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on page 40. ABK's

competition entry

Pedestrian Bridge -

one of six schemes

shortlisted out of a

monocoque steel deck supported on

suspended from

profiled cast steel

for the Liffey

total of 153 -

featured a

cable stays

pylons.

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WWW.AJPLUS.CO.UK | BUSINESS SERVICE OF THE YEAR - PPAi Awards 2001

Ahrends Burton and Koralek's recent work in Ireland is explored in our special feature

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COVER		Bennetts Associates' Devonshire Square, London Photograph by Peter Cook/VIEW

DENOTES MORE INFORMATION ONLINE. FOR AN ARCHIVE OF AJ ARTICLES VISIT WWW.AJPLUS.CO.UK

'Given that Wembley is the wrong project in the wrong place at the wrong price, it will not be a surprise if the bankers find it a struggle to raise money. The City will be doing us all a favour if it refuses to come up with the cash.' 'As historic reconciliations go, this has to be up with the best of them.'

A *Guardian* editorial on Jørn Utzon's agreement to act as consultant for the refurbishment of Sydney Opera House. 22.3.02

Anthony Hilton. Evening Standard, 20.3.02

aj news



Bennetts Associates has won planning permission for this Paul de Monchaux sculpture - an archway designed to guide pedestrian movement between Bishopsgate and Devonshire Square in the City of London. Commissioned by AXA and the City of London, the sculpture was the winning entry in a competition organised by Bennetts Associates with advice from Vivian Lovell of modus operandi. It is one element of a £300,000 landscape strategy which forms part of Bennetts Associates' development on Devonshire Square (see page 24).

BERMONDSEY SPA SUCCESS

Kennedy Haywards Architects has fought off competition from Llewelyn-Davies, Bill Dunster Architects and Dransfield Owens de Silva to win a £30 million project for the north-east section of Bermondsey Spa in south London.

LOCAL RESIDENTS HIT BACK

Powys-based Craig Hamilton has beaten off competition to design a country house in Gloucestershire, but faces huge opposition from residents. Hamilton's design for a Palladian-style villa was chosen from among 92 entries. Hamilton receives £5,000 as an advance from clients David and Fiona Cardale.

For the best jobs in architecture turn to page 66 or visit www.careersin construction.com

Architecture: like buying stationery

The Royal Bank of Scotland is turning the notion of how clients procure good architecture on its head by introducing an online bidding system where architects compete for work in a Dutch auction based solely on price.

RBS is using a system it operates for buying laptops, mobile telephones and even computer stationery within the company in its new approach to procuring architectural services. Its property arm has pioneered the system, which the company describes as a 'fully transparent process' run from Brussels. It held its first 'reverse auction' online on Monday, including a national multimillion-pound contract for the RBS group's property division.

Pre-registered bidders take part in the auction online using a special password, and in some cases can see the lowest price during the half-hour process. At other times, explained Eric Davies from the firm's purchasing department, architects will see the first ranked position, or be told that they are two off the lead price. 'It's a very healthy process,' he said, 'and a new way of doing an old practice. In the past our suppliers were shooting in the dark. They now get to see far more information than they ever hoped to see previously.'

The 'e-sourcing' process is more efficient, transparent and allows RBS to get the true market price and reduced lead times, while architects get 'more than one bite at the cherry', he added, while ambiguities in what is required are removed before the auction takes place.

But the approach drew caution from RIBA president Paul Hyett. 'Architecture is a service, and should be about more than just money,' he said. 'The principle I don't disagree with, but good design solutions are dependent on a good relationship between the client and the architects. Money is only part of that story.' However, he added that the profession needed to be open to change, citing how online banking and insurance had changed those professions for the better.

Another architect, who wanted to remain anonymous, said he felt there were 'serious conflicts' with how architects do business and possibly with RIBA codes which say that once a bid is made it should not be changed. 'It's like buying paper clips', he added.

RIAS secretary Sebastian Tombs is also aware of the problem and has sent letters on the issue to the company and to RIBA chief executive Richard Hastilow. RBS says it has sourced more than US\$100 million using 'e-sourcing' software FreeMarkets, identifying savings of 20 per cent.

David Taylor

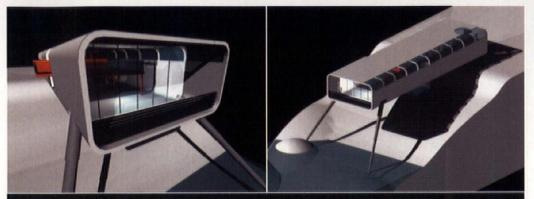


David Chipperfield Architects has beaten a strong shortlist to win the competition to design a new'City of Justice' for Barcelona and nearby city Hospitalet de Llobregat. The practice, in association with b720 Arquitectura, beat a shortlist including Richard Rogers Partnership, Ricardo Bofill, Pei, Cobb and Partners, and MBM to win the law courts project, which will be built on a former army barracks site midway between the cities. The 330,000m' vision is for eight buildings linked by a continuous, four-storey-high landscaped atrium space. Each building has courtrooms in its lower levels with offices and chambers associated with the courtrooms on the floors above and differently coloured fritted glass.

'English Heritage is holding its breath. If it succeeds, the new centre will trigger a wave of cutting-edge public facilities at Britain's historic sites.'

Jay Merrick on Stanton Williams' Whitby Abbey visitor centre. *Independent*, 25.3.02 'Scotland simply doesn't register on a world scale... The RIAS prize might help change that, but not if it simply goes each year to the least bad of a series of worthy but dull lookalikes...' Deyan Sudjic on RIAS' new annual architecture prize. *Observer*, 24.3.02 **'The standards of the Japanese building contractors opened our eyes. Nothing was impossible.'** Farshid Moussavi (of Foreign Office Architects) on building the Yokohama Port Terminal. *Guardian*, 25.3.02

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Halliday Clark has designed this futuristic cliff-top house for an anonymous client on the East Yorkshire coast. And it is talking to systems building companies to extend the idea to volume housebuilding projects it is working on. The four-bedroom scheme, called Milly House, involves a series of precast concrete sections bolted to a concealed frame using technology normally found in pipeline projects, and includes a balcony, and viewing box. A planning application for the project will be submitted inside two months.

ARB calls for greater powers to police 'architectural' titles

The ARB is calling for an extension of its power to police misuse of title. The board has asked the government to give it control over the use of the word 'architectural' as well as over 'architect'.

The change, which would require Parliament to revise the Architects Act, would allow the ARB to prosecute non-architects describing themselves as 'architectural consultants' or offering 'architectural services'.

The calls came during a visit to the board from Sally Keeble, the DTLR minister responsible for architecture and urban design. Board member Susan Ware said the ARB received about 700 complaints a year about misleading advertisements in local papers. 'But there's nothing we can do,' she said. 'The answer is to get the act amended.'

Vice-chair of the board Owen Luder said the ARB could extend its remit without a change in the act – by taking a successful test case to the Office of Fair Trading. It has been waiting for a suitable test case, he said.

• ARB chair Barbara Kelly is to step down at the end of March. The AJ understands that lay members Judge Humphrey Lloyd and Alan Crane are the two most likely candidates to replace her.

Zoë Blackler

Select committee: time to sort out 'squalid' South Bank

South Bank chairman Lord Hollick has been cheered by the Culture, Media and Sport select committee declaring that public money should be channelled into the 'squalid, seedy and menacing' complex and that its 'limping along' should stop.

The committee said decisive action was needed to 'prevent this saga of failed plans and masterplans "limping along any further", and it was unacceptable that artistic events of the highest quality, exceeding all international counterparts, should be condemned to take place in such an environment."

Lord Hollick welcomed the 'very positive support', including the committee's desire for the South Bank to share in the 'renaissance' of public arts buildings benefiting from the Lottery.

The South Bank now has planning permission for the £54 million refurbishment of the Royal Festival Hall by Allies and Morrison.

Gavron puts best foot forward with 'walking maps' for London

London's deputy mayor Nicky Gavron is leading a campaign to change people's perception of central London. She hopes her 'on the ground maps' will encourage people to walk more instead of taking the Underground, and help them plan their routes in London.

Gavron says that most 'people's map of central London is the Tube,' adding: 'Tourists have no idea that when they're in Leicester Square, Covent Garden is just around the corner. So often journeys in central London are walkable.'

The maps will form connections between transport terminals and create cultural walks. The project forms part of Gavron's broader plans for the city, including the involvement of children in the planning process.

See profile of Nicky Gavron, pages 20-22

10 WEEKS TO GO



An Interbuild highlight will be 50/50, an exhibition which presents the best buildings and products of the past 50 years and makes predictions for the next 50, based on interviews with a range of experts. This week, on page 12, architect and cyber-guru Neil Spiller explains why Le Corbusier's Ronchamp gets his vote.





Pre-register now for entry Visit www.interbuild.com or call 0870 429 4558



... of voters in a poll on the AJ's website say Broadway Malyan's St George's housing in London's Vauxhall is their least favourite UK building, ahead of Farrell's MI6 (12.2%) and Alsop's Peckham Library (11.6%). Respondents: 172 We are continuing the poll this week.

Register your view at www.ajplus.co.uk

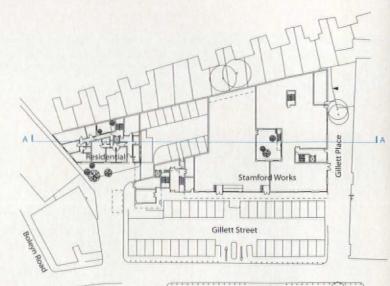
Hawkins/Brown mixes it in Dalston

Hawkins/Brown has won planning permission for a mixed-use development to regenerate a run-down brownfield site in London's Dalston. The work will be carried out in three phases: phase 1 is a £760,000 Culture House in the south-west corner of the site; the second stage will be the Stamford Works project along the northern boundary of the site – a £7 million development including four live/work units, 2,200m² of office space, 36 private residential units and 10 affordable homes; while the third phase will be the transformation of Gillett Street car park, which currently occupies the centre of the site, into a town square.

Hawkins/Brown has worked closely with artist Richard Wentworth from the outset of the project. Wentworth and other artists will design a changing light sculpture that will crown the lift shaft of the residential tower acting as the square's focal point at night.

The project, which is due to start on site in the summer with a planned completion date of spring 2003, is part of Hawkins/Brown's ongoing involvement with the area. Previous projects include the Bradbury Street studios, which flank the southern boundary of the site (AJ 29.5.97), and a series of market stalls which occupy the car park – a scheme which won the AJ Small Projects competition in 2000.

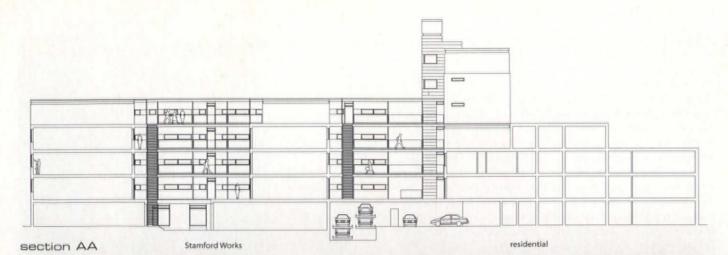
Isabel Allen



Market pods Broadbury Street Studio

ground floor plan

Axonometric showing the existing Bradbury Street studios to the south of the site and the proposed Stamford Works scheme to the north. The glazed Culture House occupies the south-west corner of the planned city square. The drawing also shows a proposed fourth phase – two mixed-use blocks which would define the site's eastern edge

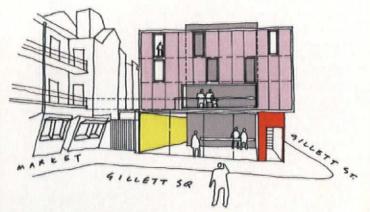




The Stamford Works project combines cultural buildings with residential accommodation. The public amenities occupy the ground floor; small business units are at first floor level while live/work units occupy the upper



The rear (north) elevation has been informed by extensive community consultation. The existing garden wall is to be repaired and retained so that existing plants and gardens are disturbed as little as possible. The flats have been designed to avoid the need for clear glazed windows overlooking the rear of the houses in John Campbell Road floors. The Peter Bedford Trust building forms the eastern end of the site, a five-storey central building forms the focal point of the square, while the social housing block is at the west end of the site



Sketch showing the Culture House in relation to the Bradbury Street Studios and market stalls

CREDITS

CLIENT MacDonald Egan ARCHITECT Hawkins/Brown STRUCTURAL ENGINEER Adams Kara Taylor PLANNING CONSULTANT Hepher Dixon TRANSPORT CONSULTANT WSP LOCAL ARTIST Andrew Cross MANAGEMENT GROUP FOR THE SQUARE Local Authority, MacDonald Egan, Voluntary Services, HCD

RIBA PASSES WIND TEST

The RIBA's wind turbine project could be salvaged after Westminster ignored the advice of its own planning officers. The plan to install two 20m turbines on the top of the Portland Place HO looked doomed last December when the AJ learnt that officers were recommending refusal (AJ 6/13.12.02). But last Thursday, councillors decided to consider a one-year temporary permission if the 20m turbines could be modified to conform to strict noise limits. While Westminster said it supported the experiment, it felt the Grade II*-listed building was not the ideal site. Ex-RIBA president Marco Goldschmied, who initiated the project, said he was confident that once the turbines were installed, people will 'wonder what the fuss was all about.

DESIGNS ON BEHAVIOUR

The design of schools can improve the behaviour and achievements of pupils, claims a report published this week. The School Works report, *Learning Buildings*, argues for greater consideration of the impact of the physical environment on schooling. And it recommends a number of 'radical' proposals for the rethinking of school design, including the involvement of the entire school community in the design process.

LAING'S LEGAL LANDMARK

Developer Laing Homes is claiming a'landmark' legal victory over a local authority on the issue of affordable housing. St Albans council initially refused planning permission for a housing scheme on the former site of the Old Albanians rugby club, on the grounds that the affordable housing provision did not go far enough. But the planning inspectorate has overturned the decision, concluding that Laing's proposals were sufficient to meet national guidelines.

PATRICK LITCHFIELD DIES

Patrick Litchfield, founder partner at Stout and Litchfield, died last week aged 70. Litchfield trained at Bournemouth College of Art and the RWA school of architecture in Bristol between 1948 and 1953, before setting up in practice with fellow student Roy Stout in 1962. Litchfield was known for his geometrical private house designs, including ones at Shipton-under-Wychwood (1965) and Bishopswood Road, Highgate (1975).

Arsenal stadium defends against fresh legal attack

Arsenal Football Club faces a legal challenge from local residents seeking to block its £400 million plans for a new stadium. The Islington Stadium Communities Alliance (ISCA) has applied for a judicial review of Islington council's decision to grant planning permission.

The ISCA claims the council failed to carry out an adequate environmental impact assessment of the new stadium and the schemes linked to it. Plans include HOK's £250 million stadium, a redevelopment scheme for Lough Road by CZWG, and a sealed waste and recyling plant by Sheppard Robson, as well as an Allies and Morrison housing scheme for the existing stadium site.

The ISCA's Alison Carmichael said secretary of state Stephen Byers' decision not to call in the scheme in December was 'an outrageous abuse of the planning process. The plans are far too big for Islington council,' she said. 'There's a need to look at the impact on the whole of north London, not just the immediate area. The plans do not work and should not have been passed.'

The ISCA is awaiting a date for a High Court hearing. A spokesman for Arsenal said it had asked the courts to deal with the matter quickly. 'We don't believe there is a case to answer,' he said. 'All the issues were thoroughly considered by the council's planning officers who commissioned independent consultants to analyse the Arsenal's environmental impact. In terms of process, Islington can't be faulted.'

The news comes amid reports that the Football Association is struggling to raise the £715 million needed for its Foster and Partners-designed stadium for Wembley. The FA has until the end of April to prove the viability of its London scheme – or see the national stadium handed to Birmingham.

Paul Spooner, Birmingham's director of economic development, said: 'We expect the government to stick to its commitment. If Wembley hasn't resolved all the issues by the end of April, we expect the government and the FA to say it will go to Birmingham.'

Zoë Blackler

Director Lucy Musgrave to leave Architecture Foundation

Architecture Foundation director Lucy Musgrave is to step down after five years in the post. Musgrave announced last week that she would be leaving the organisation, just nine months after Will Alsop took over as chair.



Eric Parry Architects has won planning permission for this eight-storey office building at 54-66 Gresham Street in the City of London. The 4,500m² scheme, sited in a highly sensitive conservation area, includes retail space at ground floor level.

Musgrave, who has been at the foundation for eight years in total, denied her decision was in any way connected to the organisation's recent funding crisis. And she added that it was financially robust, with a number of good projects on the go. She said she would be taking a break before deciding on her next move and pledged to put all her energy into helping find her replacement.

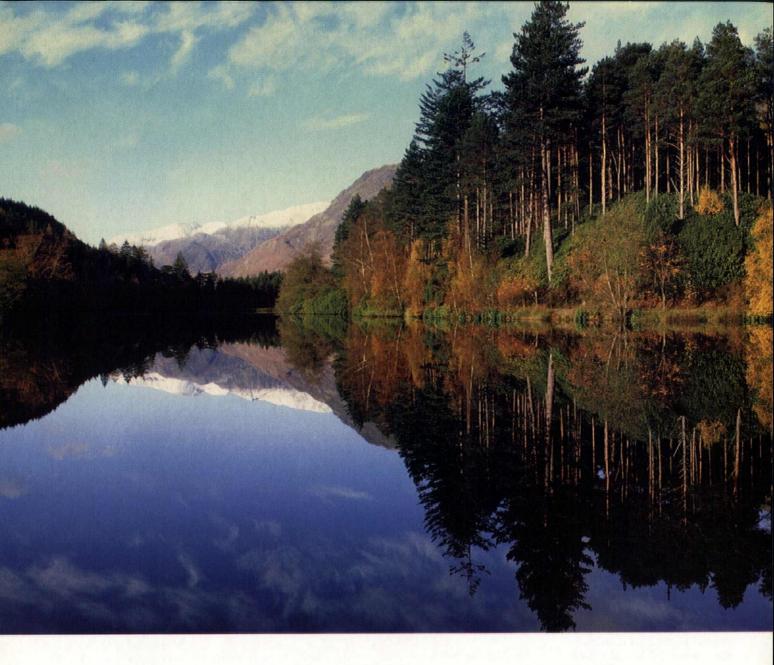
Alsop said he understood Musgrave's decision to leave the 'demanding' position, and added that they had enjoyed a constructive working relationship.

Details of the recruitment process will be announced shortly. Alsop said he would be looking for someone 'jolly good' who has 'genuine deep feeling for architecture and the built environment in the deepest sense'. Though he would consider anyone, there were two or three people he would love to apply, he said.

The news indicates a further weakening of the link between the AF and its founder Lord Rogers – Musgrave's father-in-law. Since relinquishing the chair to Alsop, Lord Rogers has remained only a member of the advisory committee for its Glasshouse project, a nationwide design advisory service for residents, on behalf of the Glasshouse Trust.

The RIBA's latest exhibition, 'Hardcore: the rise of concrete from utility to luxury', features this design by Zaha Hadid Architects for a new tram station in Strasbourg. The exhibition, which opened this week, is a celebration of concrete in architecture and design. Designed by Block Architecture, it charts the progress of the material – from its first appearance in the ancient world to the extraordinary uses to which it is put today. Other work featured includes the Salk Institute by Louis Kahn, Denys Lasdun's National Theatre and the Blitzcrete aggregate developed by John Outram.





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vital statistics

• Workers feel their talents are not being used to the full, a survey by human resources consultancy Chiumento has found. More than one in five said they wanted more challenging work and thought they could play a bigger part in their organisation.

Retail sales surged ahead by 1.5 per cent in February. **The Office for National** Statistics said it was the strongest monthly rise since January 2000, when sales rose by 1.9 per cent. The increase is ahead of forecasts and could fuel fears of interest rate rises. Britain's homes are now worth £2.1 trillion. The value of housing stock has almost doubled since the stock market crash of the early '90s. The Centre for Economics and **Business Research found little** evidence that homeowners were overstretched, with mortgages totalling only £606 billion or 28.7 per cent of the value of the property against which they were secured.

Clare Melhuish reviews... Blonski's retrospective on architect Peter Moro

Andrzej Blonski's talk on Peter Moro highlighted not only how 'civilised' an office Moro ran, but also how the conditions in which architecture is produced have changed. This was a time when building new housing in Southwark, 'we learnt everything there was to know about leaking decks and roofs', but found the client – Southwark Borough Council – very sympathetic and understanding.

The problems were resolved, but they had to work them out themselves, since 'there were no specialists in those days'. It was also an era when Moro could feel justified in walking out on a job – a project in Brentford – because of his objection to a programme combining public, civic functions with a commercial development. Very few architects today would feel able to make that decision but, as Blonski put it, Moro was always 'very consistent in that sense'.

Clearly, by the time Moro closed down his office, at the age of 72, conditions were changing. He was deeply upset by the alterations made to his Nottingham Playhouse, presumably in the name of 'user-friendliness' – the building which had so stunned Blonski as a young man that he immediately resolved he must work with the architect responsible for the design. At the same time, lessons were being learned that Moro and his ilk had been aware of, and working to address years before. As Blonski says, 'we all hated estates' (at a time when the GLC was busily building estates) and they canvassed 'the importance of the street' through their own GLC-commissioned projects: 'The street gives you a proper progression of spaces from the public to the inner sanctum,' he explains. They perfectly understood that 'wholesale demolition and rebuilding destroys communities', and were 'well-aware', he says, 'of the problems of the North Peckham estate [for example] back in the '70s'. But Moro was also wary of the issue of 'community involvement', pointing out the implicit difficulties of trying to define a community.

