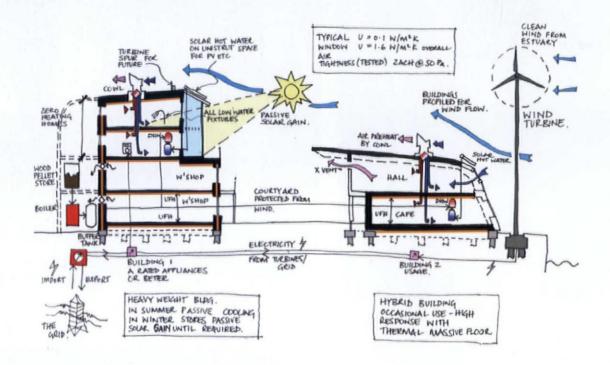
9.

7. A multi-purpose hall occupies the upper floor of the two-storey block

8. The maisonettes evolved from those at BedZED

9. Enhanced community life reduces the need to commute and, arguably, the desperate need to consume

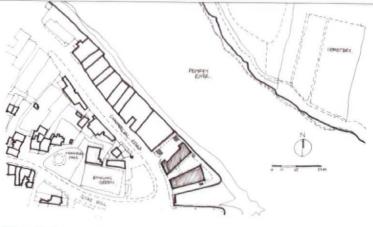
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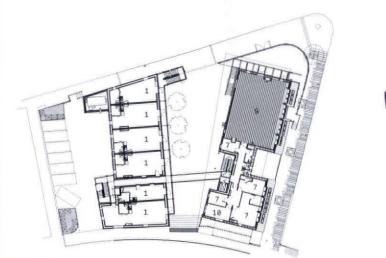
M&E, ENERGY AND BUILDING PHYSICS

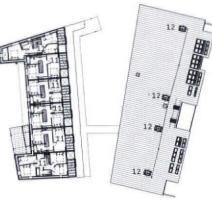
Jubilee Wharf had not only to make a step change in its response to climate change, but also to do so at an appropriate cost. While larger projects are able to support the added design time for delivering innovation, smaller schemes inevitably bring hard choices between investment in design or in construction. The approach adopted here was to use an experienced design team which had previously delivered all of the technologies, thereby minimising design time. Arup's primary role involved concept design work, preparing a detailed set of employer's requirements and thereafter acting as troubleshooter for the team. The prerequisites for this lighter design touch included: using only design aspects thoroughly tested by the same team on previous projects; specifying specialist suppliers who have a proven design capability (as opposed to choosing them based on lowest cost); and having an architect with sufficient experience of the technical aspects to act as the team's eves and ears on site. While it would be nice to have analytically quantified such aspects as the wind turbine annual energy yield for this location, the priority went into getting the right order of magnitude of energy saving and renewable-energy generation, leaving more funds for buying the systems. Jubilee Wharf is expected to achieve very low energy demands, of the order of 50kWh/m². This involved the application of super-insulation levels; exceptional envelope airtightness; wind-powered heatrecovery ventilation to avoid fan power; low hot-water-demand fittings; and close specification of maximum installed electrical demands. With the aim of achieving a zero carbon rating, this was then matched to four 6kW wind turbines, a 75kW wood-pellet boiler with heat stores, and solar hot-water systems. Wiring is installed ready for the future installation of micro wind turbines and PV. Chris Twinn, Arup

10. Diagram showing the energy flow around the buildings

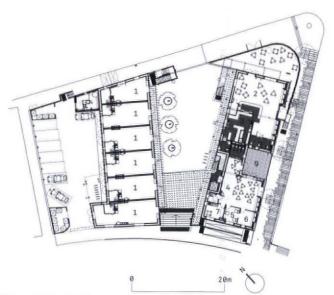


Site plan





First-floor plan



Ground-floor plan

Third-floor plan

KEY 1 WORKSPACE 2 CAFÉ/BAR 3 KITCHEN 4 NURSERY 5 BABY ROOM 6 QUIET AREA 7 OFFICE 8 PLAY AREA 9 MULTI-PURPOSE HALL 10 LETTABLE OFFICE 11 MAISONETTE 12 WIND COWL KEY

12 5 12 12 0

Second-floor plan

Costs

Cost analysis based on gross internal floor area. Costs refer to projected final account

£175/m²

SUBSTRUCTURE

Foundations/slabs

Piled foundations; ring beam; damp-proof membrane/ radon barriers; in situ suspended ground-floor slabs

SUPERSTRUCTURE

£90/m² Frame Building one - heavyweight blockwork walls. Building two - blockwork, steel structure and glulam £83/m² Upper floors Building one - 150 hollowcore precast concrete planks, heavyweight blockwork internal leaf walls. Building two - blockwork internal leaf walls (to first floor), precast hollowcore planks, timber to first-floor £68/m² Roof Building one - precast hollowcore planks; 300mm Rockwool insulation; FSC timber frame; Klober breather membrane; 18mm FSC wbp ply; zinc roof on drainage layer (includes future-proofing ridge turbine spurs); and upstands to unistrut. Building two - timber frame; wall into vapour-permeable barrier; 300mm Rockwool; Klober breather membrane; 50mm air gap; 18mm FSC wbp ply and zinc roof on drainage layer £90/m² Staircases and elevated walkways Building one - steel stairs and balconies with concrete infill; internal FSC softwood staircases. Building two - steel balcony and stairs; marine hardwood red angelim FSC decking; concrete stair £152/m² External walls Building one - heavyweight blockwork with FSC western red cedar cladding or self-coloured lime-cement render. Building two - blockwork with self-coloured lime-cement render; timber walls with FSC western red cedar cladding £71/m² Windows and external doors Softwood timber doors and windows with argon-filled double glazing and ironmongery £32/m² Internal walls and partitions Softwood partitions with plasterboard and skim £21/m² Internal doors Softwood solid-core doors and ironmongery INTERNAL FINISHES £51/m² Wall finishes White eco paint; exposed FSC softwood timber trunking; FSC softwood skirtings and architraves £25/m² Floor finishes Building one - residential high-wool-content carpet, ceramic tile; natural lino 'Marmoleum'; epoxy paint. Building two - ceramic tile, reclaimed timber floor to bar; FSC oak floor to hall; natural lino 'Marmoleum'



11. The south wall sweeps to the roof

Ceiling finishes Building one – residential timber FSC softwood trunking; white eco paint. Building two – FSC	£13/m²
softwood timber trunking; white eco paint; plasterboard with skim; reclaimed floor boards with class 0 finish	
FITTINGS AND FURNISHINGS Furniture Building one – kitchen units and workshop tea points. Building two – kitchen units	£17/m²
SERVICES	
Sanitary appliances	£31/m ²
WCs, showers, bath tubs and sinks	
Mechanical installations	£242/m ²
Building one – wood-pellet boiler and silo;	
solar hot-water panels with pipework and associated	
tanks; wind cowls; ductwork and heat-exchange	
ventilation units; underfloor heating pipework and manifolds. Building two – solar hot-water panels with	
pipework and associated tanks; wind cowls, ductwork	
underfloor-heating pipework and manifolds;	
wind turbines	
Electrical services	£96/m²
Boat facility electrical points; electrical installations	
for mechanical installations; low-energy internal and	
external light fittings	
Lift installations	£12/m ²
Building two – disabled lift and dumb waiter	
EXTERNAL WORKS	
Landscaping, ancillary buildings, drainage	£165/m ²
PRELIMINARIES AND INSURANCES	
Preliminaries, overheads and profit	£278/m ²