As Blonski pointed out, Moro was deeply opposed to decoration on a building, but rather sought to engage with its inherent 'spirit' or 'emotion'. Planning, he believed, was 'an art, not a circulation diagram'.

According to his collaborator, Michael Hurd, 'clients often came back, because the office collectively gave them a very good job', and certainly Moro's team seems to have undertaken a wealth of varied work, from the theatres where they made their name as specialists, to houses, social housing, and schools: again, a proliferation of publicly funded and socially motivated projects which presents a very different working scenario from that which faces architects today. But according to Blonski, Moro's favourite building was his own house. 'It's just so satisfying how it hovers,' he observed, offering a suitable epithet, perhaps, for a whole body of work.

Andrzej Blonski's talk on Peter Moro was hosted by the Twentieth Century Society at the Gallery in London's Smithfield



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NEIL SPILLER

Architect and cyber-guru

What is the best building of the past 50 years?

Ronchamp. It doesn't play by any of the rules. It's clumsy and beautiful at the same time. One of my tutors reckoned that he and a friend went to see it and his friend had an orgasm when he saw it. Tutors! I hate all that white, clean and neat Mediterranean concrete Modernism. Which admittedly was Corb's responsibility too. But he got funky at the end.

What is the most significant innovation of the past 50 years?

The virtual world and wonderful things like amazon.com and businesses which are a combination of virtual and actual. We've only seen the start of it. It has also put an end to the dreaded Decon of, say, Zaha and Peter Wilson, and allowed in the neo-avant garde of, say, Greg Lynn and Ben van Berkel.

And the best building product?

It's difficult to think of a specific product because building technology hasn't progressed much in the past 50 years. It's been more of the same, so I'm going to pick advances in plumbing, such as being able to pump effluent up vertically from basements. Maybe I'm being autobiographical here because we have the plumber around a lot for our macerator.

What innovation do you hope to see in the next 50 years?

Scientists already call the next 50 years the deep future. Anything is possible but the big event will be the commercial application of nanotechnology - the manipulation of matter atom by atom - by molecule-sized factories. It's the ultimate alchemical technology in which you can change things into other things, providing you have the materials to hand. They are already designing small robots that can swim around the arteries and scrape off viruses but this is an order of smallness beyond that.

These interviews by Sutherland Lyall will form the basis of the 50/50 exhibition at Interbuild 2002.

Foster snubs RIBA Stirling Prize despite record entries

Foster and Partners has decided not to put forward any buildings for the RIBA Awards this year, making it the first time in the Stirling Prize's sixyear history that every Foster scheme can be ruled out of the running, right from the outset.

The practice was widely expected to at least have put forward its well-received Great Court project at the British Museum, which was the venue for last October's Stirling Prize grand ceremony, televised on Channel 4. But the £100 million Queen Elizabeth II Great Court project, which could have expected a berth on the awards shortlist, was plagued with bad press over the 'wrong stone' affair. That was when cheaper and lighter-looking French limestone was used instead of the specified Portland stone from Dorset on the Lottery-funded scheme's South Portico. Camden council was defeated in its attempts to prosecute the museum – with possible fines of £20,000 on the horizon – over the saga in January.

The other main Foster's built project of the year, the Millennium Bridge on the Thames, has latterly won acclaim – but only after the delayed opening and 'wobble' problems attributed to the design team and engineers Arup.

A Foster and Partners spokesperson said: 'We decided not to enter this year, for various reasons. We've put in lots of buildings in the past but we've decided to have a bit of a rest this year.'

Foster and Partners has had a high profile at the RIBA awards in recent years, having clinched the third ever Stirling Prize in 1998 with its Duxford Air Museum project, and winning RIBA awards regularly for projects such as the £17 million Valencia Congress Centre; Great Glasshouse in Camarthenshire; Faculty of Management at Robert Gordon University; and the £32.5 million Canary Wharf Underground Station, which was the joint favourite for the £20,000 top prize in 2000 when Will Alsop's Peckham library triumphed.

The practice reports that it is busy, however, having had to turn down a number of major projects, including the chance to appear on a shortlist of big-names involved in a masterplan for Amman in Jordan. The list, to be announced soon, is understood to include Rem Koolhaas' OMA, Alsop Architects, Allies and Morrison and Gensler.

The RIBA's deadline for awards submissions

passed on 15 March, but the institute has received record numbers of entries, despite Foster's absence. Winners will be announced this year at an awards dinner during Interbuild on 11 June.

The ultimate shortlist could include Richard Rogers Partnership's Lloyd's Register of Shipping; Hudson Featherstone's Drop House; Sarah Wigglesworth's straw bale house; and the Millennium Bridge in Gateshead by Wilkinson Eyre, which won last year's Stirling Prize with Magna in Rotherham.

Australian rift-healing over Sydney Opera House 'a sham'

The Australian government has approved a 10year, £8 million masterplan to 'redesign' the Sydney Opera House – but Jørn Utzon expert Richard Weston says it is simply an attempt to whitewash the past and portray the rift as healed. Utzon himself will never return, and says the work is 'more about toilets than concert halls'.

Weston, who has written the just-published *Utzon* – the definitive monograph of the 83-yearold architect's work, said: 'The New South Wales government is trying to make mountains out of molehills and to say the rifts are all over – and it's not exactly a dramatic refit.'

Utzon's 'return' to the scheme, with Denton Corker Marshall, was first detailed by the AJ three years ago (AJ 25.2.99), but is being exaggerated in PR terms according to Utzon's right-hand man Mogens Prip-Buus. And Utzon's treatment at the time – including an eight-year gagging order – still rankles. 'He got battered, badly,' said Weston.

The Danish architect, now living in Majorca, was ordered to stay silent on the famous scheme when he signed a legal agreement after it ran into budgetary problems in the 1960s. He was also told that he was not good enough to do the interior of the building.

Now Utzon's son Jan has put together a design manual with guidance notes and principles to be observed. But Jørn Utzon believes his original vision cannot be realised. Weston said: 'It used materials, such as huge 50ft x 15ft plywood sheets, that don't exist now.'

The scheme is a reworking of the building's forecourt, enlargement of the orchestra pit and improvement of the acoustics in the building's two main halls – which Utzon never worked on.



Gensler has won planning permission for Calton Gate, its mixed-use scheme in Edinburgh's Old Town, and is getting encouraging noises from CABE about its controversial No 1 Westminster Bridge scheme in London before design review, in May. The Calton Gate project includes 20,000m² of office space, 55 homes, a 2,800m² arts and media centre, retail units and a health and fitness centre. Gensler vice-president David Bartlett said it represents a chance to redevelop one of the most important brownfield sites in Europe. 'We have created a design that can rightly be described as contemporary contextualism,' he said.



Prime Minister Tony Blair is set to officially open GSK House – a £300 million global headquarters for pharmaceutical giant GlaxoSmithKline where the client has shown a major commitment to public art – in Brentford on 23 May. The new 100,000m² scheme, designed by Hillier with RHWL and Swanke Hayden Connell, is the biggest single commercial development in the UK. Artworks took more than the usual one per cent of the budget – or well over £3 million – according to Peter Harris, chairman of International Art Consultants. They include 'Abundance' by Jan Blake, an aerial sculpture describing the 'continual flow of repetitious and circular human activity on streets', and 'Athlete' by Allen Jones, a painted steel 'personification of health and strength' outside the building. The scheme consists of four five-storey buildings and a 16-storey tower block linked by an internal street.

RIBA presidential candidates slated in three-way debate

Observers of last week's presidential debate have criticised the poor quality of policies on offer.

RIBA presidential candidates Annette Fisher, George Ferguson and David Thorp were expected to battle it out at Portland Place last Thursday. But witnesses called the poorly attended event 'a limpwristed affair' and said all three put forward the same arguments.

Camden Architects Forum former chair Chris Roche said the poor turnout reflected the inferior level of debate. And he condemned the 'incredibly conservative' outlook of all the candidates. 'At the moment, a vote for any of those candidates is a vote for no change,' he said. 'I would like to hear some policies emerge before I decide who gets my vote.'

The RIBA's honorary librarian, Tim Drewitt, said he was disappointed at the low attendance, and suggested members were either losing interest in the presidential elections or were not interested in the candidates on offer. He added that unlike current president Paul Hyett, or ex-president Marco Goldschmied, all three candidates lacked profile.

'I am disappointed that a more substantially well-known and respected architect hasn't come forward,' Drewitt said. But he added that his money was on Ferguson. 'People may have an emotional response to Fisher because she is a woman and black, but when they put a cross down next to a name they will think more seriously about it.'

The dissatisfaction with the calibre of the candidates was supported by the AJ's online poll, where 178 voted. The fourth category of 'none of the above' came in second with 30 per cent of the vote, only just beaten by Fisher as favourite with 33 per cent. David Thorp came in third with 19 per cent of the votes, with Ferguson trailing on 18 per cent.

The three candidates will be debating again at the RIBA's Wessex region in Bath on Monday 8 April, and Royal Society of Architects in Wales in Cardiff on Wednesday 17 April. Ferguson will also be going head-to-head with Will Alsop at the RIBA, Portland Place on Friday 19 April at 5.30pm. Ferguson challenged Alsop after the Stirling Prize winner condemned the lack of quality candidates for the RIBA presidency and called for members to quit the institute and support the Architecture Foundation instead (AI 28.2.02).

Zoë Blackler

Respected architect Betty Cadbury-Brown dies at 80

The death last week of Betty Cadbury-Brown, famously vivacious wife of Jim Cadbury-Brown, removes a key figure from a particular architectural circle who will be sorely missed, *writes James Dunnett*.

Brought up in a left-leaning community in Croton-on-Hudson, New York State, she studied architecture at Princeton, arriving in London in 1948 with an introduction to Ernö Goldfinger from the cousin of his former client, Helena Rubinstein.

Through Goldfinger she met Jim, his pre-war colleague, and a close friendship between the Cadbury-Browns and the Goldfingers continued to the end. Betty stood up to Ernö Goldfinger and sometimes suffered for it.

She was once 'in the dog house' for months for having failed to realise that Goldfinger's 1931 Entas tubular chair was capable of being stacked. When she asked Ursula Goldfinger for advice as to how to retrieve the situation, she was told none could be given because Ursula was so often 'in the dog house' herself!

She played a central role in the Cadbury-Brown practice, particularly in the development of details, finally and very recently researching the correct membrane for re-roofing their exquisite flat-roofed home in Aldeburgh, a 'bungalow in back lands development' – the planners' description she was fond of quoting. Here her warmth and hospitality were legendary – as well as the strength of her whisky sours. With her American accent unabated, this was a little slice of Manhattan in Suffolk.

CABE CONFRONTS HOUSING

CABE is set to hold a series of seminars to showcase the best of British housing. The 'Building for Life' series will begin in Manchester on Thursday 11 April with a discussion of two of England's best new residential schemes the 'excellent' Bishops Mead in Chelmsford, a 59-house scheme designed by Reeves Bailey Architects for Bryant Homes; and Brockwell Gate in Tulse Hill, 65 town houses and 166 apartments by Nicholson:GDA for Fairclough Homes. The event, a joint initiative between CABE, the House **Builders Federation and the Civic** Trust, is at the Marriot Hotel, Manchester Airport at 12.30pm. For information contact Diana Little on 020 8894 4142 or e-mail info@designforhomes.org

LIBESKIND AT THE RIBA

Daniel Libeskind is to speak at an RIBA symposium in June entitled 'Exile, Legacy and Memory' as part of Architecture Week. The two-day conference, organised with the London Jewish Cultural Centre, will take place on Sunday 16 and Sunday 30 June. Former RIBA president Marco Goldschmied, director of the V&A Mark Jones, and Lady Marina Vaizey will also be contributing. For further information, contact the LJCC on 020 7431 0345.

BDP MOULDS MANSFIELD

BDP is preparing a masterplan and townscape heritage initiative bid to help the regeneration of Mansfield. The masterplan, for Mansfield District Council, will focus on the White Hart Street area and Mansfield town centre.

EMPIRE STATE BUILDING SOLD

The Empire State Building has changed hands for US\$57.5 million (£40 million). Property tycoon Donald Trump and his Japanese business partner sold the famous 102-storey New York skyscraper to an investment group run by Peter Malkin, the building's leaseholder.

COLWYN WINS GREEN LIGHT

Colwyn Foulkes & Partners has won outline planning consent for a £12 million scheme on Green Lanes in Haringey, north London. The single-storey project comprises 9,750m² of retail space with 25 affordable housing units. Work will begin on site in the autumn.



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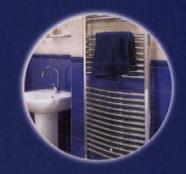


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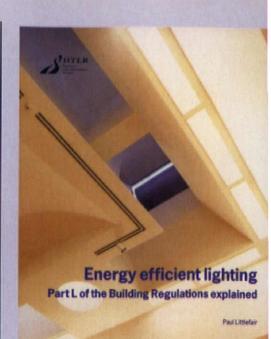
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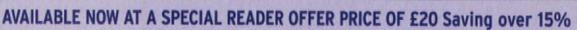
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Reform or revolution?

How do you make the city a wondrous place to live? This was the challenge to architects at the Revitalising the European City conference last week. Austin Williams reports



Renzo Piano's revitalised Potsdamer Platz (left) in Berlin and a lessser-known elevation of Sauerbruch Hutton's GSW headquarters building

The Revitalising the European City conference at the RIBA last week was organised by *The Architectural Review* to discuss 'how to heal urban sores and scars'. An impressive array of architects lined up with a brief to focus on 'the crises that face almost all European cities: pollution, deracination, decay, congestion, disintegration and destruction'. Fortunately, no one took this depressing itinerary as their starting point.

David Mackay, of Spanish architectural practice MBM Arquitectes, started off with an overview of Spain's radical history, concluding that 'democracy is in crisis and we need a revolution in our cities'. By this he meant a 'true' partnership between public and private sectors; recognising that the public was the 'only partner which will defend the inheritance of the past and of the future'.

Mackay's presentation ranged from Salerno to Newham. His exposition of Max Taut's Eichkamp housing development in Berlin from the 1930s was well received, describing how housing can be made more humane by introducing the urban into the suburban and using a variety of architects on any given scheme.

In a strangely reformist twist, he concluded that basic design issues can make a real difference and act as stepping stones to major design changes. His message was that 'we should do the easy things first'.

'We need to tear down all ugly box buildings and never build on unspoiled land again,' was Oslo architect Neils Torp's message. Celebrating the spaces in between buildings, he advocated that 'architects show humility when designing'.

Next, flown in especially from Moscow, Meinhard von Gerkan, partner in Hamburg architectural practice von Gerkan & Marg, outlined several different stages of urban design: reparation, conversion and 'combining uses'. Proclaiming that 'every part of every building is part of the city', he displayed an impressive array of buildings from the 75,000m² Berlin railway station to proposals for an island off Shanghai. To revitalise the city, he said, 'we need to develop connections in time and space'.

In his relaxed but authoritative contribution, Renzo Piano stated his enthusiasm for his profession and for architects' 'insane conviction that they can change the world'. Documenting his work at Potsdamer Platz, London Bridge Tower and the New York Times building, he conveyed a need to 'add vitality' to cities while 'making sure that the revitalisation of historic centres doesn't end up demolishing everything'. Transparency, permeability and public access were his key themes, although he concluded with a plea to sort out the periphery – 'we must stop the explosion of cities and start the implosion'.

Recognising that there are not many places to build tall buildings in London, he repeated other speakers' advocacy of building on, and over, railway land. At the end, AR editor Peter Davey, who chaired the conference, was so impressed that he admitted to being 'almost convinced' by Piano's London Bridge Tower design reasoning.

Davey, who handled the proceedings with consummate ease – interested in all the speakers without ever being sycophantic – introduced Sir Nicholas Grimshaw as 'someone that I had always thought of as a builder of tall buildings in the country; but now he's come to town'.

Sir Nicholas spoke about 'giving something back to the community', although it was not spelled out what this should be. He rejected the notion that architects should 'design buildings to fit into their surroundings; they should be simply designed as well as they possibly can' but pledged to 'fight tooth and nail to avoid too many areas of grand planning'.

Sauerbruch Hutton partner Louisa Hutton talked through the design of the GSW headquarters in Berlin, one of the first projects to be built during the reconstruction of the city in the 1950s. She concentrated on the historic, political significance of its location and the design which, she said, combined 'found fragments of the city'. The existing tower structure, for example, was originally intended to be demolished until it was realised that retaining it would help 'reintegrate' the whole project into its context.

Unfortunately, Adriaan Geuze, landscaper and urbanist from Dutch practice West 8, had to be relegated to the end of the proceedings because of the ubiquitous Powerpoint gremlins (apparently his CD had been corrupted while passing through customs). As it turned out, he managed a witty, upbeat discussion, name-dropping a variety of famous personalities – from Yuri Gagarin to Elvis– which entertained with interesting imagery but failed to illuminate.

The only drawback, which had been identified by Piano earlier in the day, was a lack of theoretical insight into the debate about cities, relying instead on aesthetic realisations. Are cities really in crisis? Is there such a thing as a typical European city, and what generalised lessons are there to be learned from this discussion? These may be issues for another day. On the positive side, this was a rare masterclass in thoughtful urban architecture.



RIBA presidential candidates should stop playing safe WHAT'S NEW ON THE WEB? The AJ's awardwinning website is bristling with new features. Visit ajplus.co.uk now and you can:

Check out all the latest news – like Architecture Foundation director Lucy Musgrave's decision to leave the outfit; or Mediawatch, Astragal's review of all the architecture stories from the weekend papers.

editorial

One of the occupational hazards of standing for RIBA president is the inevitable outbreak of nostalgia for some imagined era of top-quality candidates and razor-sharp debate. The contrast between the newcomers and past and present presidents is made all the more acute by the fact that the latter have benefited from the intensive media training which is one of the perks of the job. Annette Fisher, George Ferguson and David Thorp have to contend with the fact that the last two presidents enjoyed a public profile before they joined the election fray – Marco Goldschmied had the kudos of his position at Richard Rogers Partnership, while Paul Hyett had established notoriety through his column in the AJ.

The current presidential hopefuls remain elusive, determined to downplay the characteristics which most obviously differentiate them in the eyes of the electorate. Fisher, who, if elected, would be the first woman and the first black person to hold the post, opened her speech at last week's debate with the words: 'I am not a woman and I am not black.' The unwillingness to be typecast is understandable, but could become self-defeating when applied to policy as well as personal qualities.

During the debate, Fisher reiterated her intention to raise sponsorship for the presidency; Ferguson expressed the view that only certain architects should be allowed to work with historic buildings; while Thorp announced that he would be happy to consider raising the RIBA membership fee to £1,000 a year - three potentially incendiary policies with the makings of a highly contentious campaign. Yet each of these points had to be teased out of the candidates, all of whom seemed happier to dwell on the areas of consensus notably their shared belief that public relations should be a vital aspect of the presidential role. Safe ground but not enough to flatter the electorate that it is voting on policy as opposed to personality. It looks as though the post will go to the first candidate to decide that the way to win friends is to demonstrate a willingness to make foes.

letters

Time the mayor got his own backyard in order



Neil Cossons and Ken Livingstone

Ken Livingstone's attack on English Heritage: 'Angry Livingstone in EH takeover', (AJ 21.3.02), was, as usual, both misguided and misinformed. What is so worrying is that it is symptomatic of an unrelenting hostility to conservation and progressive urban values, which is redolent of the worst excesses of the 1970s. If it continues, it will have hugely damaging consequences for London's reputation as one of the world's most liveable cities.

At last Ken Livingstone has recognised that what he needs is expert advice on London's historic environment. The answer is not to take over one of the nine regions of English Heritage - a national repository of expertise on all aspects of the historic environment - but to appoint his own cabinet adviser and staff. It is astonishing that, with responsibility for preparing a plan for one of the world's greatest historic cities, he has no cabinet adviser or dedicated conservation staff. Three times we have offered to help pay for one to help avoid further gaffes, but to no avail.

Fact: I have had no private lunch with the mayor. Fact: There is no agreement with English Heritage over tall buildings in London. Fact: People value places and not just individual buildings whether new or old. Fact: Our MORI poll highlighted that 77 per cent of people disagreed that we preserve too much. Fact: English Heritage did not cut down the trees on the Embankment in front of Somerset House.

Fact: On Bishopsgate Goods Yard, what has happened is what the mayor has stated publicly he wanted to happen. The Braithwaite Viaduct has been listed Grade II. Just like the mayor, we are opposed to the demolition of the remainder of the Goods Yard until an adequate masterplan is in place. The line is not yet funded, there is no development partner in place and no planning permission for the replacement infrastructure. What we want to avoid is premature demolition and a hole in the ground with no understanding of what is going back or when.

English Heritage is 100 per cent behind the construction of the East London Line extension, but we know of no engineering reasons why it cannot be built on the existing structure as was originally planned. The creative adaptation and reuse of the Goods Yard, with mixed-use development above, has the potential to be a spectacular catalyst for the wider regeneration of the area - the Camden Market or Covent Garden of east London. The City fringe is not a dumping ground for office blocks, but home to some of the most deprived communities in London who deserve better.

We have commissioned a report to show how it can be done.

Sir Neil Cossons, chairman, English Heritage

Selective information on urban renaissance plans

Irena Bauman's comments (AJ 14.3.02) refer selectively to what I said at the '4x4' lecture in Leeds, misleadingly refer to things I did not say, and reflect an inability to understand the processes of the urban renaissance programme at Yorkshire Forward, reaffirming my view about (some) regional expertise. Read up on AJ100, our annual list of the biggest and best practices in the UK. We've now put all the lists online, and the main table features contact details at the click of a mouse. Access it from the homepage. Search for past articles from the AJ or sister titles New Civil Engineer and Construction News via the archive button on the homepage. Input your search requirements, click the article you want, and print. Terry Farrell's 'The Deep' (right) opened in Hull this week, and you can visit it from your computer. Just go to www.ajplus.co.uk/photos to see our new IPIX 360° photographs of the scheme.



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On that occasion, as with presentations in Barnsley, Doncaster, Grimsby, Halifax, Huddersfield, Rotherham, Scarborough, Scunthorpe, Wakefield, Hull, Leeds and Sheffield, our work was supported enthusiastically by politicians, business leaders, community representatives and professionals keen to engage positively and unleash unprecedented potential for our long-term strategic, urban qualand community-driven ity process.

While Irena Bauman chooses to dismiss statutory OJEC notices, her inability to keep up with the mainstream architectural and planning press adds further misfortune to her position. The UK journals were the source through which we announced our urban renaissance process, and through which we identified and appointed our panelists within the region, across the UK and overseas.

Similarly we are assembling a regional panel of expertise through the Regional Urban Alliance, about which there has been public debate, public notices and press coverage, and which was described at the '4x4' gathering. Again Irena Bauman seems to have missed all that.

Meanwhile, our commitment to the region's urban renaissance, without precedent in its innovative character, is attracting admiration across the country. While our urban renaissance panel – comprising the best of regional, national, and international expertise – is developing pioneering ways of working with the region's citizenry, the Town Teams, on our streets and within our communities, in the delivery of long-term urban design strategies.

Yorkshire Forward's worldclass urban renaissance panel is working with local communities through recently formed Town Teams assembled to represent amenity, community, and business interests. Together we are creating long-term environmental, social, and economic strategies built upon rising aspirations and enhanced skills in citizenship and civic leadership. *Alan J Simpson, head of Urban Renaissance, Yorkshire Forward*

It's land prices that are affecting affordability

Martin Pawley is back to one of his favourite topics: prefabricated housing in the aftermath of World War II (AJ 14.3.02).

He writes about the age-old problems of housing affordability and the economics of delivery, pointing to prefabrication and the Peabody Trust's potential entry into this arena with rentals targeted as low as £65 per week. Then, predictably, a wry comment on Ken Livingstone's ambition to see 'thousands of these houses for essential workers' all over London. Yeah, yeah... but let's not forget, as the subject of affordability is brought back into sharp relief, those other crucial issues such as ecologically sustainable design and the organisation of socially 'workable' public space that has so bedevilled even the best of endeavours: Darbourne & Darke's Marquess Road Estate has just been demolished after only 20 years, Benson and Forsyth's work in Camden sufgrievously through fers mismanagement, and Neave Brown's Alexander Road continues to deteriorate through lack of maintenance.

And let us not forget the major impediment to affordable housing – non-affordable land. As Dickon Robinson has pointed out, the insatiable appetite of the 'investment' market has continued to inflate dwelling prices, especially in the South East. So much so that of the £140,000 average new house price, the actual build cost accounts for a mere 25 per cent. Infrastructure and all fees including legal, design, and sales accounts for 15-20 per cent, leaving about 60 per cent of the purchase price tied up in land value. That value may have increased by up to 13fold where agricultural land is converted to residential as a result of a favourable consent at planning. That's where the high costs lie and that's where affordability is frustrated - exorbitant land values supported principally by the demands of the investment market!

Until we get a handle on the damaging input of inflated land prices on housing costs, affordability will remain an unsolved problem. Put simply, if we want to help those whose work is essential to the function and well-being of our cities (statepaid nurses, teachers, police etc) we will have to get some kind of control on the influence of the residential investors on house prices – both rented and bought.

Not so easy, however, in a free-wheeling and increasingly carefree market democracy. *Paul Hyett, RIBA, London*

Cutting-edge technology won't show us the way



I notice that cutting-edge computer technology has discovered that Abraham Darby's iron bridge over the Severn was constructed using ordinary carpentry techniques.

I first saw this bridge in the mid-'40s as a student at Birmingham School of Architecture. It was unmistakably obvious that it was constructed using normal carpenter's mortise and tenon joints for the compression members, and that each one had been individually cast and tapered to fit as construction went along.

What on earth could cuttingedge technology have revealed that was not already evident to the owner of Mitchell's 'Building Construction'?

Jack Speight, Welwyn Garden City, Herts

Would a TV programme save Scott's theatre?

Kate Macintosh makes a powerful case for retaining Elizabeth Scott's theatre (AJ 21.3.02).

However, she finishes with the query 'Where is the 20th Century Society?' Clearly she isn't a member or hasn't read its current newsletter. Not only does its cover have a contemporary picture of the Memorial Theatre, there are two wellargued pages devoted to this problem from the society's chairman Gavin Stamp. He concludes with the fighting words 'the RSC has not demonstrated - as the law requires - that the survival of the existing listed building totally impedes its plans for a Bard theme park by the Avon. We will fight for it'.

I have always felt that one of the key reasons for the saving of the old Bankside Power Station by the Thames (by another member of the Scott architectural dynasty) was Stamp's powerful case for its retention in the television series *One Foot in the Past*. Perhaps another such programme is needed for the theatre.

Martin Andrews, London WC1N

Correction

The 'liner' building to house South Bank staff will be situated alongside Hungerford Bridge on the Royal Festival Hall side of the bridge, and not on Jubilee Gardens, as stated in AJ 14.3.02.



will alsop

Time to get out of your 'box' and speak to the public

I have just said goodbye to my friend, the artist Gareth Jones, in Rhode Island. Gareth and I used to teach sculpture together at Central St Martins School of Art in 1973. In 1987 he moved to the US, where he has been teaching at Rhode Island School of Design ever since. Three years ago he took a sabbatical. At lunch today, we were discussing his art practice, as we looked out over the bay towards Newport.

On his year off, Gareth gave up all art and decided to use the period to examine his own response to the world, as opposed to the received views held by the art cognoscenti. As we all know, much art activity is generated by testing the boundaries of what Gareth referred to as those within the 'box' – the artists and critics who determine what is 'in'. He wished to escape these views and sat down to read and write for a year. He is still reading and writing four years later, even though he has reached a number of conclusions, and is almost ready to communicate them to a broader audience – who he wants to reach.

I thought the concept of the 'box' was interesting. It is certainly true that architects tend to develop an innate belief in their own practice, and are very quick to criticise the works of others who do things differently. We are living in a period when there is no overriding predominance of any architectural style or theory.

Up until 1975 or thereabouts, there was at least one architectural manifesto published for every year of the 20th century. Each assumed that others would accept the persuasive power of their arguments, and create the possibility of a movement. Each programme contained within it an evaluation of the world and, if only people adopted the author's methodology, there was the promise of eternal paradise.

Most of these meanderings were architects talking to architects, ie other people in the 'box', and the idea of broadening the audience was not really considered. Recognition by your peers usually takes priority over common sense. Architecture is one of the most public of arts and yet it prefers to speak to itself, and does not recognise that the broader audience, residing on the outside of the 'box' can, if included collectively, contribute to an architecture of openness and joy.

In the world of increasing globalisation, I have discovered that people are more and more interested in the particular. They wish for their places of living, working, and learning not to be standardised. There is a creativity that allows architecture to be discovered, not pre-formed according to a formula – an architecture of shared ownership that transcends the cultural baggage that we all carry.

None of the people I have been working with on the Stonebridge Estate or at West Bromwich have shied away from encouraging an extraordinary ambition – one that, in my opinion, lies outside Gareth's 'box'. WA from a table at Logan Airport, Boston



people

London's deputy mayor Nicky Gavron has that rare thing in politics, she says: the job she really wants. As Ken Livingstone's second in command and a driving force behind the London Plan, Gavron is helping to produce a vision for the capital.

With the draft plan due to be published early in the summer, Gavron has an agenda – to push the figures and statistics that underpin it. But what excites her most is how real people can contribute to the strategy.

Gavron is returning to the mission that first drew her into politics – to make the city more child-friendly. The way to achieve it, she believes, is by putting children at the very centre of the development process.

'Children have brilliant ideas,' she says. 'Once they learn about design they can be very innovative.'

Inspired by the work of the Sorrell Foundation – which brings children together with designers to reinvent their school environments – she wants to see children learn how to become the client.

Through her 'Children's Strategy' she wants to explore how the under-18s can feed ideas into the London Plan in order to improve their quality of life in the city. The energy and creativity that children can bring must be harnessed, she says, adding: 'We need to be raising the consciousness of design with and for children.'

A key priority is to make London a safer, more enjoyable place for them to be. To learn from children where the dangerous spots on their routes to school are and how they could be made safe.

'Who better to look at the streets than the kids themselves?'

The issue is a familiar one. In the 1970s, Gavron was a young mother of four, with two daughters of her own and two stepsons she inherited when she married the publishing tycoon Bob – now Lord – Gavron. Their house in Highgate in north London was close to the busy A1. And with nowhere for her children to cross the road safely, Gavron began a 14-year campaign for a pedestrian crossing.

A campaign followed to save the local library, 'the centre and heart of the community'. And then, for many years her major project, the creation of Jackson's Lane community centre – now a much-loved north London institution.

At the time, the centre offered a space for local people to make things happen for Nicky Gavron, London mayor Ken Livingstone's second in command, is a deputy with a mission. As the driving force behind the London Plan, one of her key priorities is to make London a safer, more friendly place for children by zoë blackler. photograph by robin mayes

destiny's child



themselves. Youth clubs, drama groups, parent support and drugs-awareness groups – all grew out of it.

'What I learnt then,' she says, 'was the collective power of people working together and what they can achieve. The point of Jackson's Lane was that people had a stake in it. It was about bringing out the creative in everyone, making things happen for themselves. So many people got involved.' It is a philosophy that still fuels her enthusiasm today.

In 1986, the 'indefensible' disbanding of the GLA drove her into party politics. The move to centralisation under Thatcher went against everything she had learnt during her years of community activity.

Her first move as a fresh labour councillor for Haringey was to initiate a neighbourhood action plan for her area. Local schoolchildren produced a 25ft scale model of Archway, which helped other residents and traders feed in their ideas for improvements to the area.

From the moment she moved into politics, she was determined there should be a renewed government for London. 'The only good thing about the abolition of the GLC was that it allowed us to reinvent London government,' she says. And she is clearly thrilled to be a part of that.

The first thing the mayor asked her to do

when he appointed her as deputy was to visit Berlin. Gavron's mother was a refugee, a Jew who fled Berlin under the Nazis at the age of 16. 'That's partly why I became a politician,' she says. 'She couldn't speak out, which gave me a tremendous sense of injustice.' The Berlin visit was 'so symbolic'.

Gavron was born in Worcester, and moved to London at 18 to study the history of art and architecture at the Courtauld Institute. Looking back, she would have loved to have studied architecture, but blames bad career advice.

Throughout her career she has focused on planning. She chaired the London Planning Advisory Committee between 1994 and 2000, is a member of the Local Government Association, leading its reforming local planning group. She sits on the government's UK sustainable development commission and on English Heritage's London advisory committee. And last year, she was made an honorary fellow of the RIBA.

Her experience with planning has taught her to have a holistic approach. 'You can't look at housing separately from jobs or from open spaces. Social, economic and environmental – they're all interconnected. That's why the GLA is so interesting. That's why the reform of the Green Paper is so interesting.'

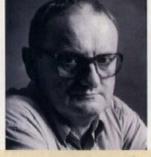
The connection between London and Berlin is part of the mayor's strategy to develop relationships with five foreign cities – Tokyo, New York, Berlin, Paris and Moscow. Each will be hosting a conference as part of the collaboration, with London holding one on the environment.

London has a lot to learn, Gavron says. In a recent visit to Moscow, she explored the tube system. 'The gap between trains there is never more than 90 seconds. It's run like a military operation. Our aim is for 90 seconds on London's underground.'

Transport, of course, is crucial to her plans for London, and Crossrail will be the 'backbone' to future development in the capital. But while Gavron has high hopes, she will have to argue the case with central government for the resources needed. At the moment, the plans are 'a raft, but with holes in it', she says.

Gavron says her job as deputy mayor is weaving together the different strands of her career. But while she is moving on a larger stage, some things never change. She is still fighting to save her library.

28 March 2002



martin pawley

Gosford Park – the meaning and purpose of life in a country house

When ordinary folk troll round the visitor circuit at stately homes such as Blenheim or Longleat, they usually purchase a guidebook or pick up a leaflet that tells them what they are there to see. These guides are generally swallowed whole (as it were), even though the information they contain is useless in the context of everyday life.

At Syon Park, for example, the stapled guide begins 'Welcome to Syon House, home to my family for over 400 years,' signed the Duke of Northumberland. At Beningbrough, there is a guote from a letter that Van-

brugh wrote in 1721: 'There are several gentlemen in these parts of the world that are possess'd with the spirit of building.' At Rousham Park in Oxfordshire, there is a stern announcement to the effect that the house and garden is 'a place of pilgrimage for students of the later work of William Kent (1685-1748)'. At Buckingham Palace, the guide begins: 'Since the Norman Conquest, four great London palaces have served as the seat of majesty,' and goes on to prove that the present one is indeed the fourth.

Admittedly there is more to even the most cursory of these guides than a first sentence, but the first sentences give the authentic flavour of the whole nonetheless.

They capture the gagged and bound art historicalness of it all, the fawning attention to dates and ranks, honours and alleged architectural causes and effects. This is the dessicated, button-down English Heritage/National Trust exit-through-giftshop approach to history.

It is nothing like the real thing, which was all about money and owning land as far as the eye could see, when ownership really did mean power. Oh, if only there were a stately home that had not been swaddled in ancestors and picked to death by academics!

the Duke of Wrotham Park h b, there is a tory-it was build 'In Gosford Park the seething, scheming shooting party guests could not care a blue plaque for the Palladian artistry of Isaac Ware'

Well now there is, and for the past few weeks it has been called *Gosford Park*. At first sight, the first sentence of its guidebook – 'It is unusual to encounter a major country house surrounded by an extensive park within 14 miles of central London' – makes it sound like all the others. But it isn't.

The sentence comes from an article about a house called Wrotham Park, which was where most of *Gosford Park* was shot. Admittedly even Wrotham Park has an untypical country house history – it was built for an admiral who was executed on the deck of his own flagship in

Portsmouth Harbour for the crime of losing Minorca – but that need not detain us here.

What is important is that the admiral's estate (in the guise of *Gosford Park*), has featured in a hugely successful country house film that has nothing to do with the National Trust/English Heritage guidebook view of the world at all. So much so that the very thought of Wrotham being opened up to the public now, with *Gosford Park* videos for sale in its gift shop, has one collapsing with laughter.

The point about the film is that it offers a perspective on the meaning and purpose of life in a great country house that is exhaustively researched and totally convincing, yet utterly incompatible with the bowd-

lerising conventions of art history, let alone the sanitised version of history that still goes into theme parks by the bucket load.

In Gosford Park, the seething, scheming, shooting party guests could not care a blue plaque for the Palladian artistry of Isaac Ware. No more could any one of the 30 reviewers listed on the film's website muster up a single mention of its architecture.

Many more Gosford Parks and the whole monstrous edifice of heritage will be laughed off the stage of modern planning and social order.

a life in architecture

peter conradi

Writer Peter Conradi started to notice architecture when he went up to the University of East Anglia in 1964 and was exposed to the vernacular architecture of Norwich on the one hand, and the Brutalism of Lasdun's campus on the other. 'I lived in the Ziggurat which I thought was the worst designed building I'd ever been in. There were no external windows on the corridors which meant that it was dark during daylight - infuriating. The walkways are another disaster because there's nothing between you and the Urals.' That said, he admires Lasdun's National Theatre: 'It's democratic, with no grand entrance."

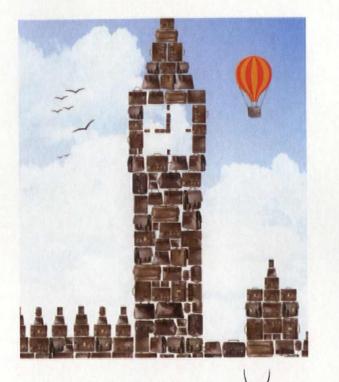
Conradi lived in Krakow for two years – 'a city which got forgotten, its beauty is the beauty of neglect'. He has also lived in America ('the United States of Amnesia') and deplores the way buildings there are constantly replaced,'as if the past is dispensable'. Chicago is the exception: 'It's a museum of fabulous early Modernist buildings, a must for every architect.'



Conradi spends part of the year in Cascob, mid-Wales, where he has shared ownership of a beautifully proportioned 1857 school house. Novelist Iris Murdoch, the subject of his recent acclaimed biography, was a frequent visitor. Conradi finds the area astonishingly beautiful and takes particular pleasure in the limestone landscape,'those hills without tops to them, and some of the tiny local churches, such as Patrishow (pictured) and Rhulen, which have spectacular carved rood screens.

Deborah Singmaster 28 March 2002

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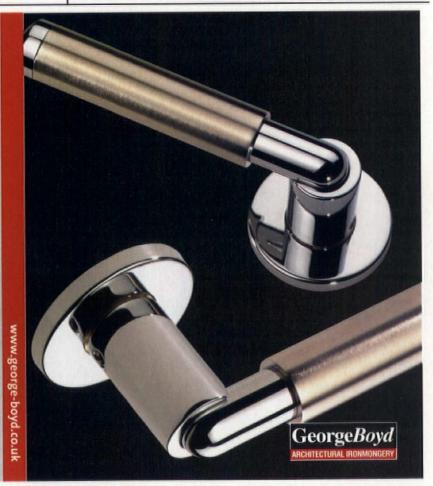
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Devonshire cream

Bennetts Associates' redevelopment of a former BT site in Devonshire Square in the City of London offers an alternative to the standard masonry-clad and glazed office facades

By Kenneth Powell. Photographs by Peter Cook/VIEW

a louidenne study



As late as the 1920s Houndsditch, on the eastern fringe of the City of London, was described by one of the leading guidebooks of the day as 'the headquarters of Jewish brokers and dealers in secondhand clothes'; nearby Petticoat Lane was not the tourist attraction it has since become. Just to the north, the great brick warehouses around Cutler Street, built by the East India Company, contained 'vast quantities of carpets, porcelain, tea, tobacco, feathers, drugs, spices and other Oriental wares'.

During the past three-quarters of a century, the relentless growth of the City has pushed back the boundaries of the East End. The Cutler Street warehouses were (to the disgust of conservationists) partly demolished, partly gutted in the early 1980s to contain offices. Houndsditch - the place where medieval Londoners deposited their dead dogs (and doubtless much else) - is now an inert street of largely post-1960 vintage, its frontages featuring alternately blank tinted glass or witless Post-Modern detailing. The Heron Tower, set to replace a particularly dismal pair of buildings at the Bishopsgate end of the street, offers the best hope for Houndsditch and would form a dramatic contrast to Foster's Swiss Re tower, rapidly rising on the former Baltic Exchange site just to the south.



The entrance is in the north-west corner of the site



As Rab Bennetts of Bennetts Associates explains, Houndsditch, even today, lacks cachet - hence the rather curious address (2.5 Devonshire Square) for the Premier Place office development that occupies a site between the busy street and the still-tranquil square tucked away behind, that retains a few Georgian houses. Agent Simon Harris, acting for BT - Bennetts Associates' initial client for the development - saw the Devonshire Square address as a useful marketing tool, and it was established that the natural point of entry to the building was on the north-west corner of the site. From here, it is a short hop to Liverpool Street station, via a pedestrian alley used by thousands of commuters daily. There is a steep fall in pavement level from north to south, hence the decision to locate the main reception area at first-floor level - areas of the ground floor are occupied by the service yard and by a bar, accessed from Houndsditch.

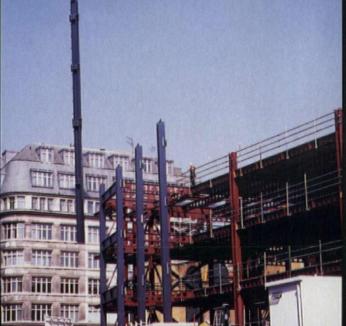
There were a number of problems associated with the redevelopment of the site, formerly occupied by a telephone exchange. A BT cable chamber, wide enough to carry a Tube line, extended diagonally across the western edge and had to be retained intact at basement level, and there were several points where cable ducts pierced the site vertically. After planning consent had been



A location which brings the benefit of a Devonshire Square address - considered to have more cachet than the alternative Houndsditch







Structure, services and procurement Office buildings in the City of London are bought and sold like any other commodity. Each transaction brings with it an army of lawyers and construction consultants with a brief from the purchaser to show that the project is not as perfect as the vendor maintains. In these adversarial conditions, it is hardly surprising that design is sometimes under threat or that some of the designers fail to stay the course. It is quite normal for one architect to obtain planning consent, only for another to execute the scheme for a new owner and for a third to carry out the tenant's fittingout. It goes without saying that the more radical a design, the more robust should be its design strategy in terms of technical rigour.