Cost summary

Item Cost pe	m^2 (f)	Percentage of
cost pe	1 III (L)	total
SUBSTRUCTURE	175	
SUPERSTRUCTURE		
Frame	90	5.3
Upper floors	83	4.8
Roof	68	4.0
Staircases	90	5.3
and elevated walkways		0.0
External walls	152	8.9
Windows	71	4.1
and external doors		
Internal walls and partitions	32	1.9
Internal doors	21	1.2
GROUP ELEMENT TOTAL	607	35.8
INTERNAL FINISHES		
Wall finishes	51	3.0
Floor finishes	25	1.5
Ceiling finishes	13	0.8
GROUP ELEMENT TOTAL	89	5.2
FITTINGS AND FURNITURE	17	1.0
SERVICES		
Sanitary appliances	31	1.8
Mechanical installations	242	14.1
Electrical services	96	5.6
Lift installations	12	0.7
GROUP ELEMENT TOTAL	381	22.3
EXTERNAL WORKS	165	9.6
PRELIMINARIES & INSURANCE	278	16.2
TOTAL	1,712	100.0

Cost data provided by David Hibbert, James Nisbet and Partners

Credits

Tender date	
October 2004	
Start on site date	
November 2004	
Contract duration	
23 months	
Gross internal floor area	
$2,100 \text{ m}^2$	
Form of contract	
GC/Works/1	
Total cost	
\pounds 3.6 million	
Client	
Robotmother	
Architect/project manager	
ZEDfactory: Matthew Hoad, Asif Din, Leigh Bowen,	
Susan Venner, Bill Dunster	
Main contractor	
Midas Construction	
M&E engineer	
Arup	
Structural and drainage engineer	
Mark Lovell Design Engineers	
Quantity surveyor and planning supervisor	
James Nisbet and Partners	
Subcontractors and suppliers	
M&E Project Heating; structural steelwork CSS; metalworks	
Mid Cornwall Metal Fabrications; carpentry Tim Luscombe	
Construction; masonry NJ Curnow Construction; groundword	
Shaun Conway Baker Groundworks; roofing Boss Metals;	
decorations Kincaid Decorators; plastering/render Keith Towsey	IJ
Plasterers; boiler Wood Energy; cowls ZEDfabric; wind turbine	
Proven Energy; FSC hardwoods Eco Choice; reclaimed materia	
BioRegional Reclaimed; exterior timber Tino Rawnsley	
Woodland Products; windows and doors Rationel; aluminium	
flashings Jude Aden; FSC timber and main materials Jewsons	

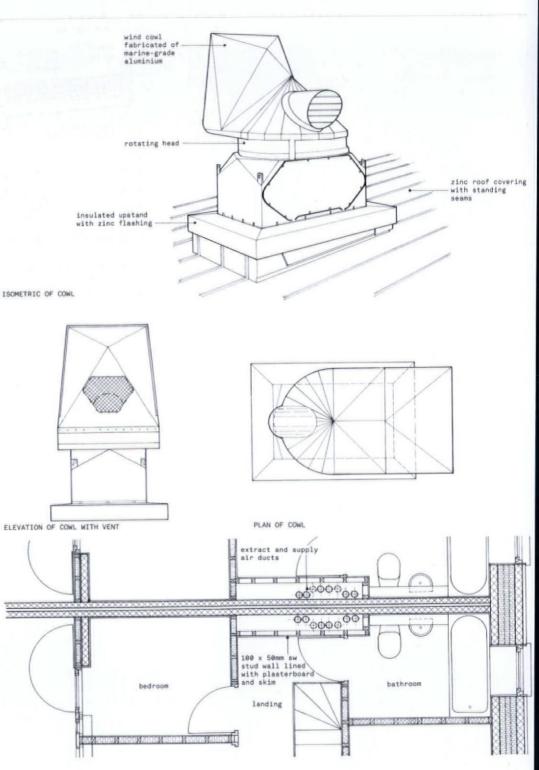
WORKING DETAILS / JUBILEE WHARF

A BUILDING WITH WIND COWLS FOR NATURAL VENTILATION

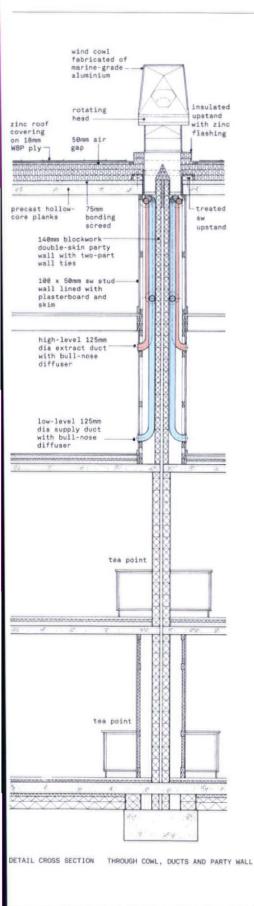
Building One of the Jubilee Wharf development is a fourstorey building with maisonettes on the upper two floors and workshops on the ground and first floors. Designed to be highly airtight (tested to 1.5 air changes per hour at 50 Pascals), the roof of the building is fitted with a series of wind cowls to provide fresh air without wasting valuable heat, particularly during cold weather. The wind cowls allow all the rooms in the maisonettes to be naturally ventilated, without the need for electric fans or complex controls.

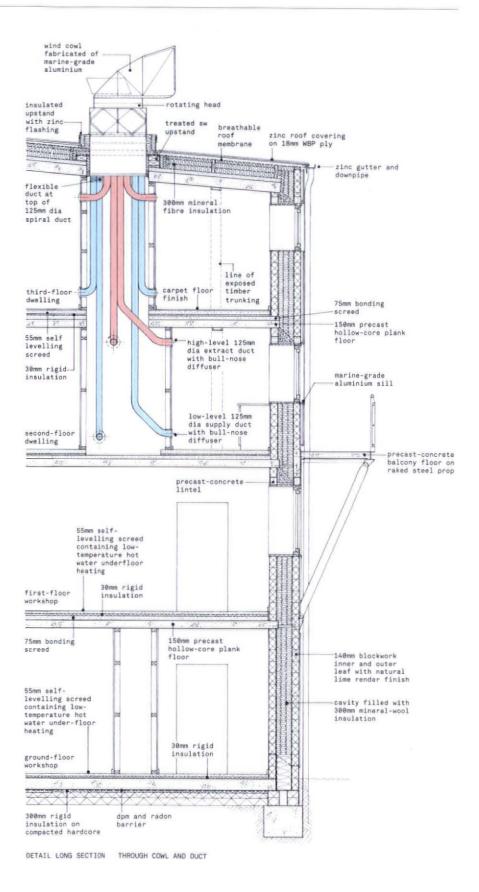
The wind-cowl head is made of marine-grade aluminium with air-extract vent and air-supply intake at opposite ends. A contra-flow heat exchanger is set below the head so the extracted warm air heats fresh incoming air. Each room has a supply-outlet duct at low level and an extract duct at high level.