The planning consent scheme, obtained by Bennetts Associates for BT, was based on an exposed Corten steel frame (model photograph above), with relatively long internal spans and a single, linear atrium. Whitby Bird, Cundall Johnson and Davis Langdon & Everest – all of which had worked with Bennetts Associates on previous projects – were responsible for the structure, services and cost respectively. Whitby Bird's sympathy with architectural detail and its experience in fire engineering provided the initial confidence for Bennetts Associates to pursue an exposed steel structure that would withstand the attention of those who would inevitably scrutinise the project at a later stage. Although there were changes along the way, the innovative use of steel as the principle element of the facade has survived intact, despite the obvious questions raised about the need for fire protection, durability, thermal breaks and quality.

The past 20 years have seen steel become the dominant structural medium in the City on account of its potential for rapid construction and prefabrication for congested sites, but it is surprising that few buildings make a virtue of this form of construction. The combination of steel and the standardisation that characterises office planning imposes a strict discipline on the structural frame, with repetitive column grids based on 1.5m multiples and secondary beams supporting metal decking for the slab at regular three-metre centres. Most beams are of the 'cellform' type, with frequent circular holes that allow the flexibility for a multiplicity of services penetrations and with studs welded to the top flanges to achieve composite action through the slab. The service/circulation cores at Devonshire Square are in the optimum structural locations for lateral bracing.

Unlike some of the classic exposed steel-frame buildings in the US, where the handsome external frame can disguise a concrete-encased structure inside, the external structure at Devonshire Square has the

integrity of its load-bearing function. To express this, columns and beams on the facade are not covered with fire protection, but are shielded by the cladding design. The column flanges and the beams – the dimensions of which are large enough to cover the raised floor and ceiling zone – incorporate a degree of redundancy in the structure that assists with fire resistance. The necessary thermal break between each internal beam and the external structure is achieved by a special insulated connection. Tolerances are about half that of a normal steel frame and workmanship on the steel facade itself is of a very high order. Deep-plan office floors for IT-intensive dealer rooms are not the

place for low-energy solutions such as natural or mixed-mode ventilation systems. The need for artificial cooling was evident from the outset and, in consequence, the four-pipe fan-coil system follows fairly conventional lines. Nevertheless, measures to control solar gain include external louvres on the south elevation and in-cavity blinds on those

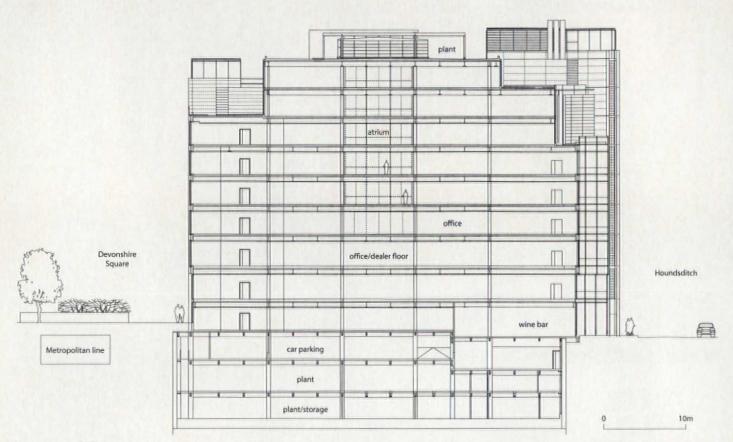
BT sold the site with the benefit of planning consent to AXA, which facades subject to low sun angles.

reviewed the design and the team. It was also able to buy a neighbouring building and enlarge the development. Bennetts Associates was reappointed to complete the scheme, together with

Cundall Johnson and Davis Langdon & Everest, but Whitby Bird was replaced by Waterman Partnership on account of the latter's greater City experience. AXA also asked for a more dramatic entrance and for the single atrium to be divided into two, as it gave greater flexibility for the single tenant market. At the same time, the internal structural grid was modified to avoid the longest spans. Not unexpectedly, AXA was nervous about Corten steel and, as there were some real difficulties with avoiding rust run-off, a painted solution was adopted instead. New planning consent for the modified design was quickly secured and construction began shortly afterwards, in late 1999. The main contract was carried out on a design-build basis, with Bennetts

Associates novated to the contractor. Changes of this kind reflect the pressures of property trading and, although they call for a certain resilience from the design team, they also provide the opportunity to improve the design. The sequence of internal spaces, the finish to the steel, the massing of the corners and upper levels, the landscaping of Devonshire Square, have all benefited from AXA's involvement. The building has since been sold again, with Sheppard Robson carrying out the fit-out for the Royal Bank of Scotland. Rab Bennetts, Bennetts Associates

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section AA

obtained, BT sold on the site to AXA, which retained the architects (though Waterman Partnership replaced Whitby & Bird as structural engineer for the scheme).

Construction began late in 1999 and the building is now being fitted out for occupation by the Royal Bank of Scotland. AXA's commitment to the ideas in the project, says Rab Bennetts, ensured its quality was not compromised by the design-build procurement process.

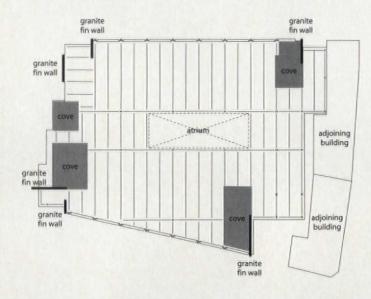
The use of a steel frame for the scheme

was in line with recent City practice. From the upper floors of the building there is an excellent view of SOM's mammoth Bishopsgate development, where panellised Post-Modern detailing is applied to a steel frame. 'Stick-on facades' don't come naturally to Bennetts – 'we wanted to avoid a facade job', he says. 'But architectural integrity is not a high priority in the City – our ideas had to be pragmatic and commercially viable.'

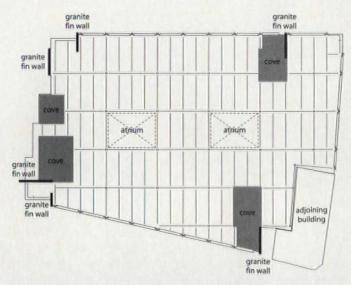
The City, Bennetts says, is a place for 'selective innovation – you have to choose

your moment'. There was no scope for the highly progressive environmental agenda of Bennetts Associates' Wessex Water headquarters (where the concrete frame is part of the equation). Conventional air-conditioning was mandatory.

Bennetts Associates' early buildings were, in fact, mostly concrete-framed, though Rab and Denise Bennetts had a preoccupation with the role of the frame which extended back to their student days (and the influence of the late Andrew Jackson), their travels in



Diagrams showing the Bennetts Associates/Whitby Bird scheme which obtained the original planning consent (left), and the later as-built Bennetts Associates/Waterman Partnership scheme (right). The original submission was based on an exposed Corten steel frame with long



internal spans and a single linear atrium. In the later diagram, the internal structural grid has been modified to avoid the longest spans and the atrium has been divided into two to allow greater flexibility for the tenant market



From left to right: Cummins Power Generation Factory, Loch Lomond and the Trossachs National Park Gateway, Wessex Water Operations Centre

The integrity of structure has been fundamental to Bennetts Associates since the foundation of the practice in 1987. A particular influence was a meeting between Rab Bennetts and Kevin Roche in 1982, when Roche described architecture that dislocates structure and facade as 'like designing the wrapper on a chocolate bar'.

The practice's on-going research into the integral frame led to the design of Wessex Water Operations Centre (AJ 22.11.01) where the combination of slender steel framing and lightweight concrete floors

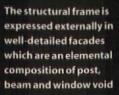
plays a key role in the passive servicing strategy. The exposed steel structure of 2.5 Devonshire Square was informed by the steel frame at Bennetts Associates' design for the Cummins Power Generation Factory in Marston, Kent (AJ 22.11.01). In turn, the portal frame structure of the Loch Lomond and Trossachs National Park Gateway and Orientation Centre (AJ 4.10.01) was conceived as an abstraction of the more commercial structural vocabulary employed at Devonshire Square.



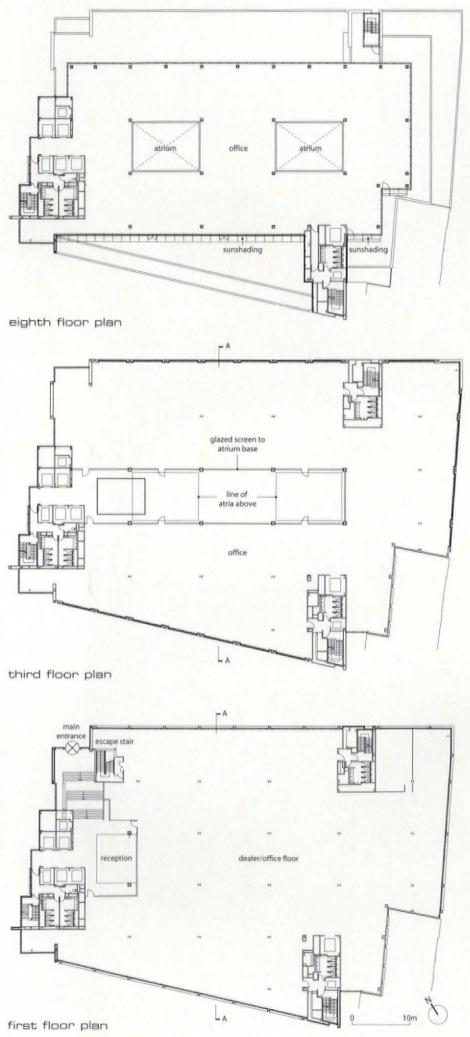
The layout defines spaces which would make ideal meeting rooms 28 March 2002

Corner of the north facade overlooking Devonshire Square

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28 March 2002

the US, where they were in awe of the work of the Chicago School, Mies, Kahn, and Roche Dinkeloo, and Rab's time at Arup Associates under the late Peter Foggo.

In 1996, the year that design work on Premier Place started, Bennetts Associates' proposals for a new factory for Cummins Engines came under the scrutiny of Kevin Roche, acting as advisor to Cummins – Bennetts' return to steel for that scheme informed the City project.

The aim, in true Chicago spirit (and even Mies could sometimes be capable of a form of facadism), was to express the structural frame externally, creating well-detailed facades which are an elemental composition of post, beam and window void. In the early phases of the project, Corten steel was proposed, 'but it made our clients nervous', says Bennetts. 'The idea of a facade "maturing" over some years doesn't make sense in a context where the aim is to let the building quickly,' he says. One quality Bennetts specifically did not seek was that of the minimal or understated; 'the modern City office building is really a financial factory', he says. 'Solidity and a certain weightiness are appropriate.'

As constructed, Premier Place includes nine office floors and three basement levels, which are used for parking, services and storage. The office floors are conventional enough in terms of their scale and appearance, providing the requisite open-plan flexible spaces - the cellform beams which gave the interiors a strongly industrial character at pre-fitout stage have now been covered by ceiling panels that conceal a plethora of services running through the perforated beams. A stepped series of atria, rising above level 3, provides increased natural light, but these remain standard City floors, the product of an essentially North American office culture, where the comparison with a Victorian factory is not inappropriate. Service cores are located at three points, on the western perimeter, where the main bank of lifts is adjacent to the reception area, and on the south-east and north-east corners of the building. The strategy has obvious advantages in terms of delivering unencumbered office floors but also reflects Bennetts' desire to animate the edges of the floors, to allow the building's occupants views out and visual contact with their surroundings.

The fine materials and careful detailing seen in the staircases (framed by stone-clad 'bookends'), with their granite treads and landings, reflects this idea, as well as the overall air of quality in the completed scheme. The transparent glazed boxes that top the lift-shafts are another distinctive touch which could have been lost in the procurement process. Rab Bennetts was equally keen to challenge the general tendency of City office schemes to iron out individual or non-uniform spaces in favour of universality – the placing of the cores defines a series of such spaces, ideal as meeting rooms,





Perimeter service cores mean that all occupants can enjoy the views and allow for unencumbered flexible open-plan office floors (left)

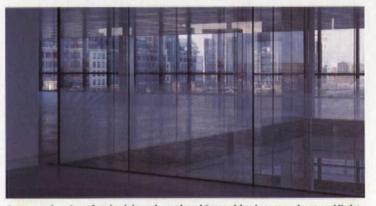
though they might be requisitioned as executive offices, which have striking views out. Again, he praises the client for its support of quality and distinctiveness – though these surely count in terms of the perceived commercial value of the building.

Seen from the surrounding streets, for example, up St Mary Axe, the building is a sober but far from oppressive presence. On Devonshire Square it provides a welcome contrast to the bulk of an adjacent sub-station, clad in crude Post Modern brick which does nothing to reduce its impact. Rights of light issues, of course, explain the set-backs which occur from level 5 upwards. On levels 7 and 8, which are conventional rectangles, the conflicting grids in

the scheme, reflecting the vagaries of the site as found, are resolved.

Though the building is air-conditioned, there is an attempt to minimise energy use by means of sensible low technology – incavity blinds, for example, and sunshade louvres on the southern elevation (which appear so solid from the street as to give the unfortunate impression of a dense layer of plant rooms).

For those who come to work in this



A stepped series of atria rising above level 3 provides increased natural light

building, the elements of 'delight' will hopefully leaven what is, on the whole, a typical rather than exceptional contemporary working environment. Where the building contributes most is in its external persona, in stating clearly the potential for a rational City architecture which has clarity, integrity and quality: what sort of impression do some of the flashy frontages in the surrounding area give of the institutions they house?

> With the impending redesign of Devonshire Square, which Bennetts sees as a necessary adjunct of the project, its full urban potential will be realised. Leaving aside exceptional projects such as Swiss Re, current City of London architecture seems to be dominated by two approaches to facade design: those where masonry cladding or screening predominates (Foster's City Gate, Finsbury Square, is a good example), and those where glazing technology is

exploited to the fullest degree. Bennetts Associates offers an alternative way which, though rooted in Classic Modernist ideals, has relevance for the ongoing reconstruction of the Square Mile.

In keeping with the City of London's ethos, Bennetts Associates sets out to design a building with 'solidity and a certain weightiness' É.

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Costs

Costs based on anticipated final account, excluding the fitting out of the office on the ground and first floors, wine bar and two ground floor retail units which were provided as shell and core to separate tenants

SUBSTRUCTURE

£93/m² FOUNDATIONS/SLABS Excavation. Bored piles. 1.2m ground slab. Secant piled retaining walls and sheet piled retaining walls

SUPERSTRUCTURE

FRAME

Steel columns and beams. Perimeter columns for external walls exposed externally and metal clad internally

FLOORS

Metal deck with 150mm or 200mm concrete topping

\$27/m2 ROOF Membrane roofing. Louvered canopy over plant. Two separated double-glazed atria roofs

STAIRCASES

Pre-formed metal feature stairs with stone treads in main core. Pre-formed metal stairs from ground to roof in two cores. Precast concrete stairs in basements

£201/m **EXTERNAL WALLS** Double-glazed curtain wall. Non-fire rated and fire rated metal cladding. Stone cladding with insulated

panels. Sunshading on higher floors. Painted perimeter steel columns and painted perimeter beams exposed forming part of facade. Shopfronts to retail units and wine bar on ground floor

EXTERNAL DOORS

External main entrance revolving door set in glazed screen. Metal access doors to roof plant areas

INTERNAL WALLS AND PARTITIONS £72/m² Glazing around both atria with balustrade. Blockwork walls in basement. Dry-lined partition walls ground and above. Laminates to WC partitions

INTERNAL DOORS

Glazed doors from lift lobbies to fire escape stairs and office areas. Metal doors to plant rooms. Light American Oak veneer timber doors in cores and toilets

INTERNAL FINISHES

WALL FINISHES

Metal cladding and stone walls to reception area/lift lobbies and part of internal office areas to preserve continuity with external metal cladding/stone walls. Plastered and painted finish to blockwork walls and painting to dry lined partitions

FLOOR FINISHES

Carpet generally with raised floor in offices. Reception area, lift lobbies and toilet floors in stone. Dust sealer to concrete floors in plant rooms and car park

CEILING FINISHES

Metal ceilings to offices and reception area. Plasterboard ceiling to cores and WCs

FITTINGS AND FURNISHINGS

Large reception desk with nearby glass cabinets Mirrors above washbasins and on some toilet walls. Lighting pelmet above washbasins. Blinds to office space

SERVICES

SANITARY APPLIANCES Floor mounted WC pans. Sensor taps. Washbasin

comprised of sloping 50mm thick marble with gully	
channels below - no typical basins	

SERVICES EQUIPMENT	£39/m ²
Window cleaning equipment and BMS	

DISPOSAL INSTALLATIONS £16/m² Syphonic rainwater installation to serve roof and balconies. Ventilated one pipe cast iron above ground drainage

28 March 2002

WATER INSTALLATIONS

40,000 litre GRP cold water storage tank with booted potable cold water to all draw off points in Table X copper pipework. Two 1,200kW gas-fired, highefficiency, steel shell boilers, with fully automatic modulating flame pressure jet burners

SPACE HEATING/AIR TREATMENT

Recessed four-pipe fan coil sytem complete with ducted fresh air supply and extraction via ceiling void. FCU's supply air via a combination of linear diffusers and swirl diffusers

FLECTRICAL SERVICES

Three MVA incoming 11kV supply to four 1,000/1,400kVA transformers, with 500kVA standby diesel generator set. General lighting and power to landlords areas with modular wiring

LIFT AND CONVEYOR INSTALLATIONS £49/m²

PROTECTIVE INSTALLATIONS

£19/m²

Addressable fire detection, alarm and life safety control and monitoring system incorporating public address system for phased evacuation, to L2 standard. Dry riser installation

£13/m² Containment only to risers and basement areas via cable tray/trunking

BUILDERS'WORK IN CONNECTION



PRELIMINARIES AND INSURANCES

PRELIMINARIES, OVERHEADS AND PROFIT £182/m² Contractor's preliminaries, profit and attendance

EXTERNAL WORKS

LANDSCAPING, ANCILLARY BUILDINGS £300.000 Includes York stone and granite setts

Cost summary					
	Cost per m² (£)	Percentage of total			
SUBSTRUCTURE	93	7			
SUPERSTRUCTURE					
Frame	208	15			
Upper floors	51	4			
Roof	27	2			
Staircases	21	2			
External walls	201	15			
External doors	7	1			
Internal walls and partition:	s 72	5			
Internal doors	20	1			
Group element total	607	45			
INTERNAL FINISHES					
Wall finishes	34	2			
Floor finishes	47	3			
Ceiling finishes	31	2			
Group element total	112	7			
FITTINGS AND FURNITURE	14	1			

SERVICES		
Sanitary appliances	6	1
Services equipment	39	3
Disposal installations	16	1
Waterinstallations	11	1
Space heating and air treatment	110	8
Electrical services	74	5
Lift and conveyor installations	49	4
Protective installations	19	1
Communication installation	13	1
Builders' work in connection	11	1
Group element total	348	26
PRELIMINARIES AND INSURANCE	182	13
EXTERNALWORKS	10	1
TOTAL	,366	100

WEBLINKS

Bennetts Associates www.bennettsassociates.com Whitby Bird & Partners www.whitby-bird.com Waterman Partnership www.waterman-group.co.uk Davis Langdon & Everest www.davieslangdon.com www.arup.com Arup

FACADE ENGINEERING

CREDITS TENDER DATE May 1999 START ON SITE DATE 16 August 1999 CONTRACT DURATION 28 months **GROSS EXTERNAL** FLOOR AREA 31 500m FORM OF CONTRACT AND/OR PROCUREMENT Civils JCT lump sum Main contract JCT 2 stage design and build TOTAL COST £41.7 million CLIENT Axa Real Estate Investment Managers (Axa REIM) CLIENT (PRE-PLANNING) **BT** Properties ARCHITECT: **Bennetts Associates:** Denise Bennetts, Rab Bennetts, Richard Castor Jeffrey, Nicola Chambers, Gregory Chapman, **Richard Cohen, Alison** Darvill, Nick Dodd, Susanne Garrod, Bjork Haraldsdottir, Andy Kirk, Jon Matthews, Alex Philip, Sophie Skoug, Scott Wardlaw, Richard Warwick, Polly Waterworth, Doric Wells, STRUCTURAL ENGINEER (PRE-PLANNING) Whitby Bird & Partners STRUCTURAL ENGINEER (POST-PLANNING) Waterman Partnership SERVICES ENGINEER Cundall Johnston & Partners **QUANTITY SURVEYOR** Davis Langdon & Everest, Mott Green Wall