The ducts are housed at each party wall in an enclosure of timber studs lined with plasterboard. Due to the resistance of air in a lowpressure passive design, duct geometry is limited to two 45° turns on any duct run; the horizontal length after the second turn is limited to 300mm. These design parameters were considered early in the building layout to achieve the correct spatial design alongside the demanding ventilation parameters. By Susan Dawson



PART PLAN AT THIRD FLOOR SHOWING DUCT





AJ 14.12.06



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TECHNICAL & PRACTICE / UPDATE



 Bennetts Associates' scheme for the Green Consortium at King's Cross (Conference)



 New education building at the Centre for Alternative Technology (News)

THIS WEEK ONLINE

• A longer version of this week's article on solarthermal energy appears on www.ajplus.co.uk with more detailed information about data sources, contacts, grants and installers. Solar thermal can meet somewhere between 30 and 45 per cent of hot-water requirements for most households, and gives the highest return on investment of all the solar options.

TECHNICAL NEWS

• Grants for renewable-energy installations for the public sector are now available through phase two of the Low Carbon Buildings Programme (www. lowcarbonbuildings.org.uk). Phase one, which includes the private sector, is already running. Phase two offers grants of up to £1 million to support photovoltaics, solar thermal, biomass, wind and groundsource heat-pump systems.

• The Code for Sustainable Homes replaces EcoHomes in England for new build in April 2007. EcoHomes will still apply to refurbishment and to Welsh and Scottish dwellings.

• The Wales Institute for Sustainable Education (WISE), a new eco-building at the Centre for Alternative Technology (CAT), will go on site in 2007. The centre will house CAT's MSc in advanced architecture: energy and environmental studies, which began five years ago and now has over 350 students enrolled.

TECHNICAL EVENTS

Introduction to BREEAM for Schools 10 Jan, Bristol 11 Jan, BRE, Watford 24 Jan, Manchester www.bre.co.uk/events

Energy Use and Comfort in Buildings

17 Jan, 10:00am-1:30pm London Metropolitan University, Holloway Road, London N7 www.nceub.org.uk

Sustainable Building and Services 18-19 Jan, Taunton 8-9 Feb, Edinburgh 8-9 March, Plymouth A two-day course which is a prerequisite for joining the Green Register. www.greenregister.org.uk

CONFERENCE

Highlights from the AJ Sustainability Conference held on 5 December.

· In addition to showcasing pioneering examples, discussion focused on how to prioritise different sustainable strategies and how to source green materials. The BRE's Green Guide to Specifications provides environmental-performance data for building specifications in a user-friendly format. It will be expanded into other sectors beyond homes and commercial buildings in 2007. See www.bre. co.uk/greenguide and www. bre.co.uk/envprofiles. Also, www.greenspec.co.uk will expand to include a National Green Specification in 2007, which, it says, will be complementary to NBS.

 Several speakers criticised the government's 10 per cent renewables policy for encouraging the use of renewables on buildings that have not been designed from the outset to be energy efficient.

TECHNICAL & PRACTICE

THERE IS GREATER POTENTIAL FROM SOLAR ENERGY AT HIGHER LATITUDES

By John Gilbert

This article on solar thermal systems is the last in the AJ's renewables series to appear in the magazine, although a piece on labyrinths and buried tubes will appear on www.ajplus.co.uk. An extended version, including more on the technology and its longevity, is also available on the website, along with related information on data sources, contacts, grants and installers.

We don't need to heat our houses in the summer because the sun shines longer and more directly on our hemisphere; we need heat in winter when the sun is low and the skies are clouded with snow and rain. Since we use hot water throughout the year, solar water heating is an effective way of saving energy year-round. Solar energy can also contribute directly to heating in winter, though this can make the technologies more complicated and the gains less effective. Passive solar gain, which is integral to the design of our buildings, is likely to be a more effective way of using the sun's energy for space heating.

There is a presumption that using solar energy is more effective in southern climates. In the UK, the further north you go the colder it gets – and thus the longer is the heating season and the less the solar gain. However, the reduction of solar gain is less than the increase in heating demand, so there are greater potential savings from using solar thermal energy in higher latitudes.

Solar gain is also dependent on solar intensity; the east coast of Scotland, for example, fares better than the cloudier west coast; higher areas slightly better than low-lying areas. During the heating season, about three quarters of the solar radiation is diffuse due to cloud cover, so a rooflight will then collect more energy than a window.

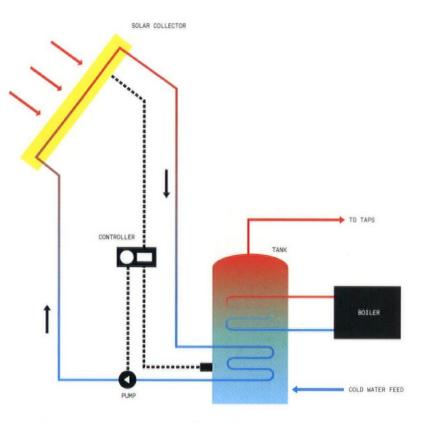
Like many other sources of renewable energy, the supply of solar radiation is intermittent, so some way of storing this energy is essential if it is to be used. Thermal storage, say in hot water, rock stores or the building fabric, needs to be matched to the pattern of need.

DOMESTIC SOLAR WATER HEATING

In the UK, solar panels can provide on average of about 30-45 per cent of the hot-water requirements of domestic properties. This percentage can be higher depending on the design and storage, but we can estimate that savings of 1,000-1,500kWh per year can be obtained for a household (annual use is about 3,000kWh). As a rough guide, a typical household would have anything between 3 and $5m^2$ of solar panels for hot water, the area varying with panel efficiency and demand. Such a domestic system could cost £2,500-£4,000 installed, so the take-up has been slow. However, they still give the highest return on investment in free energy of all the solar systems.

There are three main collector options:

• flat plate collectors – at their simplest, solar water heating panels are made from a sheet of metal painted black, which absorbs the Sun's energy. Water is fed through the pipework embedded in/on the metal sheet, thus picking up the solar energy. The metal sheet is set in an insulated box and covered with glass or clear plastic;



1. A domestic pumped system (Solar Trade Association)

evacuated tubes – this system is more advanced because it uses glass tubes within which a metal absorber collects the heat and transfers it to a manifold at the end of each tube. The tubes are highly insulated, due to a vacuum in the glass. While more efficient than flat plate collectors, they are also more costly; and
unglazed collectors – often used for heating swimming pools or where a lower output temperature is required. The panels use an antifreeze mixture. They can be made from plastic or stainless steel and integrated into the roof. They are cheaper than glazed systems.

INTEGRATED SYSTEMS

Since solar hot water is easily stored and useful throughout the year, there are most efficiencies in using panels for this. However, some boilers are designed to accept preheated water from solar water panels, allowing solar energy to contribute to space-heating.

Projects where the space heating is provided by a heat pump (eg. a ground-source system) will usually have their own thermal store and distribute heat to a low-temperature underfloor system. In these cases it can make sense to connect solar water panels to that thermal store, thus providing additional free heat throughout the year. However, generally it is more efficient to keep the solar thermal store independent of other heating devices.

PERFORMANCE

Panels vary in efficiency. Some have 'selective surfaces' - these are films which absorb a higher proportion of solar radiation, and are about 10 to 15 per cent more effective than 'non-selective' films. Double-skinned surfaces are also used and work well in cold conditions. Polycarbonate, acrylic and polyester sheet, Teflon and Tedlar films are all used as well as glass. Thin membranes like Tedlar and Teflon have improved shortwave transmission. The lessefficient panels can be made bigger to provide similar annual gains.

Most simple flat-plate collectors will provide domestic hot water in summer. However, if solar energy is also contributing to heating (in winter, and often cloudy weather) better results are likely to be obtained from double-glazed panels with selective surfaces or from evacuated tubes.

A DTI comparison of eight solar panels has shown that it is also important to know the parasitic electrical losses that accompany some panel systems for powering pumps, etc. An interesting alternative is the Solartwin panel, which has a small photovoltaic collector attached that drives the pump, thus matching the flow of water to the solar supply.

Selection of suitable storage and designing the system to address the timing of hot-water requirements can be critical. Hotels, for example, which use significant amounts of hot water, can benefit from solar heating. However demand for hot water is high in the mornings and evenings, so any design has to match the solar gain to the period of use through thermal storage.

Swimming pools require large volumes of warm water so unglazed collectors can be most appropriate for use here, with the pool itself acting as the thermal store for this system.







4

 Evacuated tubes - can also be roof mounted (AE Solar Systems)

3. Solartwin panels with PV to power pump

4. Curved Energie Solaire panels at Vilanova

However, where the pool also has a heating system, glazed collectors (which are more efficient) can contribute to the system by way of a heat exchanger.

There are advantages in implementing solar thermal as communal systems, for example by providing a single thermal store which contributes heat to each flat, but keeping all the solar panels and control systems close together.

PLACING AND POSITIONING

The best orientation at our UK latitude is slightly west of south, with a tilt of 30°-35° to the horizontal. But panels can also be orientated anywhere from south east to south west with a tilt varying between 10° to 60° and still perform well. The steeper angles will increase solar collection during spring and autumn at the expense of summer surplus. British Standard BS5918 provides information on procedures for estimating performance.

Panels are often fixed on top of existing roof coverings. Normally planning consent will not be required, unless the building is listed or in a designated area. But in all cases it is best to consult your local planning department to check on specific conditions.

SOLAR AIR COLLECTORS

Solar air collectors consist of an absorber panel of black-painted metal encased with a glazed face. Warm air accumulates within and circulates from the collector to the adjacent room by natural convection. Simple wall-mounted collectors can be added to blank south facing walls (vertical is not the ideal mounting angle). The same principle works to provide solar preheated ventilation; some window designs incorporate a base panel which draws preheated air into the trickle ventilation system.

Solar air collection is perhaps most effective when a positive-pressure ventilation system can take preheated fresh air from a solar collector. It is also possible to use the roof tiles or slates as solar air collectors, as they can be at least 10°C above the incoming air temperature when it is collected through the space under roof tiles (best when south facing).

SUNSPACES AND CONSERVATORIES

Sunspaces are basically habitable solar air collectors. They work best when the wall and floor they are attached to have a high thermal mass and can be used to store the heat gained throughout the day. Ventilation to internal rooms is essential to allow the transfer of heat inside.

Since sun spaces are only meant to be heated by the sun, they should be kept small, otherwise there is a tendency for people to use the space in winter and heat it, wasting energy.

In flatted properties with small open balconies, these can be enclosed as sunspaces. Simple single-glazed systems are available where the glazing is frameless and the windows can be slid back to provide open balconies in hot weather.

John Gilbert is principal of John Gilbert Architects in Glasgow



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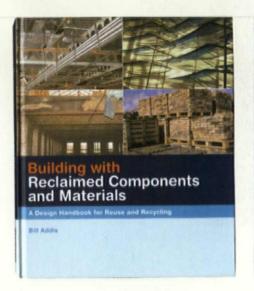
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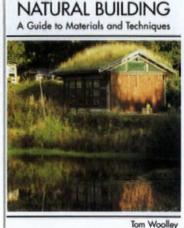


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TECHNICAL & PRACTICE / SUSTAINABLITY BOOKS





foreword by Jonathon Porri

Building with Reclaimed Components and Materials: A Design Handbook for Reuse and Recycling By Bill Addis. Earthscan, 2006, £49.95

This is a must-have book for any architect serious about sustainability. As Thornton Kay of Salvo explains in the foreword, 'reuse [is finally] figuring on the construction radar... and the salvage and reclamation trades must evolve from a cosy love affair between maverick dealers and upmarket homeowners to... harness the... interest of the construction industry.'

Bill Addis of Buro Happold, with input from BSRIA and National Green Specification, tells you just how to do it and explains the realities of the reuse and recycling marketplace. The design and procurement process is entirely different from the traditional way of working, because suitable materials must be sourced before detailed design can begin, rather than designing and then specifying as for new-build.

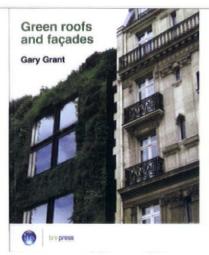
The first chapters set the scene and explain the process with a handful of useful case studies. Subsequent chapters provide design guidance on different building components: foundations, structure, envelope, interiors and external works, and mechanical and electrical. For each building element, three types of reuse are considered: reuse in situ, reuse of components from another building, and use of materials which have recycled content. A fascinating read and a useful reference manual, which is worth every penny. Natural Building: A Guide to Materials and Techniques By Tom Woolley. The Crowood Press, 2006, £19.95

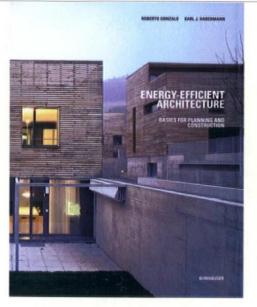
Tom Woolley, known for the Green Building Handbooks, has produced this book on natural building, which covers earth; timber; straw bale; green and natural roofs; lime and stone; hemp with lime or earth; natural insulations; and paints and finishes. Environmental impact, beauty and harmony are his guides.

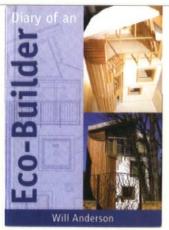
Too short to be a manual on all these technologies, it is, even so, a very practical book on building processes and their pros and cons, touching on cost, regulations, planning, insurance, etc. Architects need to know all this, but could use more on design possibilities, such as heights and spans, when the materials are used structurally. While most examples are on the domestic scale, a few are significantly larger, like Alec French Architects' Kindersley Centre (AJ 15.07.04).

One topic that is fully illustrated but little discussed in the text is what green architecture looks like. Most projects illustrated are hairy, many self-consciously hand-made in appearance, located on their own rural sites. An expressions of their builders' whole-earth aspirations no doubt, but not necessarily the most useful message to the majority, who live in cities and suburbs. For them likewise, there is nothing much on refurbishment and retrofit.