Arup Facade Engineering **FIRE ENGINEERING** Jeremy Gardiner MAIN CONTRACTOR **Carillion Building** LIGHTING CONSULTANT Equation Lighting Design PROJECT MANAGER **Buro Four Project** Services SCULPTOR: Paul de Monchaux SUBCONTRACTORS AND SUPPLIERS M&E Hayden Young; lifts Thyssen Lifts & Escalators; curtain wall contractor Focchi; steel frame Wescol Glosford; ceiling SCS; internal stonework Grants of Shoreditch:stone supplier Campolonghi UK; internal joinery Shadbolts/LSA Projects; atrium glazing (roof) Spacedecks: atrium glazing (walls) Fendor Hansen; external atrium cladding Emprose; internal metal cladding Sorba UK: ironmongery **Elite Architectural** Ironmongery; architectural metalwork GMC/Satin Stainless: roofing Roofline: drylining JPC Interiors; fire protection IFP/ Fastglobe; sundry metalwork Kimber Engineering; external painting Forest Paints/Hill Price Associates; external works Crowleys: raised floors Hewitsons



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£7/m2

£20/m²

£34/m²

£47/m2

£31/m²

£14/m²

£6/m²

£208/m²

COMMUNICATION INSTALLATIONS

A facade with an exposed structural steel frame

Office, Devonshire Square, London Bennetts Associates

working details

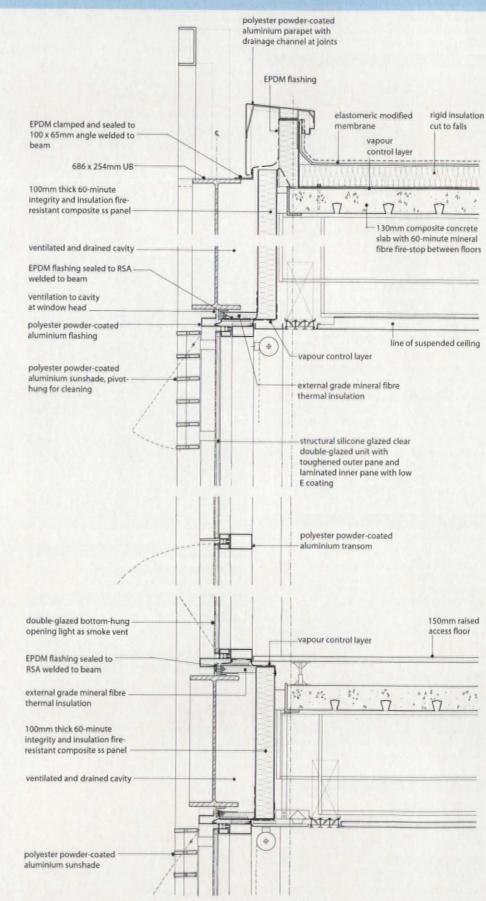
In sympathy with nearby Victorian warehouses, the office building expresses its structure with a rugged, load-bearing steel and glass facade. The exposed steel frame, which is constructed to half National Structural Steelwork Specification tolerances, supports six stories of composite concrete slabs on cellular steel beams. The steel frame consists of

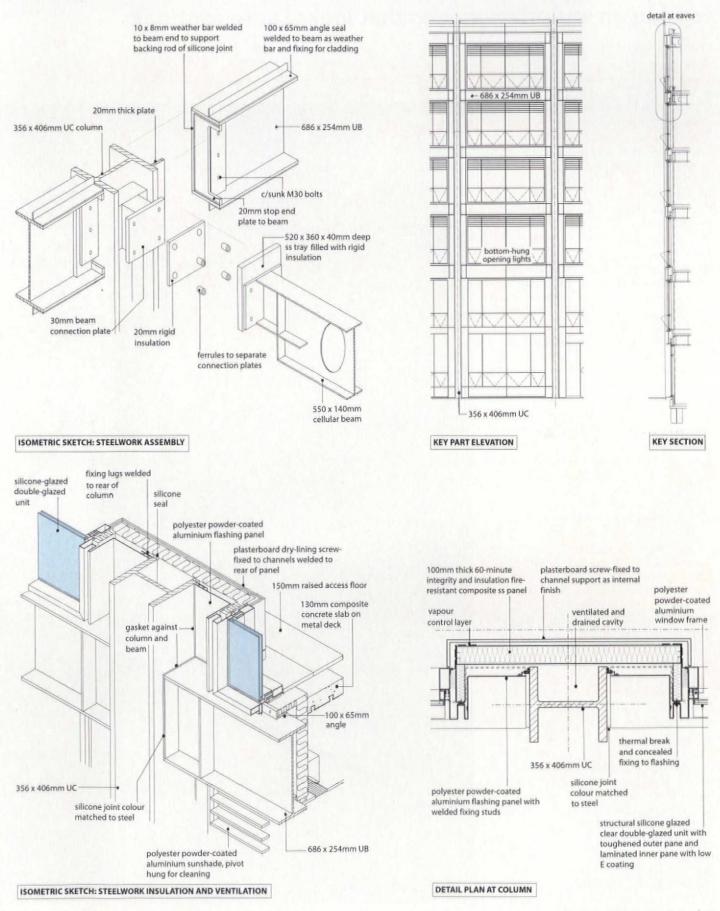
a series of 356 x 406mm universal columns and 686 x 254mm universal beams. Fire protection is achieved by a combination of strategies; the members are oversized in relation to their loading, and they are backed with a series of 60-minute integrity and insulation fire-resistant composite panels, which extend beyond them at the sides, shielding them from heat. The gap between structure and panel is drained and ventilated to avoid condensation.

Thermal bridging is minimised by a thermal break between internal and external structural elements. Shear bolts with ferrule spacers separate column and beam connection plates, and the gap formed by the spacers is filled with rigid insulation.

The cladding is a grid and panel system supported by thermally isolated brackets. The polyester powder coated aluminium frames are structural silicone-glazed. The double-glazed units have a toughened outer pane and a laminated inner pane with a Low-E coating to the outer face. The lower glazed panels open to vent the office floor for smoke evacuation. On the south facade, the glazing is screened with solar shades which are pivot-hung to allow the glazing to be cleaned.

The steel frame is painted to a high specification using a zinc-rich primer and M10 barrier coat with a decorative finish to match the cladding. Susan Dawson





ABK in Ireland

Over the past 40 years, the practice of Ahrends, Burton and Koralek has developed a special affinity with the Emerald Isle, forging an enduring success that looks set to continue

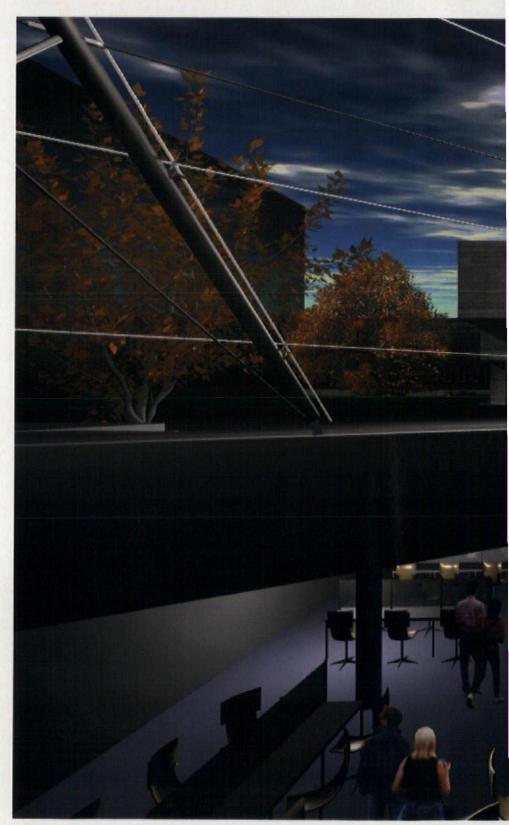
By Kenneth Powell

The partnership of Peter Ahrends, Richard Burton and Paul Koralek, which had existed in spirit since the three men became friends and collaborators at the AA in the early 1950s, was formalised on the basis of Koralek's victory in the 1961 competition for a new library at Trinity College, Dublin (TCD). Ireland, therefore, had a special resonance for ABK from the beginning – it was Irish patronage which launched one of Britain's most consistently interesting architectural practices. Forty years on, the special relationship between ABK and Ireland continues, with a number of projects on site across the country.

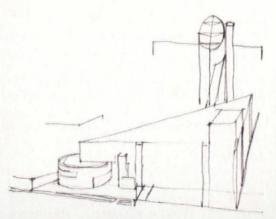
The Berkeley Library took six years to complete and was managed by ABK from London. It was a later TCD project, the Dental School and Hospital extension for which the firm was appointed in 1991, that led to the opening of a Dublin office, initially led by Paul de Freine and latterly headed up by two Irish-born architects, Robert Davys (a veteran of ABK's long-running Moscow embassy project) and John Parker (ex-de Blacam & Meagher). It currently has a staff of 13, though Irish projects also involve staff in the London office – both Ahrends and Koralek regularly visit Ireland.

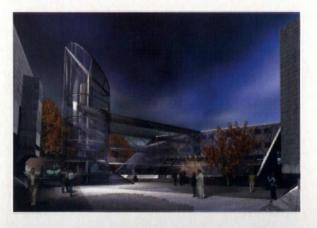
The success of the library, the first modern building of significance in Dublin since Michael Scott's Busaras (1952), led to further jobs – the school campus at St Andrew's College, Booterstown, completed in 1972, and the Arts Building at TCD, opened in 1978. Then the work dried up. A stagnant economy through the '80s drove young Irish architects to London and beyond in search of work – a remarkable number ended up in the office of James Stirling.

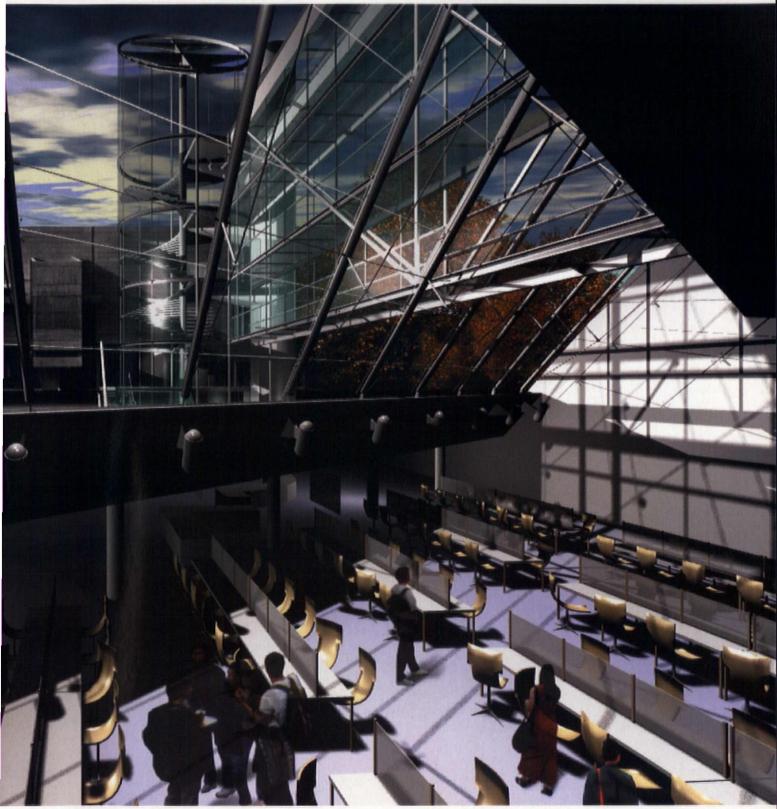
The post-1990 boom, with the economy growing at up to 10 per cent annually, generated what has been seen as an architectural renaissance, with roots, perhaps, in the 'flying circus' which Ivor Richards had assembled to reinvigorate Irish architectural education in the '70s, but equally a reflection of Ireland's new identity as a European nation. New practices were launched, with a broad range of influences – Scandinavia, for example, and the urban insights of Colin Rowe and Aldo Rossi – which extended beyond mainline Anglo-American modernism. (De Blacam & Meagher, Grafton Architects and McCullough Mulvin all secured commissions from



ABK's competition entry to extend its library building at Trinity College, Dublin, was not chosen but was – arguably – the most appropriate solution, not least in terms of its minimal impact on the existing building







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TCD, the latter winning the competition for an extension to the Berkeley Library.) To its credit, ABK has more than held its own in an increasingly competitive scene.

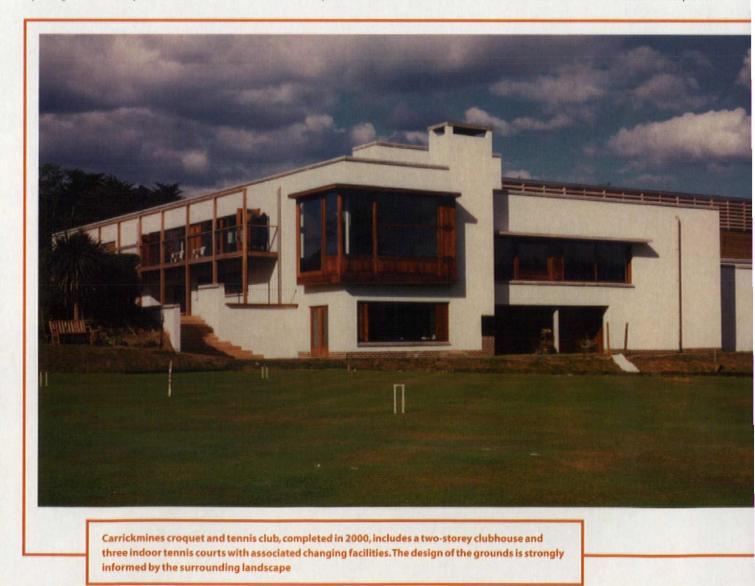
Back in the early '60s, the only concern expressed by Dublin planners about the library project was whether it could be seen from the street. Reassured on this point, they gave the scheme the green light. (The same planners permitted some depressing atrocities to mar the Georgian streets of the city.) By the '90s, attitudes had changed dramatically. The Dental Hospital was located at the less prestigious eastern end of the TCD campus, among the science and engineering faculties - the 'back door' of the College. The existing hospital building was a late Victorian structure in hard red brick, but there was a strong presumption that the additions would be 'in keeping'. ABK opened up the Victorian facade to create a new entrance to the hospital (which treats 2,500 patients weekly), with a full-height, daylit atrium behind providing a connection to a new block housing the clinical facilities - lecture rooms and administrative areas are contained within the old building. To the street the extension is expressed as a curving wall of red brick, pierced by square window openings - a distinctly Rationalist version of contextualism. Behind, however, the new building has a lightweight glazed aesthetic, with a glazed tower which acts as a marker both for the hospital and for an improved gateway to the campus. The scheme was a fascinating balancing act between ABK's established traditions and the more formal urbanism which, as a response, perhaps, to the mistakes of the past, had found favour in the Dublin of the 1990s.

Europeanism came easily to ABK - it was the rise of Hitler which brought firstly Koralek and, in due course, Ahrends to Britain. For younger Irish people, the growing European connection has been linked to a search for a modern cultural identity in which architects have inevitably become involved. ABK's croquet and tennis club, designed for the affluent suburbanites of Carrickmines and completed in 2000, represents a sincere attempt at a pragmatic modern architecture with roots in the Irish landscape. 'It was essentially a landscape project', says John Parker. There are fine views from the site to the Wicklow Mountains and the essence of the scheme was to preserve something of the informality of the place - it was the same challenge, on a larger scale, which had confronted Michael Hopkins at Glyndebourne. The club was an

exclusive institution, inhabiting a collection of second-hand sheds 'held together by paint', as Parker recalls. ABK's proposals had to go to a ballot of members – surprisingly, perhaps, they got nearly 90 per cent support and lots of input to the scheme. The greater part of the new building was to consist of covered, all-weather tennis courts, along with the usual changing rooms, bars and offices.

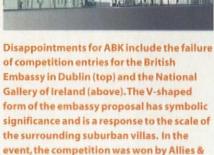
In the best Prairie House tradition – the youthful obsession of Ahrends, Burton and Koralek with Wright should not be forgotten – the building seems to be generated by the landscape, by the contours and the lines of existing garden walls. There is a natural downhill progression from the well-ordered parking area to the smooth, green croquet lawns which give the clubhouse its setting. The covered courts are contained within simple sheds, timber-clad, sheltered from the rain but not heated. The combination of white render and timber on the main building is typical of the new Irish aesthetic.

There have been disappointments for ABK in Ireland – failing to secure the commission for the TCD library extension, of course, the British Embassy competition of 1990 (won by Allies & Morrison), and that for the extension of the National Gallery of Ire-









Morrison. The gallery competition was won by Allies & by Benson & Forsyth



Commissioned to extend the Arts building it built for Trinity College, Dublin in the 1970s, ABK designed a new 'cap' for the complex in the form of glazed pavilions under curved 'floating' roofs

land (1996, resulting in a win for Benson & Forsyth). In the case of the Berkeley Library, ABK's strategy was arguably the right one, not least in terms of its minimal impact on the existing building. TCD has, however, brought ABK back to extend its Arts Building in the sensitive western sector of the campus, close to its most prized historic buildings and overlooking Fellows' Square. The only practical way to extend the building was, in fact, upwards. The new spaces occupy glazed pavilions, under curved, 'floating' roofs on top of the 1970s building. Other work at TCD is in the pipeline.

The TCD connection, along with ABK's long experience of educational work, has ensured it a share in the major programme of investment in new schools and colleges. Work on the Institute of Technology at Tralee, County Kerry, which is relocating from a congested town centre site, began in 1996 with the first students arriving last autumn. The 10ha site at Dromthacker, for all its fine views, is highly exposed, open to the worst extremes of weather driving in from the Atlantic. 'It's a site where you simply have to design for the climate', says Koralek. The buildings are constructed of rendered blockwork with pitched or curved aluminium-clad roofs. The diagram of the new campus, with two buildings realised so far, is equally responsive to the place, with protective covered ways along a curved linear plan, creating (when the project is completed) a city in miniature.

The site for the Institute of Technology at



To be built on a business park outside Dublin, the masterplan for the Institute of Technology at Blanchardstown consists of X-shaped blocks linked by a covered street which looks out onto a landscaped inner quadrangle



Blanchardstown is very different, close to Dublin and a big new business park, served by the M50 motorway, which the Institute, with its stress on practical and business skills, complements. A covered 'street' again connects the teaching and ancillary buildings, here arranged as X-shaped blocks along the 'necklace' of the street, which looks on to a landscaped inner quadrangle. Having drawn up the masterplan, ABK was commissioned for the first four buildings on the site, including a library and assembly hall/refectory as well as highly flexible teaching spaces.

Overhanging metal clad roofs provide extra protection from the Irish rain, while rendered blockwork is the principal ingredient in the materials mix.

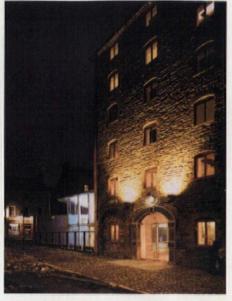
The third of the new technology institutes planned by ABK is at Waterford (where the practice completed a visitor centre, a conversion of a 19th century warehouse, in 1997). The existing buildings on the site, just outside the town, date from the 1960s. ABK proposed enclosing them in an undulating wall of new buildings, with a series of pools and a new square, partly covered by a striking canopied pavilion, punctuating the site – ABK's longstanding collaborator, landscape architect James Hope, was closely involved in the scheme – which has so far not been realised.

Like education, local government in Ireland is currently being transformed, with a new emphasis on public access and 'onestop shops' increasingly in vogue. Tullamore

The design of the Institute of Technology at Tralee was informed by the exposed site and harsh climate. Buildings are arranged in a curved linear plan and linked by covered walkways in order to create a sheltered miniature city







Having previously converted a 19th century warehouse into a visitor centre (right), ABK returned to Waterford to design its new technology institute (above). An undulating wall of new accommodation encloses the existing buildings and brings coherence to the site

is typical of the country towns, once sleepy places, which seem to have acquired a new sense of purpose. The site for the Offaly county headquarters is an extensive Victorian garden close to the town centre, a lush and sheltered place, with fine mature trees. ABK's complex of buildings, a three-storey office block, with single-storey extensions to contain the council chamber, creche and other support facilities, has been conceived as a calm but richly textured composition. The use of timber screening on the facades of the office block is both a climatic and a referential device, while the lower blocks are clad largely in stone – low-energy consumption has been a prime aim in the scheme.

The 9000m² administrative complex at Nenagh, County Tipperary, about to start on site and to be shared by county and district councils, combines a low-rise (largely twostorey) format, appropriate to the context, with some dramatic moves – the two council chamber takes the form of a sawn-off drum punctuating the main frontage, where a glazed atrium welcomes the public. Glass, natural stone and terracotta give the building a proper sense of dignity and quality.