For those who want to embrace these building technologies wholeheartedly this is a useful and readable book, enhanced with many good photographs and sketch details.







Green Roofs and Facades By Gary Grant. BRE Press, 2006, £22.50

The title and cover of this book are very promising, but it disappoints. For the uninitiated, it provides a satisfactory overview of green roofs around the world, but much of this can be found on green-roof websites, with more informative technical detail for architects. It sails through the history, policy, benefits, design, construction and maintenance of green roofs with too many generalities and not enough specifics. Photographs of appealing projects enliven the text but minimal information is provided.

Grant, an ecologist, is at his strongest when discussing planting and biodiversity. A definitive book on green roofs in English remains to be written, or perhaps translated from German, as green roofs abound in Germany, as does in-depth technical information. Nevertheless, the book is a good starting point.

Energy-Efficient Architecture: Basics for Planning and Construction By Roberto Gonzalo and Karl J. Habermann. Birkhäuser, 2006, £59.90

This is a beautifully presented book by two Munich architects, one the former editor of *Detail*. An introductory historical chapter, which surveys vernacular to Modern examples, is followed by two chapters devoted to urban design, one which outlines basic principles and another which presents seven, mostly German, examples (as well as Hopkins' Nottingham campus). Two more chapters are devoted to buildings, first principles, and then 14 case studies (Hopkins again, the Parliament Building) and a final chapter looks to detail design and technical issues. In today's world of mounting pressure for sustainability, BREEAM, and rapidly evolving technologies, the level of detailed information in this book could be much more extensive. Mostly useful as a reminder that sustainable design can produce good architecture.

Diary of an Eco-Builder

By Will Anderson. Green Books, 2006, £14.95

Serialised in the Property section of the *Independent*, Anderson's very personal diary is an entertaining read and is full of information, too. He waxes lyrical about each step along the way towards the realisation of his 'Tree House' in Clapham, south London (completed in March 2006), including first-name references and photographs of every individual who participated in its construction. This gets a bit long-winded in places, but is interspersed with informative photographs and boxes highlighting resources and references. One may not be attuned to all of Anderson's aesthetic choices, nor his unremitting green zeal (upon moving into Tree House, he made a lifestyle choice never to fly again), but anyone involved in small-scale residential design projects who wants to bone up on the latest eco-choices will find plenty of useful information here – and good reason to smile. A decent stocking filler.

TECHNICAL & PRACTICE

THE GREEN BUILDING COUNCIL WANTS TO TAKE GREEN DESIGN TO THE MAINSTREAM

By Hattie Hartman

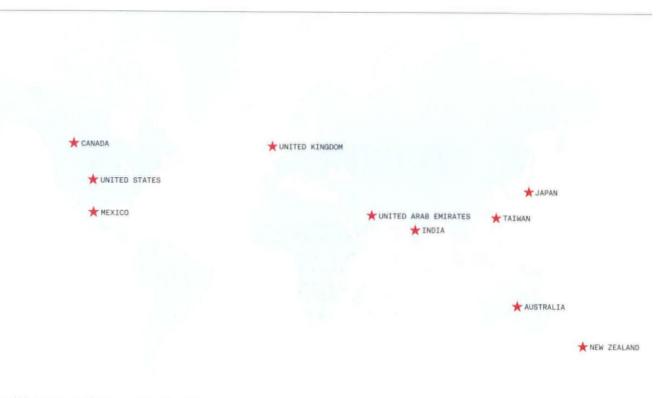
Next year the UK is set to launch its own green building council, to join other such organisations across the world. How will this council work and what effect will it have on green building in this country?

Does the UK need uet another not-for-profit group to champion the cause of energy-efficient building? The founding partners of the UK Green Building Council (GBC) evidently think so. Each has committed £15,000 a year over two years to provide start-up funding for this industry-wide coalition, whose mission statement is to 'radically improve the way [buildings] are designed, built and maintained.' The key points about this organisation are that it is industry-wide and self-funding. Everyone agrees that the UK is ahead when it comes to green building design. UK sustainabledesign services are in demand abroad, and the BREEAM programme administered by the BRE Trust has a strong track record, but this same thinking has yet to penetrate through to construction, building management, and product manufacture. The UK Green Building Council, to be launched officially in early spring 2007, is about transforming green design from a design-led activity to the mainstream, and that means involving big business.

The idea for a national coalition for energy efficient building emerged from the 2004 Sustainable Building Task Group Report which identified many 'high-quality diffuse' organisations serving different constituencies, which meant replication of activities and a lack of overall momentum. David Strong, BRE director for environment, who has been a driving force behind the creation of the UK GBC, explains that the UK context differs significantly from the situation in the US, where there was a vacuum waiting to be filled when the US GBC was established in 1995. At that time, there was no American equivalent of BREEAM. The US GBC now has 6,500 member organisations and a staff of 60, with an annual turnover of over \$24 million in 2005. In the UK, there are more than 300 existing entities, some with extensive programmes and expertise, which deal with different aspects of sustainable building. Strong believes that all this activity will be channelled and reinforced by the creation of a UK council, which will enable 'cross-sector knowledge sharing'. The UK council will join nine other existing GBCs; another 20 or so countries have GBCs in formative stages. Each GBC operates independently and tailors its requirements to its own country. These can vary greatly depending on climate, the regulatory environment, and construction and design.

The UK GBC prospectus and website are full of words like 'radical', 'transform', and 'passion'. It is setting its stakes high, with a lot of important names among its founders. This may seem at odds with the grassroots origins of the green building movement, yet Strong believes a decentralised committee structure will enable the organisation to tap into the expertise of its varied membership.

The founding members are from all sectors of the industry and the dues structure of the membership will reflect this broad church. An interim board is to be headed by Peter Rogers of Stanhope, and a search is under way for an executive director.



The UK green building council will join nine others around the world

A major activity of the US council has been the implementation of LEED, which to date has assessed just over 400 projects. The UK is way ahead with BREEAM, which has assessed over 65,000 buildings and has another 270,000 in the pipeline. Even though these numbers are misleading, as they include multiunit housing projects, the difference is immense. The relationship between BREEAM and the UK GBC is currently under discussion.

Membership dues, training, and events are likely to be the mainstays of the UK GBC. Four committees are being established: advocacy, marketing, technical, and education; training; best practice; and research. The US GBC's GreenBuild, now in its fifth year, was held in Denver in November, with over 500 exhibitors and more than 10,000 delegates from 30 countries.

Clearly the US GBC has stimulated the green-building movement in its country. LEED is now required in many public buildings, and clients demanding greener buildings are forcing the industry to catch up. Its UK counterpart will enable knowledge sharing and start to pressure the supply side of the industry. Supportive government policy will also play an important role. However, the UK GBC enters a crowded field and will have to act strategically to make a significant impact. Its toughest challenge may be to earn the goodwill of the many organisations that have been out there doing good work for a long time and convince them to join the newcomer on the block.

For more information visit www.ukgbc.org

FOUNDING MEMBERS OF THE UK GBC

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DEDICATED SCOTS NOW SWIMMING WITH SHARKS

You don't normally think of the architectural internet as shark-infested waters. It's more a bunch of earnest, nutty and sometimes gifted architectural buffs behaving in a quite genteel way.

Readers will know I'm a fan of two pioneering Scottish websites:www. edinburgharchitecture. co.uk and www.

glasgowarchitecture. co.uk, which are run on a shoestring by an architect and his wife who fall into the gifted and, not so much nutty as dedicated/obsessed, category. A lot of web users agree, given the 30 million hits the sites get a year. Like the big commercial websites, such as our own www. ajplus.co.uk, their news is updated daily and they offer a satisfying range of side benefits such as tours, job ads, events and even such things as restaurant guides.

In swims what looks like a Great White - www. architecturescotland. co.uk. This is a commercial site funded by the Carnyx Group's Prospect magazine. I'm all for competition but this looks a bit unequal: a single site funded by a business and two pioneer local sites funded by a bloke's salary. Which will win? My money is on local and dedicated/obsessed. sutherland.lyall@btinternet.com

COURTING SUCCESS

The Technology and Construction Court (TCC) has enjoyed a chequered history writes Kim Franklin. Once languishing in a hidden corridor deep in the labyrinth of the Royal Court, the construction court was presided over by judges known then as 'Official Referees'. Few outside the rarefied circles of construction law knew what it did, and only the specialist practitioner knew where to find it. In those days the law of tort featured prominently in most construction cases and lengthy, multi-party actions clogged up the judges' interminable lists.

Then the Official Referees' Corridor was relocated to a new building and subsequently reinvented as the TCC. These changes coincided with dramatic changes in the law, limiting building claims to contract only. Not much later, adjudication took off as the first port of call for construction disputes and there was a dramatic downturn in the workload of the TCC. The judges, who had always been masters of their own procedures, developed diverging and idiosuncratic styles of case management, which were not always appreciated by the punters. The combination of declining workload and loss of consumer confidence raised fears for the future of the courts.

While some believed its time was up, others recognised the importance of the specialist court as well as the need to preserve it.

Recent innovations may have stemmed the tide of decline and turned the fortunes of the court. In this respect the TCC's annual report for 2006, produced by the judge in charge, Mr Justice Jackson, makes interesting reading.

First, the team has been boosted. The London TCC now comprises two High Court judges, Jackson and the recently appointed Mr Justice Ramsey. The five senior circuit judges sit together with a panel of five reserve commercial-court judges who can be called upon if the need arises. A further four full-time TCC judges sit outside London.

Second, business is picking up. Nearly 400 new claims were brought in the London TCC, of which a third were construction cases, nearly a quarter related to adjudication, and the remainder concerned professional negligence and other cases. More than 300 cases were started in the various courts outside London, nearly half of which were dealt with in the TCC in Salford alone.

Of these 700 or so cases, fewer than 15 per cent were contested through to judgment, demonstrating the well-known point that the vast majority of cases settle before trial.

Third, there is now a spring in the step of the TCC. This

can be seen from initiatives such as the latest edition of the TCC Guide, which debunks some of the mythology surrounding procedure in the TCC, and the recent review of the problems of delay and expense arising out of compliance with the Pre-Action Protocol. Changes to the protocol are expected in the New Year.

While it may be too soon to pass judgment on the TCC and the work of the new judges, it is clear that the construction courts may be on the mend.

Kim Franklin is a barrister and chartered arbitrator at Crown Office Chambers in London. Visit www. crownofficechambers.com 17th January 2007 27 Sussex Place, London, NW1







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REVIEW



EXHIBITION

By Penny Lewis

Northern City (Between Light and Dark) At The Lighthouse, 11 Mitchell Lane, Glasgow, until 4 March



1. One of Latitude's panoramas

2. Gross Max's reimagining of Saint Jerome in his Study

If it is possible to read a city, Edinburgh makes a great story. The rugged landscape and successive human interventions have stirred literary imaginations for three centuries. The city is often linked to R L Stevenson's Dr Jekyll and Mr Hyde, suggesting a place of hidden contradictions in which dark and light, poverty and wealth, modernity and tradition, rationalism and romanticism, are written into the urban grain.

'Northern City' sets out to respond to the idea of the contradictory city and to investigate both the Scottish Enlightenment and the work of Patrick Geddes. The show is made up of four artworks: one by the artist Nathan Coley, another by landscape architect Eelco Hooftman (Gross Max), and two collaborative projects between architects and artists – Northroom, by artist Victoria Clare Bernie and architects Mark Dorrian and Adrian Hawker; and Latitude, by artists Dalziel + Scullion and Sutherland Hussey Architects.

Each of these works embraces the idea of the Enlightenment with a different degree of enthusiasm. In Old Town New Town No Town Hooftman has created a small study space (complete with curios such as a stuffed grouse, land models, postcards and books) where the visitor is invited to dwell on the work of the city's intellectuals. On the reading desk is an adaptation of a Victorian city quide in which Hooftman has inserted futuristic passages designed to challenge our rather sentimental view of what constitutes the natural world.

In the book, Dolly the Sheep is hunted by a wolf on Arthur's Seat and Miralles' parliament has become a ruin.

Coley's work, a big single line of illuminated green text, spells out the words 'We Must Cultivate Our Garden' - a phrase spoken by Candide in Voltaire's novel. It's an ambiguous statement that could be understood as an argument for social 'cultivation' or an argument for the quiet life. Latitude is reminiscent of the mechanical contraptions that pioneering scientists built to understand the universe, and of Geddes' Camera Obscura. A panoramic screen rotates slowly on a long arm while the film pans slowly around Edinburgh, providing a cross section of the city from skyline to roads. Northroom is a reinterpretation of the David

Hume mausoleum on Calton Hill designed by Robert Adam. The work uses 31 small DVD players to catalogue the impact of the passage of time on the flora surrounding the roofless stone drum.

Some of the show's contributors suggest that Edinburgh's contemporary dirty secret is the urban poor who have been driven to the city's periphery. It's a poetic description, but it doesn't quite grasp the social reality. Of course there is poverty and excessive wealth in the city, but the premise that Edinburgh remains a place 'whaur extremes meet' is not convincing. Nevertheless the idea is an interesting starting point for an artistic exploration.

Penny Lewis is editor of Prospect, the Scottish architecture magazine

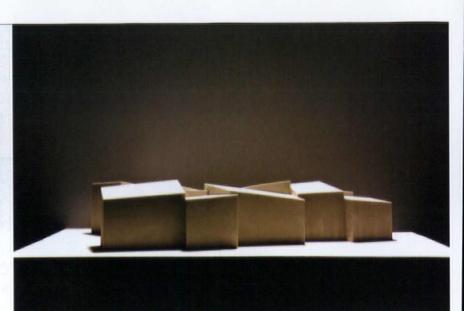


1.

EXHIBITION

By Kenneth Powell

Adjaye in Wakefield: A City in Transformation At The Orangery, Wakefield, until 2 February



2.