The range of ABK's Irish work is impressive – from local authority housing in Limerick to major development proposals for the heart of Dublin. Last year, the practice was commissioned by Dublin City Corporation to develop plans for a mixed development on a block in the north-east inner city. The project includes both new buildings and the conversion of existing



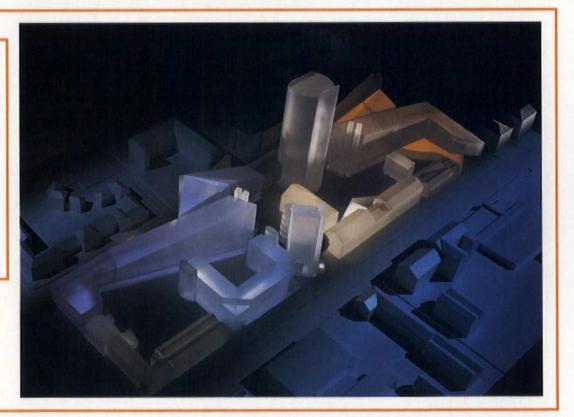
Located in a Victorian garden close to the centre of town, Offaly county headquarters is a richly textured composition of timber screening, stone cladding and glass The design for county offices at Tipperary is a low-rise composition punctuated by a glazed entrance concourse and a sawn-off, drum-shaped form which houses the council chamber



structures, including a Victorian chapel, as well as the provision of a new open space. Robert Davys is highly optimistic about the future: 'Despite all we've achieved, Ireland is still behind the times in terms of its public infrastructure', he says. 'There's a lot of public work to be done, even if the commercial sector falters.' Paul Koralek likes the fact that 'architects still inspire respect in Ireland – the project managers have been kept in check'. Fee-based bidding is shunned and , though PPP-style projects are multiplying, particularly in the educational field, design and build is not the Irish way – ABK often finds itself working with contractors in a traditional relationship and being impressed by their response to innovative designs.

Much of this may, of course, change in years to come – but there seems to be a natural empathy between ABK and Ireland, where the practice prospered when, in the later '80s and early '90s it was clearly suffering from the aftermath of the National Gallery fiasco in Britain. (The Prince of Wales commands little sway in Ireland.) Then there are the 'outstanding' clients which the firm has found there – like Professor Derry Shanley of the Dublin Dental Hospital, who sought out ABK after seeing its John Lewis store in Kingston-on-Thames. Winning the TCD library competition back in 1961 was an extraordinary stroke of good fortune (Koralek was 28 at the time) but the relationship which that success forged has endured and looks set to endure for some time to come.

The development plan for a city block in Dublin provides a mix of uses, ranging from a new centre for government agencies, affordable housing, offices and the refurbishment of a number of historic buildings. Provision is made for a new urban open space and the plan respects the scale and character of the retained 19th century buildings





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Turning inside out By Victoria Huttler. Photographs by Julian Cornish

David Mikhail Architects has transformed Part of a classic Victorian terraced house and its backyard into a versatile living space that

gives a feeling of outdoor living all year round. The client grew up in Australia, where outdoor living is part of everyday life, and wanted to bring some of that flexibility into the project.

The house is a traditional Victorian terrace with a small living room, kitchen and a dining room at the back, opening onto a small courtyard garden. The client's brief was for an extension to the dining room and kitchen at 28 March 2002

interic

the rear of the house, and a flat roof which could be used as a terrace and allow a larger internal space at first floor level.

The scheme has provided a full-height extension, with a new shower room and a study bedroom upstairs, and a large dining area and kitchen downstairs. The entire back section of the house, originally the dining room, was knocked down and rebuilt using much of the original masonry, which is ren-

dered to give the appearance of a new build. Structural glass forms the walls of the extension at ground floor level throughout

the scheme. The alley that ran from the courtyard to the back door of the house is covered in a glass roof, and now forms the Part of the kitchen that houses units and worktops. These fittings run along the entire wall and appear to continue out into the garden through the glass wall. The exterior wall and units are identical in finish to the interior, and provide storage and workspace for

garden equipment and barbecue. The client wanted to avoid using wood unless it had a 'Japanese feel' - dark-stained

Douglas fir was used for all the wood the architects' journal **| 49**

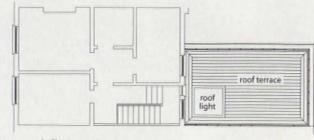
finishes, and a neat black bamboo border planted around the garden gives an oriental feel to the exterior.

A large door slides back to create one big space and allows dining furniture to be taken into the garden easily. There is blurring of the boundaries between the inside and outside areas, regardless of whether the door is open or closed. A white pebble resin floor throughout the dining, kitchen and garden areas gives a free-flowing feel to the space, and helps disguise distinction between the areas. Exterior wall-mounted downlighters give extra coherence to the scheme after dark.

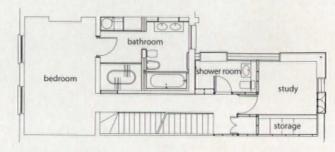
A tiny gravel courtyard between the kitchen and living room can be accessed via a floor-to-ceiling, centrally pivoting door. This courtyard sits where the original back door of the house was, and provides ventilation to the living room. It also gives floor-to-ceiling views from the living room through to the back garden.

Inside, the existing staircase is used, and is illuminated by daylight from above through a rooflight that also forms part of the floor of the roof terrace. The shower room is filled with natural light from the floor-to-ceiling frosted glass window and is decked as a wet room. The study bedroom above the kitchen has a corner window to give views across neighbouring gardens and beyond, and a second with three-way folding doors is positioned perfectly to frame an oak tree behind.

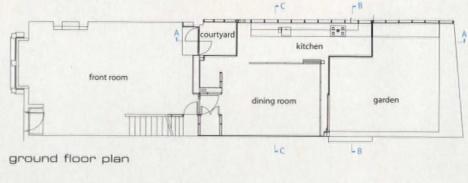
The outdoor living theme is continued on the second floor, where a door opens onto a fully decked roof terrace. This is invisible from the exterior as the extension walls continue up to waist height, creating the terrace balustrade.

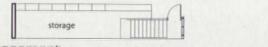


second floor plan



first floor plan





A tiny gravel courtyard between the kitchen and living room (above) provides ventilation to the living room and provides floor-to-ceiling views through the length of the new kitchen/



5m



BUILDING REGULATIONS: approved documents

The Stationary Office have published new

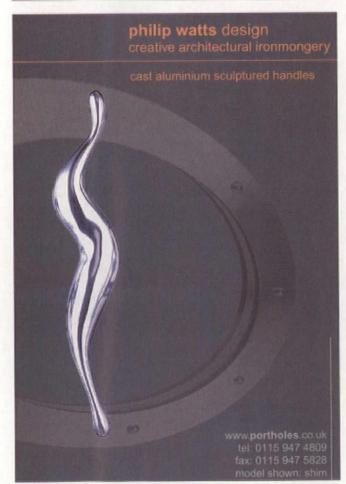
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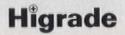
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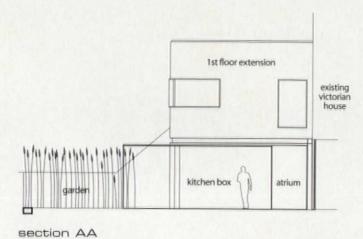


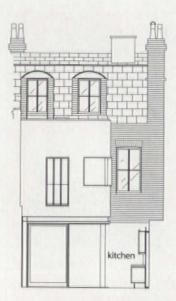
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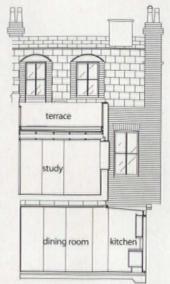
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section BB







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Clockwise from top left: the 'invisible' roof terrace is concealed by a parapet wall; the shower wall is filled with natural light by a floor-to-ceiling frosted glass window; the existing staircase is now illuminated by a rooflight above; sliding doors allow the kitchen to be screened off from the dining room

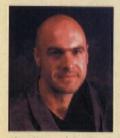
CREDITS

ARCHITECT David Mikhail Architects: David Mikhail, Neil Mclean, Pamela Self M&E Camtech STRUCTURAL ENGINEER BTA QUANTITY SURVEYOR **David Mikhail Architects** CONTRACTOR Novin SUBCONTRACTORS AND SUPPLIERS structural glass Metal UK; floor finish Lasar Contracts; stainless steel

kitchen worktop Link Units; carcasses (kitchen) Ikea; sliding door ironmongery Hafele UK; underfloor heating Thermoboard; radiators Stelrad Planar; honed black Nero granite Zarca marble; tiles Domus Tiles; Ipe decking The Outdoor Deck Company; shower membrane BAL; joinery K&D Joinery; ironmongery Trapex; carpets M&M Carpets; fire and alarm ADT: espagnolettes Sampson



Major Structures



The biggest building you would ever be likely to see, let alone comprehend, were you a pilgrim cresting St Thomas' Hill outside Canterbury, would be the cathedral of Christchurch,

glowing white and pristine among the medieval rooftops of the city. You might drop to your knees and offer prayer or, more likely, gape overawed at the scale of the undertaking. The interior, too, was designed to overwhelm: the windows, tracts of stained-glass blazing allegories to stupefied masses, huge columns branching into tracery and vast fan vaults... you get the picture.

What constitutes awe-inspiring space now? In our secular society, not churches or cathedrals. Mammon has edged God off the floor. Welcome to Megaspace.

Statistics can tell us everything and nothing, depending on your point of view. With megaspaces, they are chiefly concerned with how many other large things you can fit inside. So we know that St Paul's fits snugly within the envelope of the Millennium Dome and the air inside the Eden Project weighs more than the structure itself. But these revelations hide the most significant shift in paradigm. The major function of the cathedral was to overawe and dominate its users while enlightening and empowering them. The major function of a megaspace is to contain things and keep the weather off.

So why are we still impressed? Size must work because it is a recurring theme. Even nomadic societies worshipped large things. The aboriginal people of Australia do not have a built tradition as such, but Ayers Rock (Uluru) has deep significance. Mounts Fuji, Olympus and Everest all have their resident deities and gods. The mantra 'size matters' spread with the advent of organised religion, with every faith creating more and more massive hagiographies, culminating in, arguably, the proposed 150m Maitreya Buddha or the cathedral at Chartres.

Two forces are at work here. We are impressed because we can imagine the industry involved in creating such a structure and because the creation of buildings is beyond our ken. There is a sort of incomprehensible nature to the space created.

So back to religion. For most of us, enlightenment, rapture, nirvana, understanding the human condition will not happen. We do not comprehend our place in the bigger picture and are destined (some say) to return again and again, forever searching. Rather like trying to find the Faith Zone in the Dome.

Matthew Teague

MetalWorks Technical

Xanadus and don'ts

The perfect expression of an engineering principle, could Xanadome herald a new type of architecture?

BY MATTHEW TEAGUE

In Xanadu did Kubla Khan A stately pleasure dome decree For a couple of millennia time ran and ran 'til someone said 'you could put a football pitch under that, see'. Apologies to Samuel Taylor Coleridge.

I first saw Xanadome on top of a Volvo estate outside the RIBA. It was a model, of course, but had travelled, under tension, from the East End of London through rushhour traffic totally unscathed. How many other architectural models would you be confident would survive even a trip down the stairs?

Xanadome the company is a collective comprising engineer Ted Halford of Peter Dann Consulting Engineers, architect Angus Brown of Fraser Brown McKenna, specialist subcontractor Ben Morris of Vector Special Projects and Dan Ptacek, project manager for the Millennium Dome's fabric covering.

Like most true innovations, Xanadome is startlingly simple. One's inevitable first reaction is 'surely this has been done before'. To the best knowledge of the inventor and the patent lawyer, it hasn't.

Xanadome consists of a series of spars, connected to each other with nodes to which, in turn, are connected pairs of cables under tension. The cables fan inwards to anchor points on the ground. The tensile stresses on the cable will have the effect of pulling the nodes towards each other, but this is resisted by the spars. As the cables are equalised, pulling in two opposing directions from the node, the result is a stable, highly rigid but extremely lightweight structure capable of taking a variety of cladding materials.

In the 1800s, Simeon Poisson, a French physicist, realised that the ratio of deformation (length and diameter) changes with different materials. If you were to compare the deformation of a rod of aluminium under compression to that of a rod of stainless steel (of the same diameter), the aluminium would compress to be thicker, therefore having a higher Poisson's ratio than that of stainless steel (0.35 and 0.27 respectively). But in terms of Poisson's ratio, the truly efficient material would have a measurement of 0 - in other words, a ratio of 1:1.

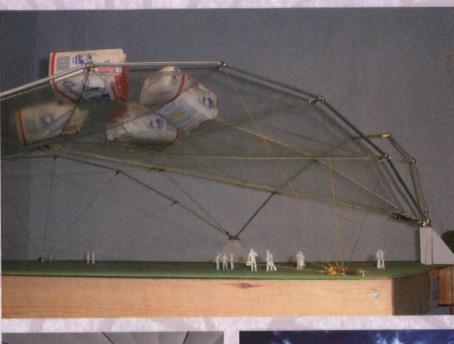
Ted Halford, the engineer behind

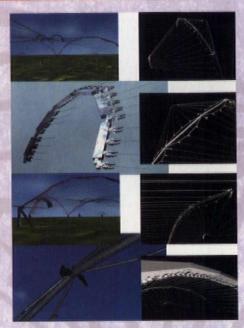
Xanadome, explained the structure in terms of Mitchell's theory, which defines efficient structures as those that adhere to a perfect expression of Poisson's ratio. If all the tension members become longer, and all the compression members shorter, when the domain containing them undergoes a simple deformation, then the structure could be the lightest possible. Examples of other structures that embody this principle are the bicycle wheel (arguably the strongest manmade artefact) and the guyed mast.

Such structural efficiency means that the spanning ability of a Xanadome structure is orders of magnitude greater than, say, a bowstring truss or even a geodesic grid. Coleridge's '...twice five miles of fertile ground/With walls and towers were girdled round...' begins to look like a possibility and not an opiate-induced hallucination.

Of course, the materials chosen for the construction of such a structure have a significant effect on its performance. The stiffer the individual parts, the greater the efficiency of the whole. In fact, the governing factor underlying the Xanadome concept is stiffness, so such construction favours metals, aluminium and steel in particular, and certain composites, such as Kevlar in the tension cables. As with all buildings, an economic view might be taken regarding the performance/price of a particular material (for instance, Kevlar has a 9:1 strength-toweight ratio, but is expensive when compared with steel cable - though you may feel that the extra performance justifies the expense), but it is important to remember that the truly efficient structure has no redundant parts. Xanadome's procurement route already suggests a 'fitness-for-purpose' approach rather than a cost-based one.

The true possibilities of Xanadome become clear when several of the articulated arches are used together. The one-arch arrangement suffers from the ultimate disproportionate-collapse scenario – because it is an inherently efficient structure there is no built-in redundancy, so if one spar or tension member were to fail, the whole lot would ping spectacularly to the ground. A similar problem exists with two arches because they are interdependent. But increase the structure to include three arches and, although each is efficient in its own









A Xanadome model survives a traditional test with bags of sugar; some ideas for applications

right, the failure of one will not precipitate the failure of the other two.

The covering material can further increase the efficiency of the structure. When inflated, ETFE foil cushions pull the tensioning cables together, a force that is resisted by the adjoining cushion, thereby increasing the rigidity. Indeed, ETFE seems the ideal material for the application. Longlived, self-cleaning and with extremely efficient light transmission and insulating properties when filled with air, it is perhaps the preferred envelope, but other tensile fabrics may be used as well. PVC can be draped within the articulated arch, adopting its characteristic form of flowing cones, and it seems likely that the first Xanadome structures will adopt this arrangement. The PVC membrane is suspended on struts that are attached to the underside of the nodes.

A major problem with the erection of large structures is the physical handling of the parts. Large spans suggest gargantuan pieces of metal, lowered into place by equally huge cranes (hired, no doubt, for even larger sums of money). Xanadome does not need a crane or a scaffold for erection. Lifting the articulated arch into place can be performed with a winch. This is remarkable, conjuring up the simultaneous images of flying a kite and erecting a tent.

The actual assembly is performed on the ground. Temporary bracing is needed to stabilise the arch as it is lifted into position and a mast may also be required (again temporary) to support the central connection node for the cables. But once the structure is in place, the pre-tension in the cables does the rest. The only major piece of groundwork required (for the structure at least – one can imagine that drainage from so large a roof might pose its own problems) are the cable anchors, which are subject to pulling loads, and the arch foundations, which have to resist a push.

Because in its demounted form the size of the structure is dictated by its longest component, the length of an individual spar, its highly transportable nature suggested that initial applications for Xanadome would involve disaster relief. Although valid, this misses its possibilities. Angus Brown and Ted Halford are keen to expound the merits of the system for all kinds of enclosures: hangars, warehousing and shopping malls. The most recent enquiries have been for football practice pitches using the PVC membrane as a covering. Even more recently, Rem Koolhaas' competition-winning Los Angeles County Museum of Art (Lacma) features a Xanadome roof.

Aside from the perfect expression of an engineering principle, Brown is convinced that Xanadome could herald a new form of architecture based around the occupation of space free from the rigours of climate. It is possible to imagine communities of Shigeru Ban cardboard houses clustered around temperate public spaces within an irrigated but precipitation-free environment. Imagine the shift in perception this could inspire. It no longer rains in parts of London. Street cafes operate all year round, designers are freed from the need to keep out wind and rain, people are freed from standard modes of habitation, no more leaves on the line or the wrong type of snow.

Truly then we will 'on honey-dew hath fed And drunk the milk of Paradise'.



Wave of the future

An extension to Frankfurt's exhibition hall showcases an innovative folded roof structure

BY SUSAN DAWSON. PHOTOGRAPHS BY WALTRAUD KRASE

When Paxton's Crystal Palace was opened in 1851, not only was it the first exhibition hall ever built, its prefabricated and innovative structure of steel and glass launched a new movement in architecture. The imperatives of an exhibition hall have since been an inspiration to architects. Nicholas Grimshaw & Partners' new exhibition hall in Frankfurt is the latest response to this innovative tradition.

The Frankfurt trade fair centre - known as the Messe - is the third largest in the world. It is on an inner-city site that had already been developed when an opportunity came up in 1998 - an adjacent goods station became available, offering 16ha for expansion. The main halls are grouped around a large urban square, the Agora. To make the most of the potential for expansion, a new hall, four times larger, was proposed to take the place of the existing one on the Agora's south side. A competition was held and was won by Nicholas Grimshaw & Partners.

The brief was for a two-storey columnfree space of 220 x 120m with a gross exhibition area on upper and lower levels of about 40,000m², making it one of the largest halls in Europe. And it had to be built in a hurry; there were only 18 months from the start to completion in June 2001, when it would be needed for the International Motor Show.

Nicholas Grimshaw & Partners has had

long experience of large-span structures. The roofs of the Oxford ice rink (1984) and the Stockbridge leisure centre (1988) are suspended from tall masts; the international rail terminal at Waterloo has a curved steel roof structure covered with frameless overlapping glass panels; and the Eden Project consists of a series of geodesic domes clad with inflated pillows of ETFE fabric.

The key element of the new hall is its roof. It is an arch, but of a magnificent and innovative form: a folded plate structure that soars over the main space in a series of huge doublecurved waves. The waves comprise five tubular gridshells, which form the upper, concave portions of the roof, and six tensile nets of tubular steel, which form the lower convex portions. The waved shape spans 165m along the length rather than the width of the building, presenting an uninterrupted fully glazed gable wall to the Agora. Setting the longitudinal span along the main frontage facing the square means that the building can be extended to the rear by adding additional arches.

The roof is buttressed by 12 huge steel Aframes that rise between five-storey concrete 'box' structures at the short ends of the hall. These structures contain conference and office spaces, catering facilities, secondary service equipment, and rest and information zones on all levels.

The roof is lower than a more conven-



The magnificent folded roof (left) soars over the main space (right) of the Messe. It is buttressed by 12 huge steel A-frames (above) that rise five storeys

tional arched structure, so a smaller volume of air has to be treated. The total available area for acoustic absorption is maximised by the undulating soffit. As the structural tubes are partly covered by the inner skin of the deck, there are no upward-facing surfaces to gather dust. The arches of the roof act as smoke reservoirs. In case of fire, windows in the facade open automatically and smoke escapes through vents in the roof. As the roof is supported at the sides, it is flanked on its long sides by clerestory glazing that allows daylight to penetrate the building.

Plant and service ducts are accommodated in the intermediate floor. The floor is a 4m-high space frame that carries service trenches for ventilation and air conditioning, water, sewage, compressed air, sprinklers, high-voltage power, communications and data networks to both levels. It is deep enough to provide fire-escape tunnels and maintenance passages.

The intermediate floor accommodates a high-level access route, which serves existing halls, creating a loggia that overlooks the Agora. Now in use as part of the ensemble of exhibition buildings in Frankfurt, the hall has already realised its potential.

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CONTRACTOR Hochtief/ Bilfinger Kühn Bauer & Partners **HL-Technik AG** Beratende Ingenieurge Dörflinger gesellschaft für electroplanung



A folded plate roof of tubular steel gridshells

The roof structure, spanning 165m, consists of a single continuous folding grid of tubular steel members, which forms a wave-like sequence. The five upper, concave portions of the roof are tubular gridshells; the six lower convex portions are anticlastic tensile nets.

Both compression arches and tension nets are formed of steel tubes that vary in thickness to accommodate different stresses. They are formed of straight sections of tube welded in facets to achieve the curves.

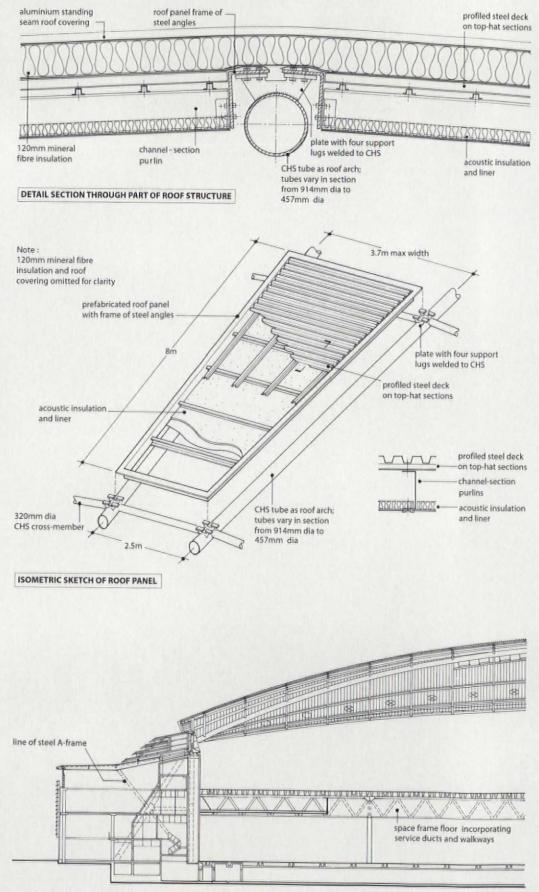
The only curved element is the outer tube that defines the gable to the wall facing the Agora. In the original design, the tension nets had pivoted connections; subsequently, the whole structure was welded to achieve a fast building programme.

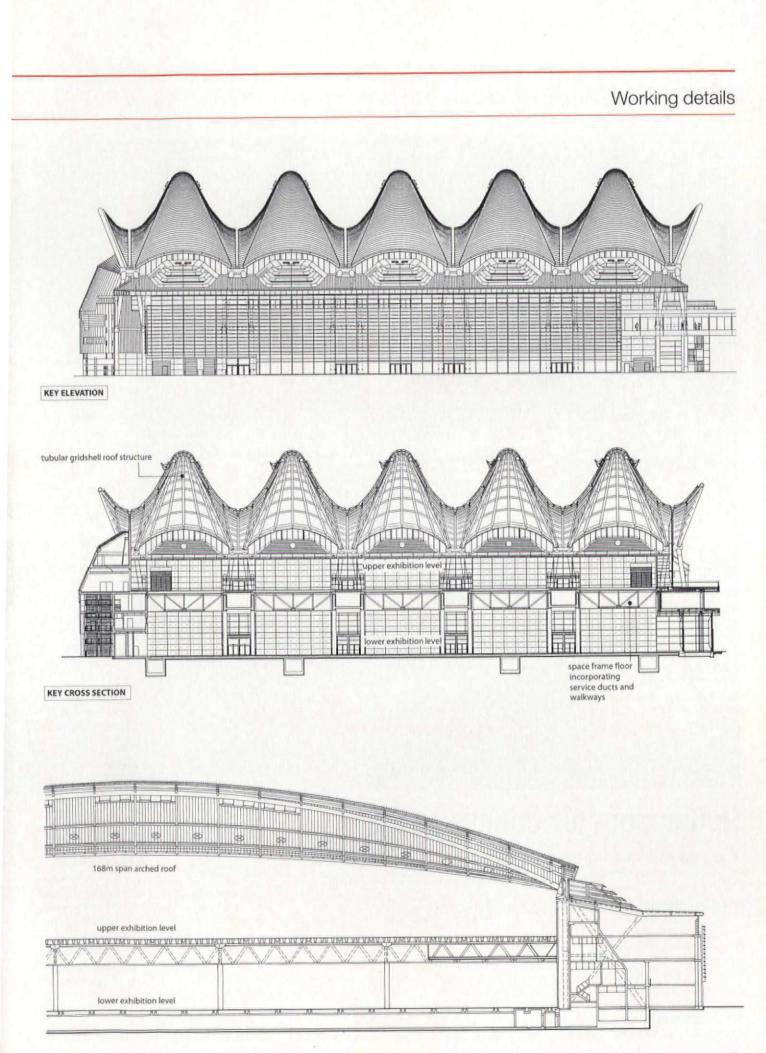
The gridshells and nets were assembled on site; they were divided into four segments, of which 80 per cent were prewelded on jigs on the ground before being lifted up to roof level, where the final 20 per cent of welding was carried out.

The roof deck is formed of prefabricated panels framed with 40x40mm steel angles. They consist of a liner with acoustic insulation and a profiled steel deck fixed to top-hat sections to Zshaped purlins. They are covered with a mineral-fibre insulation and have a Kalzip standing seam roof covering.

To accommodate the curve of the roof, the panels were manufactured on site with an in-built twist. In spite of its size, the repetitive profile of the roof required only 60 different panel types, reducing manufacturing costs.

The ends of the roof are supported by a series of huge Aframes of tubular steel. They lie between cast in-situ concrete 'box' structures, five storeys high, which contain ancillary accommodation; the concrete structures give lateral restraint to the A-frames.







Roller-coaster construction

The International Port Terminal in Yokohama, designed by Foreign Office Architects, is a bold and radical concept

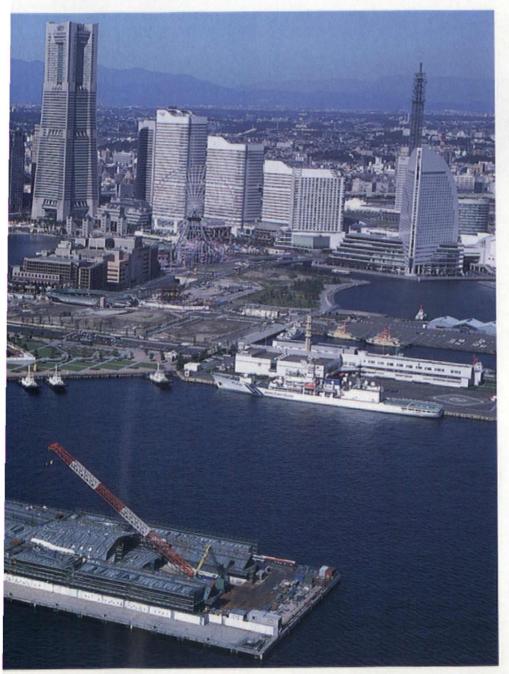
BY SUSAN DAWSON. MAIN PHOTOGRAPHS BY SATORO MISHIMA

When in May 1995 Alejandro Zaera-Polo and Farshid Moussavi, principals of the practice Foreign Office Architects, won a competition to design the International Port Terminal in Yokohama, Japan, it was a startling but exciting decision. That was before other 'unbuildable' architects such as Hadid and Libeskind saw major projects being realised.

The judges had evidently made a bold decision, but some will have questioned whether they made a wise one. Now this innovative project is approaching completion, with the opening planned for November 2002, and its huge scale, a 43,843m² platform, 70m wide and projecting 420m out into Yokohama Bay, is becoming apparent.

The as-built structure differs substantially from the competition entry, but without losing its complexity. This is no surprise to the architects. Moussavi, who has written at length about the importance of *not* having experience, has said that 'the competition proposal was as interesting as it was naive, and needed substantial technical development to become realisable without betraying the original purpose'.

The design ditches pre-conceived notions of what a ferry terminal should look like, concentrating instead on issues such as



the need to accommodate domestic and international services of varying volume and frequency with public and civic events, and the interaction of travellers with the public. As a result, the flow of cruise passengers - from car parking to customs and embarkation - is uniquely integrated with interconnecting public spaces, including a city park - a plaza - on the gently undulating roof. The park will be linked to a sequence of green spaces in the city so that it will merge seamlessly with the urban fabric. People will be able to walk from the mainland onto the terminal and into the parks and public spaces as they wish, enjoying the sense of being surrounded by sea.

The terminal superstructure is mounted on a vast concrete slab platform on piers set on the seabed; it is set back 15m from the long edges to create a boarding deck against which ships will be moored. Passengers will embark at this level via a series of moveable access decks – 'boarding fingers'.

The superstructure is a complex undulating form, changing in level and shape along the concrete platform. Essentially it consists of a pair of steel box girders with arched members spanning between them and with projecting wings cantilevered from the outer sides. The box girders are the spines of the building – functionally, mechanically and structurally. They change in shape con-

The undulating terminal will become a focal point for Yokohama, a transport interchange that transforms the image of a city

tinuously to act as ramps while supporting the two levels of folded plate floor and roof. A car park forms the lowest level; above it are the terminal and public space, with the new plaza on the roof.

FOA approached the design of the new terminal as an 'exploration of the process of construction', of which the development of the steel structure, and particularly the folded plate roof, was a key element.

'The roof structure that we proposed in the competition was made out of a folded piece of steel, an attempt to make it consistent with the general concept of the project as a folded organisation,' wrote Moussavi. 'This proposal was also advantageous in terms of its resistance to earthquake stresses and akin to the techniques of naval industry to which the building was affiliated. The "cardboard" structure emerged out of what was originally a reference to the local tradition of "origami" construction.'

'At the beginning of the design-development phase, the steel structure was clearly the most critical point of the project, as the competition proposal needed substantial technical development to become realisable without betraying the original purpose. The main problem to resolve was that of the three-dimensional complexity of the structure with a geometry which was basically axial - that of folding. We came up with a solution where the folds of the web were being woven with each other every halffold, so that we could achieve the curvature at a larger scale. This is a structural geometry that has been used, for example, by Nervi, Piano and others to make large-span shells with a kind of structural unit or cell that is repeated along the curves. But what was interesting is that the cells of the structure would become differentiated at every point of the surface, like an organic system. One of the immediate implications of this system is that we removed the lower plate of the structure to simplify the construction, turning the folded metal plates into a crucial expressive trait of the project; the origami had finally become visible.'

As the project developed, not only the geometry changed but also the method of defining it. Moussavi explained that the project moved from 'a "raster" space, where each point is determined by local information, to a vectorial space, where each point is determined by differentiated global orders.'

The whole process has resulted, says Moussavi, in 'a big building with very few



details – this is radical? And the design also had major implications for the construction process.

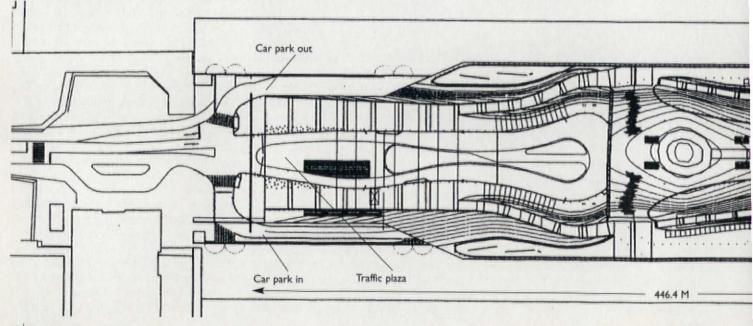
When the contractors asked for the coordinates of the points of the building, Moussavi wrote: 'To their surprise, we had to explain to them that the geometry was strictly related to the manufacturing and construction systems, and could be modified if necessary. One of them pointed out that they would have to employ the same techniques used to build roller-coasters, where the setting out utilises local references between identical templates rolled along an irregular three-dimensional geometry. "Exactly," we said. "Roller-coaster construction."

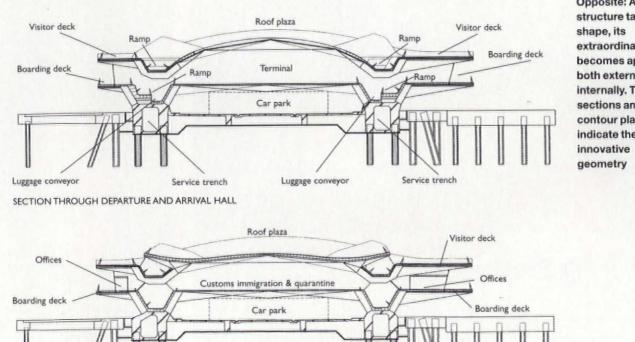
This roller-coaster is now coming to the end of its ride. For users of the terminal, the process of design and construction by which Moussavi sets such store will be virtually irrelevant – except for the fact that it has resulted in an extraordinary building, likely to become an icon in the manner of the Sydney Opera House or Bilbao's Guggenheim.

For most architects there would be an additional satisfaction in pulling off such an achievement so early in their career, but it must seem natural to Moussavi. In the manner of The Who's infamous declaration, 'Hope I die before I get old', she has written: 'It is only experience that teaches us where our limits are and, once we have learned that, we are finished.' So the real challenge for Foreign Office Architects will, presumably, be to not learn from the experience of Yokohama and somehow, naively, manage something as original all over again.

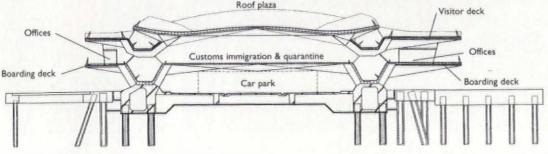
CREDITS

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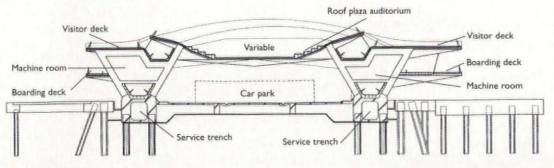




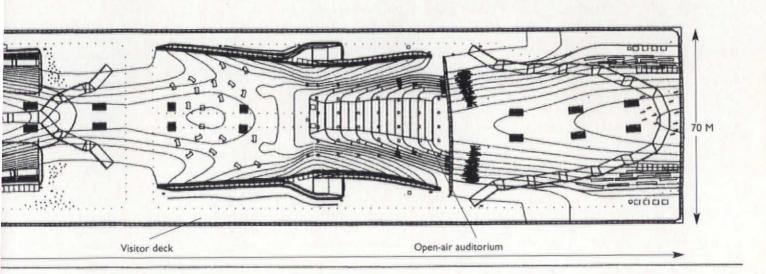
Opposite: As the structure takes extraordinary form becomes apparent both externally and internally. The sections and contour plan indicate the

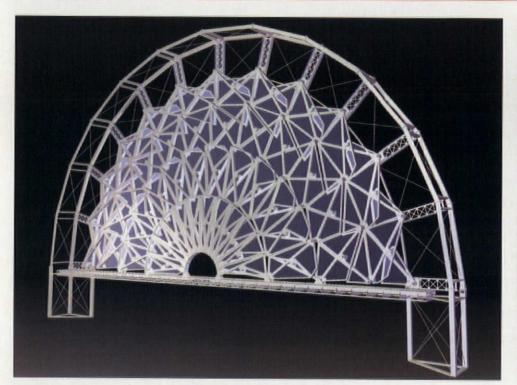


SECTION THROUGH CUSTOMS IMMIGRATION & QUARANTINE



SECTION THROUGH OPEN-AIR AUDITORIUM







Structural hybrid

Chuck Hoberman is the man behind the world's largest unfolding structure, which was used at last month's Winter Olympics

BY RUTH SLAVID. COMPUTER IMAGES HOBERMAN ASSOCIATES. PHOTOGRAPHS BY KAREN LUDLAM

Damien Hirst may have blown a toy up to an enormous size and called it art, but his giant creature did not do anything. How much more satisfying then when inventor Chuck Hoberman saw one of his creations magnified and not only serving a purpose but shown on television screens to millions of people who had never heard of him.

Hoberman's fame so far has been restricted to his award-winning toy globes, the Hoberman Sphere and Mini Sphere. This same technology has now been transformed, with the assistance of engineer Buro Happold, into the world's largest unfolding structure. Still not familiar? Think of the medals plaza at the recent Winter Olympics in Salt Lake City, and Hoberman's was the structure at the centre of it.

This is not his first venture into largescale design. He designed a retractable dome for Expo 2000 in Hanover and has designed several 5.5m expanding and contracting spheres that are in museums around the world. But the Salt Lake City structure, at 11m tall and 22m in diameter, is in another league. Clever invention is admirable but whereas a toy that collapses unexpectedly could be amusing, similar behaviour in a large-scale structure would be unacceptable and dangerous. Between them Hoberman and Happold produced a structure that is reliable and fascinating. Its 96 aluminium panels retract to form a 1.8m-thick semicircular ring that frames the stage. They spiral upwards and outwards in a radial motion, revealing the stage behind.

It should perhaps not be described as a 'structure' at all. Buro Happold concludes that the arch is 'a kind of hybrid between a structure and a mechanism: at once stable and self-supporting yet capable of largescale movement'.

Hoberman described it in the following way: 'The conceptual design of the arch pioneers the overlap between mechanical and structural understanding as it is both a mobile mechanism and load-resisting structure. The final design is successful as it incorporates members as both operable machinery and load-carrying components. The main struts, for example, that provide both the operational geometric symmetry and mechanical impulse, also provide the strength to carry panel loads. In the same way, the tension cables both pull the screen open and support the structural weight.'

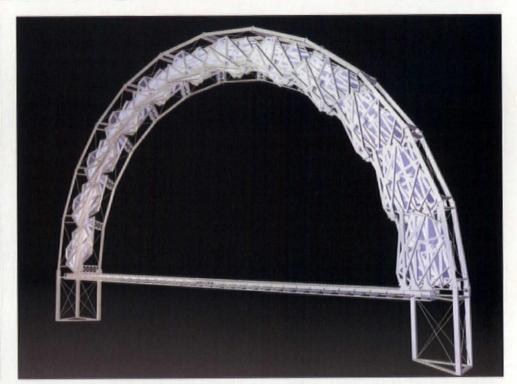
The 96 panels of the arch each measure approximately 2.7m by 1.5m and have three-pinned joints. The primary members comprise aluminium box sections that form the rigid elements of the unfolding mechanism. So that retraction can occur, each beam type is offset in depth to form a layered system, and each successive ring of panels is laid on top of the previous ring. The beams that face out towards the audience are clad to form a skin.

There is secondary framing that provides the outlines of the panels to which the sheathing or skin is applied. These panels vary in size up to 2m by 2m. When the arch is extended (closed), these panels form a 'lamella' structure whose members display a pattern of interlocking spirals.

Anything new can seem obvious in retrospect, once the objectives have been achieved. For Buro Happold, much of the work involved was to get to this stage, and to help make Hoberman's vision achievable, and prove that it was achievable.

The engineer developed a unique support system to cope with the complex geometry, the loading from both wind and structural weight plus the sheer size of the structure. Tension cables attach at the centre of the semi-circle with the primary role of sustaining the self weight of the screen. Cable sheaves transfer the load to an inde-











pendent steel arch structure, which also support the loads generated by the guided slots in the outer screen panel. The lowest panels at the base of the arch run along a sliding track which enables the complete system to retract and also partially supports the vertical and horizontal loads.

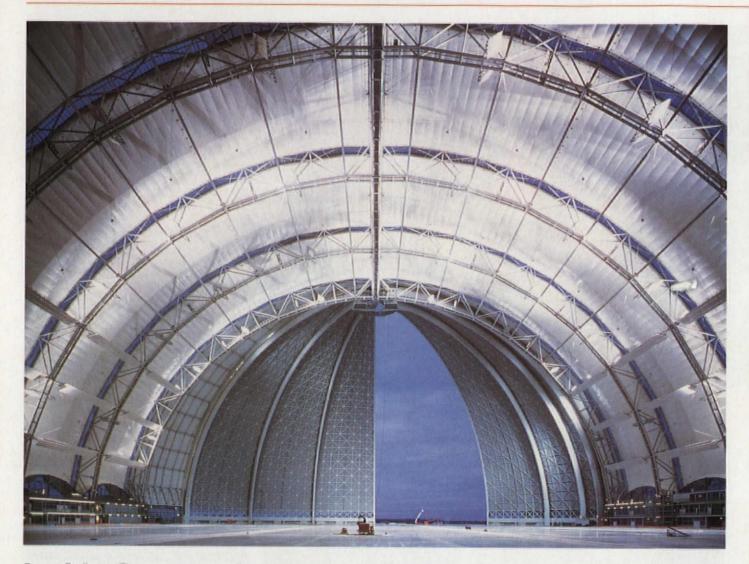
To show that this approach would work, Buro Happold used 3-D modelling techniques to run trial simulations.

With high winds in the opening days of the games, the value of these calculations The computer drawings (top) and the test operation (above) resembled each other in a way that must have been reassuring for all

was proved. Spectators who marvelled at the way these winter sports push the human physique to its limits will also have had some inkling of the fact that the way the awards structure folded and unfolded was not merely a piece of theatre. It also represented a triumph of human ingenuity equivalent to the athletes' achievements.

CREDITS

DESIGN Hoberman Associates: Chuck Hoberman, Matt Davis STRUCTURAL ENGINEER Buro Happold Consulting Engineers: Angus Palmer, Cristobal Correa, Sarrah Khan FABRICATOR Scenic Technologies MECHANICAL CONSULTANT Erich Blohm Engineering STAGE DESIGN Hasbas Entertainment



Inside Germany's space capsule

The world's largest free-standing aircraft hangar has been built near Berlin using five steel arches that span 225m

BY RUTH SLAVID. PHOTOGRAPHS BY PALLADIUM PHOTODESIGN

A few years ago there was a fad in London and other cities for using airships as mobile advertising hoardings. So when a company in Germany announces plans to start building airships, known as CargoLifters, it all seems familiar.

Think again. Those little airships bobbing in our skies bear the same sort of relationship to the planned CargoLifters as a biplane does to a 747. CargoLifters will be immense and, because they need a home to protect them from the weather and a place for their construction and maintenance, their development involves the construction of an immense hangar. turned out to be the largest free-standing hangar in the world. Munich practice SIAT Architektur + Design is the architect for the building in Brand, 50km south of Berlin in Germany. The hangar is designed to house two CL160 CargoLifters side by side. They are each 260m long with a maximum diameter of 65m, designed to carry 160 tonnes of cargo up to 10,000 km at a cruising speed of 56 km/h without the need to refuel.