Model of Adjaye's market hall
 Chipperfield's Hepworth Gallery

'There is little of architectural attraction in the planning and buildings of Wakefield,' said Pevsner. Yet the former county town of the West Riding has a magnificent set of 19th-century public buildings and some good Georgian streets and buildings, including the delightful survivor that houses this exhibition - the Orangery. The 20th century, however, sold Wakefield short. Post-war development in the centre was of generally execrable quality, with new roads adding to the mess.

David Adjaye's proposed market hall, a fine model of which forms the centrepiece of this exhibition, is set to spearhead the renaissance of a substantial segment of the central area of the city, north of the cathedral (a fine medieval parish church by origin). Here faceless sheds and slabs sprawl along the Marsh Way inner ring road – the market hall site was occupied until recently by a squalid bus station.

A masterplan for the entire area has been developed by the locally based DLA Architecture, based on urban design studies by Koetter Kim and Jan Gehl and with a strong input from Public Arts (which runs the Orangery). Developer Simons has planning consent for a mix of retailing, housing, a new central library and public space on the site. The architecture looks straightforward - it is the spaces around it that will make or break the f.175million scheme.

Adjaye's market hall is the icing on the cake. Costed at around $\pounds 5$ million, it's a no-nonsense structure, partly enclosed, partly just covered open space, which should give local market traders a major boost. Vernacular roots are cited as inspiring the design, but the use of a variety of economical materials, including timber and polycarbonate sheet; the application of strong colour and the management of natural light are all typical of Adjaye's work and entirely appropriate in the context.

The Orangery itself has plans for an extension by SMC Alsop (consented, though not yet funded, despite opposition from English Heritage). The prospects for Alsop's project have probably been enhanced by the emergence of plans (with Carey Jones as architect) for major development around the nearby Westgate station, with the station itself rebuilt – the present facilities are cheapskate 1960s stuff. David Chipperfield's Hepworth Gallery, due to go on site in 2007, is set to be the jewel in the crown of Wakefield's regeneration programme, building on the success of the Yorkshire Sculpture Park a few miles outside the city.

The quality of the building is not in doubt. The site, close to the River Calder, with some fine Victorian warehouses and the remarkable medieval Bridge Chapel nearby, is impressive but somewhat remote. The key to the project's success is linking the site to the city centre. Connectivity was an issue ignored in the post-war rebuilding of Wakefield, but one that is now central to the city's renewal.

Kenneth Powell is an architectural journalist



BOOK By Andrew Mead

Architectural Guide to the Netherlands, 1900-2000 By Paul Groenendijk and Piet Vollaard. 010 Publishers, 2006. 584pp. 49.50 euros (£33)

010's guides to 20th-century Dutch architecture – published both as individual books on Amsterdam and Rotterdam and as a compilation to the country as a whole – have long been a first port-of-call for anyone planning a trip to the Netherlands.

Even more so now, with the appearance of this new volume. It incorporates material from the former *Guide to Modern Architecture in the Netherlands*, and retains the same elegant typefaces, but comes in a different format (portrait not landscape) and has colour photos for all its 1,000 inclusions – not the murky black-and-white of before.

Most entries occupy a halfpage, with concise descriptions in Dutch and English, but major buildings – Berlage's Exchange, the Van Nelle Factory, etc. - are treated in more depth. Maps identify locations but plans are rare. The texts tend to be polite, factual and neutral, even with such dire recent schemes as Weeber's Queens Towers in Amsterdam. Sometimes, however, a phrase leaps out - the Maxis supermarket in Muiden has been 'renovated into oblivion' - or one can read between the lines: for instance, the 1992 town hall by Ruijssenaars which 'defies in both size and subdued monumentalitu the rural character of Apeldoorn'.

But if some Dutch work of the last quarter-century is problematic (and where isn't that the case?), there are many earlier high points, and given the excellent résumés that introduce this book, it serves as a compact history as well as a practical guide.



CRITIC'S CHOICE By Andrew Mead

Three new publications from English Heritage have just appeared, and two of them come with wake-up calls from their authors. Christopher Martin's *A Glimpse of Heaven* $(\pounds 25)$ is a chronological account of 100 Catholic churches in England and Wales from the Reformation to Quinlan Terry's Brentwood Cathedral of 1988. Full-page photos show some notable interiors at their best, whether the sumptuous St Charles Borromeo in Hull ('a fantastical Roman church with a heavy touch of the Austrian rococo'); the sober Gothic of Norwich's Catholic Cathedral; or the surprising simplicity of St Mary's Chapel, Lulworth (*pictured*), whose appeal lies in its carpentry and bluish paint, not in elaborate decoration.

Pugin of course is well-represented; from the 20thcentury Francis Pollen's Worth Abbey stands out; but most impressive overall is *J F Bentley*'s (unfinished) Westminster Cathedral – that huge sombre brick cavern relieved by marbles and mosaics below. One premise of the book is that professional recognition of these churches has been 'slow' and that they're under-listed; meanwhile, roofs leak and dry rot spreads. 'In some places our Catholic heritage is hanging by a thread,' says EH chief executive Simon Thurley.

These sentiments were echoed at the launch of Sharman Kadish's *Jewish Heritage in England: An Architectural Guide* (\pounds 16.99), with news that synagogues had been demolished while the book was in production, and that more were under threat. In contrast to the volume on Catholic churches, this is presented as a pocket-sized guide, organised by region, with descriptive texts, plenty of photos, maps of walking tours, and details about visiting. Some inclusions (eg. Princes Road Synagogue, Liverpool) are remarkably opulent.

Lastly comes the first English Heritage Historical Review $(\pounds 20)$. Scholarly and attractively produced, it inaugurates what will be an annual series from EH, presenting 'new historical discoveries' about buildings in its care. The 10 essays are very varied in their topics, from the Roman amphitheatre at Chester to a 17th-century staircase in Newcastle, via Calshot Castle on Southampton Water, with its battery disguised as a bungalow (www.english-heritage.org.uk). For forthcoming events visit www.ajplus.co.uk/diary



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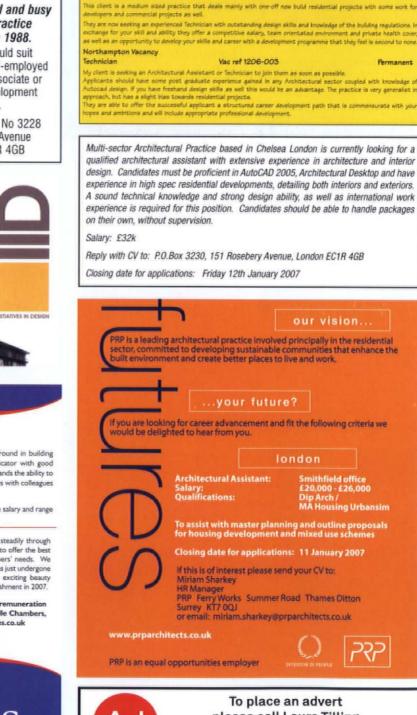
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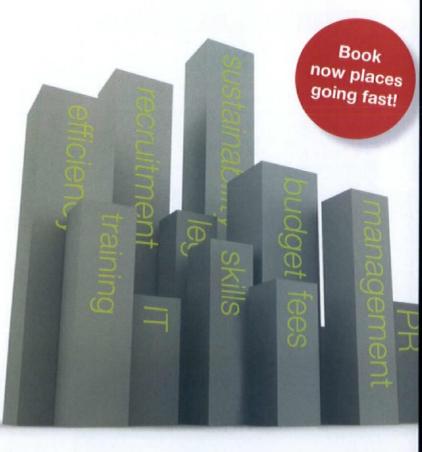
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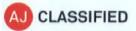
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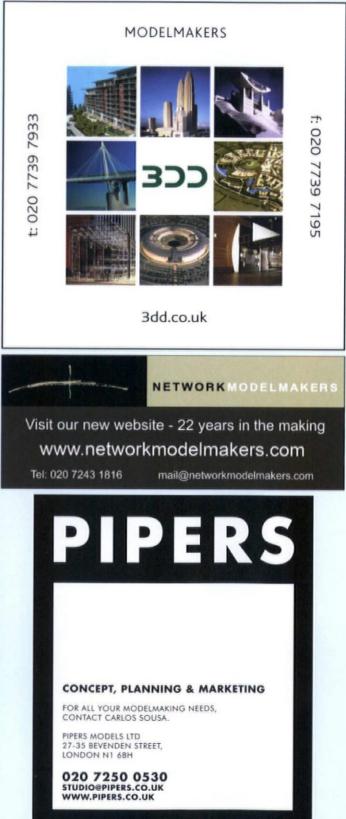


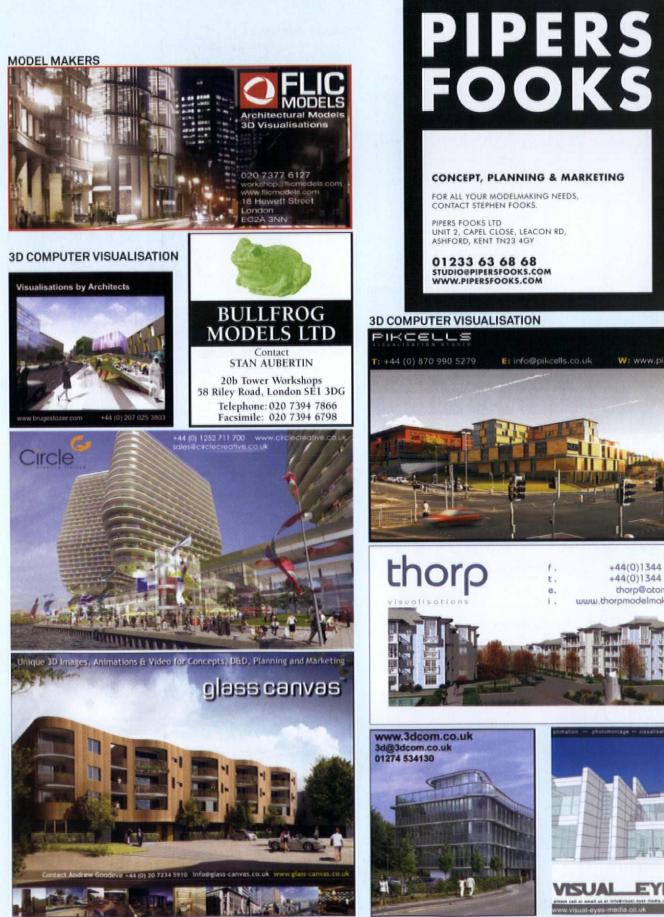
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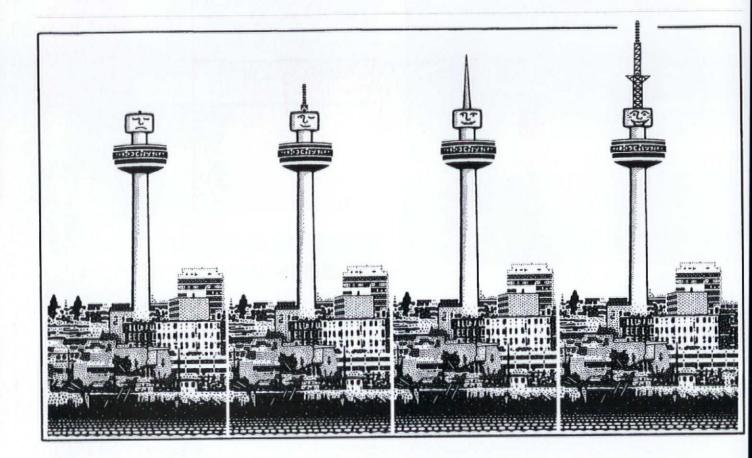
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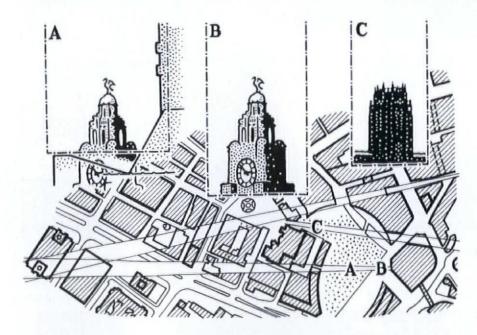
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BISLEY

AJ ENQUIRY 202

Velfac now provides a service for domestic or small commercial projects. Each window is made to order to specifications for design, colour and size, allowing you the freedom of your imagination. The display is at the Kettering showroom. Telephone 01223 897100 or visit www. velfac.co.uk

INTEGRATED DESIGN



AJ ENQUIRY 203

The Fastlane Entrance Control Range is designed to balance the aesthetic and security requirements demanded by today's architects and modern building design. The range includes optical turnstiles, tripods, entrance gates, barrier arm optical turnstiles, speedgates and passgates.



CORUS

KAWNEER



AJ ENQUIRY 204

Bisley, the number one storage manufacturer in the UK, has launched The Bisley Guide to 'Beating Boring' in Office Storage. The guide offers tips on getting the most out of office storage, under such headings as Inside-Out Design, Storage as Structure, Exterior View and Imaginative Design and Storage.

AJ ENQUIRY 206

Corus have launched The Part L - SBEM (Simplified Building Energy Model) Advice Service as part of its ongoing commitment to added value services for the construction industry. The service will be available to specifiers only through the Colorcoat Connection helpline.

AJ ENQUIRY 208

Kawneer's dry-jointed curtain walling, narrow-style doors and casement windows were selected for use in the £12 million Oldham Library and Lifelong Learning Centre project. Almost all the building had to hang on its frame, rather than within it. Visit www. alcoa.com/bcs/kawneer_uk/ en/home.asp

VORTICE



AJ ENQUIRY 205

The introduction of two new AutoCAD workstations combined with an increase in technical staff numbers has allowed Vortice to offer its most comprehensive design service yet. Vortice offers free technical and design assistance and advice for all aspects of mechanical ventilation.



ACO BUILDING DRAINAGE

AJ ENQUIRY 207

ACO Building Drainage has introduced a new range of gravity separators to its portfolio of grease-management systems. The units, which remove harmful fats, oils and grease from waste discharges, are the first in the UK to fully comply with both BS EN1825 and Part H of the Building Regulations.



NSSPlus

A few in your specification could cause confusion. Using the wrong banana in a clause might cause delays, inaccurate pricing or worse.

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