Requirements for the building design were that it:

- minimised the building volume
- minimised the building surface

• accommodated two CL160s next to each other

 related in shape and choice of material to the airship 'theme'

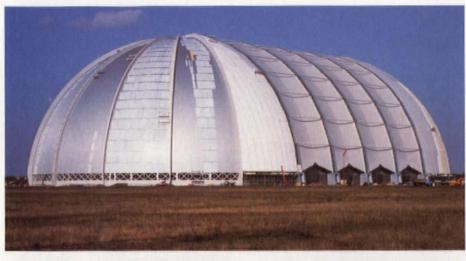
• related to and clearly developed technically in construction terms from past airship hangars

• guaranteed an economic, functionally efficient and aesthetically pleasing building, in which risk factors were minimised within the available timescale.

As the fifth of these points indicates, the building is not without precedent. Germany was the home of the airship, a vital part of its aviation history – indeed Stuttgart still has a Graf Zeppelin hotel. Although several hangars were built between 1898 and 1938, none survives and documentation is scarce. But research has uncovered some technical information and, although the new hangar sits firmly in the line of development, it does also include some definite innovations.

The CL160 is a blimp, not a Zeppelin. This fact is not merely of interest to planespotters, or even airship spotters. Zeppelins were long and thin; blimps are much rounder. This means that, although the new

Arup was appointed engineer for what







hangar is not that much longer than some of its predecessors (the Saarbrücken hangar of 1936, for example, was 275m long), it is much taller and wider.

Arup designed a pavilion for the 1984 Liverpool Garden Festival which some wag dubbed 'the Hedex capsule', and the Cargo-Lifter terminal, albeit on a much larger scale and with a different structural system, could take the same name. Each end is semicircular with a radius of 100m. The central part, 160m long, is semi-circular in section, with a height of 107m. The doors at either end are in eight sections, two fixed and six moving, which open with a clamshell action, within their own footprint. This is innovative and not inexpensive but, by allowing the building to follow so closely the shape of the blimps, it saves on materials for both superstructure and flooring. As well as being visually pleasing, giving a good indication of what is inside, the shape is aerodynamic, reducing the wind loadings.

As Matthew Teague writes on page 2, there is a tendency to describe large build-

ings in terms of other architectural icons. So, St Paul's Cathedral would just pierce the top of the hangar, Sydney Opera House would sit comfortably within one half and the statue of Liberty would nestle within the profile of the doors. But far more impressive than any of these comparisons is the volume of the building, at 5,200,000m³.

The central section of the hangar consists of a fabric structure covering five steel arches at 35m centres, springing off concrete plinths that act as covered entrances. The arches have a clear glass roof between their top chords, allowing in daylight. Research has shown that these arches, which are fully moment stiff, are a new structural form. Earlier hangars were built with hinged arches because they were easier to design and build, but the rigid form uses less steel.

The steel arches have cross bracing between them internally and props on the outside to avoid overall torsional buckling. This makes them stiff enough to resist the horizontal thrust from the sliding doors. The arches have a structural height of 8m

Clockwise from far left: the building dwarfs plant and offices; nearing completion; precast entrances offer snow protection; the segmental doors are of minimal weight

and span 225m, with top chords at 3.4m centres and bottom chords at 2.0m. The 'curved' arches are in fact made up of 17 straight sections. An 8m deep truss, similar in construction to the arch beams, connects the arches at roof level. A PVC-coated membrane forms the covering.

Each end of the hangar forms a quarter segment of a sphere, made up of eight door elements. The shell-shaped elements are fixed to a hinge at the top of the end arch and guided horizontally by rails at the bottom. Each element has two motor drives at both ends at ground level.

It was essential to make the doors as light as possible, not only to save on materials but also to minimise the loadings on the steel arches, the size of the drive motors and the foundation requirements.

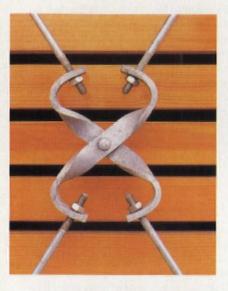
The designers therefore used a shell principle. The inner part of each door segment is a spherical grid of identical horizontal, vertical and diagonal elements that are rigidly jointed. Corrugated metal sheet cladding spans this grid between the upward-curving side beams. The shell is connected eccentrically to the side beams, to the top flange on one side and the bottom flange on the other side. This allows the segments to slide under each other.

It is almost impossible to get a sense of the massive space enclosed within this structure. But look down near ground level and there are some tiny blocks running along the straight sides. These in fact are two-storey offices, almost entirely dwarfed. When the first prototype airship emerges next year, it will astound spectators. Few are likely to reflect that such massive structures need even more massive homes. If they do think about it, they should be even more amazed.

CREDITS

CLIENT CargoLifter PLANNER AND ARCHITECT SIAT Architektur + Technik BUILDING SERVICES Klöffel CLIENT'S REPRESENTATIVE Connert + Wolfram STRUCTURAL DESIGN Arup ROAD AND LANDSCAPE DESIGN Cordes + Partner FIRE ENGINEERING Halfkann & Kirchner WIND TUNNEL TESTS IFI, Institut für Industrieaerodynamik

MetalWorks Round-up



Opening statements

This expressive piece of steel cross-bracing is on the door to the crematorium mortuary in Asker, Norway, designed by Carl Viggio Hølmbakk. It is one of the projects shown in the book Contemporary Doorways - Architectural Entrances, Transitions and Thresholds by Catherine Slessor. An enticing mixture of the familiar and the less well-known, the book includes Future Systems' sanded aluminium tunnel entrance to Comme des

Garçons in New York, the pivoting aluminium door to Ken Shuttleworth's Crescent House in Wiltshire and the rich and deliberate rusted finish to a car park entrance by Studio Granda in Iceland. Contemporary Doorways will be published in May by Mitchell Beazley at £30.



Sitting comfortably

Scaffolding company SGB has worked with grandstand seating company Slick Seating to launch a seating system that offers two frequently irreconcilable attributes – comfort and speed of erection. Based on SGB's Cuplok scaffolding, the system adds galvanised-steel primary beams and polypropylene tip-up seats that, claims SGB, offer 'an unrivalled degree of comfort and legroom'. The system has already been used at Formula 1 Grand Prix meetings, and the developers are in discussions with the organisers of the 2004 Olympics in Athens.



Designed to flatter

Flatness has always been a crucial property of vitreous-enamel cladding panels, but manufacturer Escol Panels believes that its latest development increases flatness and reliability, as well as reducing weight. New bonding techniques involve replacing the backing material to the steel panels, traditionally multi-purpose building board with a galvanised steel balancer, with 12mm-thick aluminium honeycomb, plus a galvanised steel balancer. This allows a flatness that deviates by less than 2mm on the surface of a 3m by 1.5m panel, says Escol. And the weight saving over a conventional panel is 30 per cent.



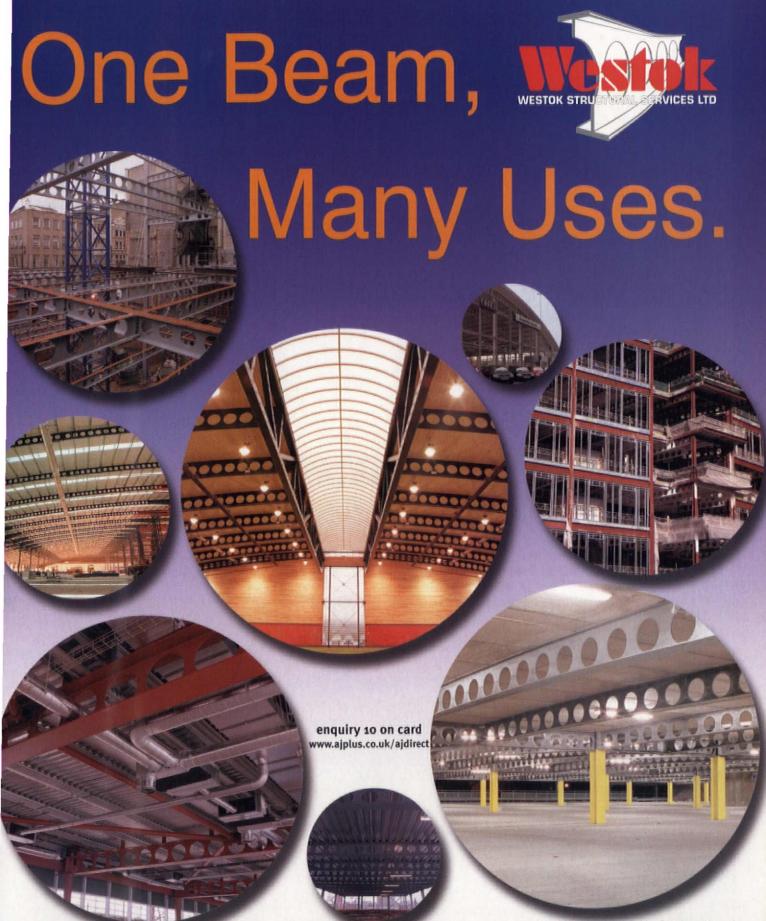
Elegance in the frame

A projecting secondary steel frame adds a geometrical elegance to an office building designed by Hamilton Associates in Uxbridge, London. On the south facade, the frame is also used as a support for brise soleil sunshading. The building is clad with Technal's MC curtain walling in a cool grey and white.

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technical & practice

Construction futures

In the first of a new quarterly series, E C Harris examines the trends in construction industry workloads

BY PAUL MOORE

Notwithstanding the nervousness of the past six months, workloads in the construction industry look to be holding up. Contractors remain busy, although there are some early signs of an easing in private sector commissions.

With the government hinting at increased taxation to pay for improvements in the health service, the commitment to higher capital spending on both health and education looks assured. And, despite the Railtrack debacle, construction workloads are likely to be buoyed by increased investment in infrastructure.

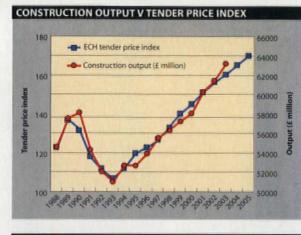
The introduction of the Aggregates Tax on 1 April will effectively add one per cent to building tender prices. Apart from this one-off increase, construction tender prices are forecast to rise over the next two or three years at a rate just ahead of the underlying rate of retail price inflation.

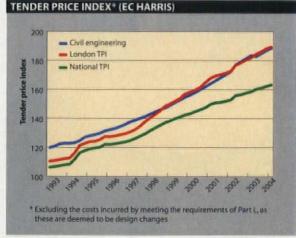
After a slow rise during the first half of 2002, tender prices nationally (including Aggregates Tax) are expected to increase by 3.7 per cent in the year to the first quarter of 2003 and by a further 3 per cent the following year. In London, higher input costs and higher levels of construction activity are forecast to lead to a rise of 5.3 per cent over the next year and a further 4.1 per cent over the following 12 months.

Input costs

Contractors' input costs throughout the UK rose by 4 per cent in the year to December 2001, with labour rates up by 8 per cent and materials costs up by 1.2 per cent. During the past three months, input costs throughout the UK rose, on average, by 0.9 per cent, with labour rates up by 0.8 per cent and materials up by 0.3 per cent.

Labour and material costs throughout the UK reflect both the higher basic costs in some regions and the ebb and flow of workload across the country. Despite the slow-





'London remains the most expensive place to build. Scotland and Wales remain the cheapest regions' down in the South East, which led to overall cost increases in London of just 2.7 per cent during the past year, London remains the most expensive place to build, with costs 12 per cent above the national average. Scotland and Wales remain the cheapest regions, with costs 8.3 per cent and 7.3 per cent respectively below the average.

London remains most susceptible to swings in workload, and while labour rates nationally increased by 8 per cent, in London they struggled to show a 4.5 per cent rise. In contrast, rates for skilled labour in Wales increased by 20 per cent in the past year – 5 per cent during the past quarter – while in the South West, daily rates rose by 15 per cent.

Part L

Changes to Part L of the Building Regulations will inevitably result in increased insulation to walls, floors and roofs; means of mitigating solar heating (including the use of shading); and a greater use of controls to M&E installations, including timing controls and boiler controls.

The costs of complying with the new regulations have been variously calculated at adding 2-5 per cent to the building cost, although some higher figures have been quoted depending on the particulars of each scheme. On the positive side, buildings should be cheaper to run.

Construction activity

The construction industry appears to have survived the turn of the year without going into recession. Orders rose by 2 per cent in 2001, despite a fall of 2 per cent during the fourth quarter.

Total output in 2001 was £60.2 billion, 3.7 per cent higher than in the previous year, and the sixth consecutive year that a positive figure has been recorded. What's more, it exceeded the record breaking output figure of 1990. According to the Joint Forecasting Committee (JFC), by 2003, infrastructure work will be 29 per cent higher than in 2000.

In the short term, the placing of Railtrack into administration - which caused a huge drop off in orders in the fourth guarter of 2001 - is likely to cause continued problems. However, of the £35 billion Railtrack has earmarked for investment, £30 billion is already committed, and provided that contracts are honoured, output will continue to rise in line with previous forecasts. Roads too, will see more cash, partly through PFI/PPP schemes, while the go-ahead for Heathrow Terminal 5 will see a £2.5 billion boost to construction spending over the next five years.

The manufacturing industry in the UK continues to suffer, despite the historically low interest rates, and little respite is likely in the short term. The private commercial sector, which in 2001 provided 17.5 per cent of total construction spending, is forecast to slow during the next couple of years, with retail and entertainment schemes affected by relatively low lev-

EC HARRIS

els of consumer confidence. The continued shake-up in the banking and investment sector, meanwhile, is slowing demand for offices. Output on new private housing fell by 6 per cent during 2001, and a continued fall-off is anticipated.

With the prospects of higher mortgage rates, the Halifax is forecasting a rise in house prices of 5 per cent this year. Repair and maintenance in the housing sector is expected to show at least two years' strong growth. Part of this will come from repairs to housing estates that have recently been transferred from local authority control to the private sector; part comes from house owners taking advantage of current low interest rates.

Tender prices

There are continued worries within the industry about shortages of skilled labour, which can translate into a short supply of specific local skills and a consequent hike in subcontractors' rates. Given the small number of people entering training schemes, this is likely to remain a long-term problem for the industry. The likely consequence is the continuance of pricing 'hot spots', as local demand outstrips the supply of suitable skilled labour.

PFI procurement remains the preferred option for hospital and education construction projects. After a long gestation period, the PFI/PPP programme for hospitals is now falling into place, with some £31 billion committed to 29 hospital schemes.

Macro-economic factors

A recent meeting of the G10 central bankers suggested the global economy had already started to emerge from recession.

The key US growth figure for the fourth quarter of 2001 was revised substantially upwards, from an initial figure of 0.2 per cent, to show a 1.4 per cent rise. Growth of 2-3 per cent is now forecast in the US for the first quarter of 2002.

In Europe, the euro is likely to have had a mild inflationary effect as prices get rounded up, before the ease of comparing prices around Europe sees a return to more normal com-

28 March 2002

petitive pricing. The latest figures from Europe show that Germany's GDP fell by an annual equivalent figure of 1 per cent in the fourth quarter of 2001, its third consecutive quarter of decline. However, other indicators suggest

that the euro economies are starting to perk up. Industrial production in the euro zone rose by 0.8 per cent in December, the first rise since last August, although output was still 4.1 per cent lower than a year ago.

Ironically, UK figures showed a slowdown in the fourth quarter of 2001, although the consensus view is that the UK economy will expand by 1.9 per cent this year and by a further 2.6 per cent during 2003. While the figure for 2002 is below the level needed for economic health, the latest figures published by the Treasury show projected growth for the next three years is running at between 2-2.3 per cent.

Economic pundits are forecasting continued healthy growth in the UK economy, while the established forecasts of construction activity also reflect positive growth figures over the next three years.

Although there is little agreement about the scale and pace of growth, there is broad agreement that the profile of the industry will change in the next two years, as infrastructure and public sector work increases and the private sector rises only slowly, or, in the case of the industrial sector, continues its decline.

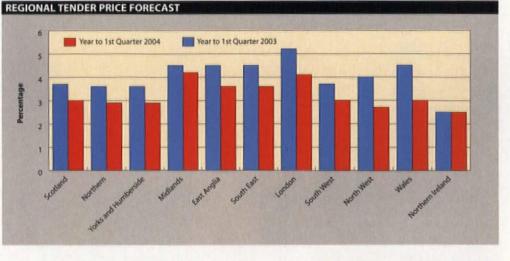
Paul Moore is an associate and head of the Cost Research Department at EC Harris pundits are forecasting continued healthy growth in the UK economy, while the established forecasts of construction activity are also positive'

'Economic

 Output to increase by 2.3 per cent this year and by 2.4 per cent in 2003.

CONSTRUCTION FORECASTS

- New orders for 2001 up by 2 per cent on the previous year, despite a fourth-quarter slowdown.
- Skilled labour rates up by 8 per cent nationally in the 12 months to December 2001.
- Materials prices up by 1.2 per cent over the year.
- Commercial and industrial sectors facing a slowdown.
- Aggregates Tax adds 1 per cent to building tender prices and 1.5 per cent to civil engineering tenders.
- Tender prices to rise nationally by 3.7 per cent in 2002 (including Aggregates Tax), and by 3 per cent over the year to the first quarter of 2004.
- Tender prices in London to rise by 5.3 per cent over the next year (including Aggregates Tax), 4.1 per cent over the following year.
- Civils tender prices to rise by 6.5 per cent over the next year (including Aggregates Tax), with a further 4.2 per cent over the year to the first quarter of 2004.
- Changes to Part L will increase building prices by 2-5 per cent from 1 April 2002, although higher figures have been quoted.
- Underlying rate of retail price inflation expected at 2-2.3 per cent over the next four years.
- Economic growth in the UK to rise by 1.9 per cent in 2002, and by 2.6 per cent in 2003.



Deregulation zealots

COLIN PORTEOUS

Sustaining Architecture in the Anti-Machine Age

Edited by Ian Abley & James Heartfield. Wiley-Academy, 2001. 240pp. £19.99



Prefacing 'architecture' by 'sustaining' rather than 'sustainable' sets a saucily polemical tone, further spiced by the qualifying phrase 'in the anti-machine age'. Ian Abley and James Heartfield have an agenda for the growth of a high level of efficiently industrialised buildings, accelerated by deregulation, and running on hydrogen fuel cells. This would doubtless sustain architects. Whether it would help to sustain a high quality of architecture is contentious.

To address the issues, there are contributions from more than 20 other authors (not counting case studies from practice). At 240 pages of small print, albeit well illustrated, this is a densely packed volume. To dip in, or skim-read, would be to dilute the diversity of takes on socio-economic aspects of sustainability. Nevertheless, the claimed 'full range of sometimes opposing views' is misleading.

Predictably, there is a bias towards the Abley/Heartfield thesis, partly counterbalanced by a number of neutral and objective appraisals. To have obtained a stronger dialectic, one would anticipate green protagonists such as Peter Smith and/or advocates of brownfield urban regeneration, such as Richard Rogers. The book also appears very UK-centred. Although Buckminster Fuller is deservedly mentioned, contemporary US issues discussed, Ken Yeang cited and Foster's Tokyo tower project illustrated, relevant activity in continental Europe is absent. Could this be because steady advances have been made there in terms of industrialised and sustainable architecture without having resorted to deregulation?

Carping on about new Part L regulations is irritating, when nearby countries have long dealt with stringent thermal standards without stultifying architectural verve. Moreover, the anti-interventionist propaganda sometimes seems illogically choleric. A flawed planning process is not in contention, but repeal of the 1947 Act is another matter.

Problems are presented to the occlusion of opportunities. Challenging the need for energy-efficiency measures with reference simply to global warming predictions ignores their 'added-value' implications. Contributors avoid recognising that the physical syntax of green design tends to be risk-free, is not in opposition to prefabrication and is easily measurable. For instance, breathing construction avoids interstitial condensation, uses prefabrication-friendly insulation, and evaluating its performance is straightforward.

Refreshingly, complaints are moderated by some 'tongue-in-cheek' contributions, for example, Martin Pawley's concept for literal 'broad acre' plots invites a smile. Could jobs, income, inclination and opportunity really coincide for such a pastoral idyll as his, even if technology can posit practical answers to the distended servicing infrastructure? There are also ironies, given the tilt of the book, such as Phil Macnachten's

The New Eco-Architecture: alternatives from the Modern Movement

Colin Porteous. Spon Press, 2002. 212pp. £27.50

Lots has been written about Le Corbusier and Frank Lloyd Wright but, argues the author, 'it is surprising how little acknowledgement there is of their strong "green" relevance'. So, asks Austin Williams, what should we deduce from this?

Porteous, in this incredibly well-researched book, which oozes with architectural technical proficiency and relentless empirical data, sets out to show that environmental considerations governed much of the thinking of the various masters of the Modern Movement. It is difficult to assess clearly, though, whether he is saying that these early designers were the forerunners of today's eco-conscious design, or that he is simply saying that there are 'eco' aspects to Modernist architecture which have been overlooked. Both, I think.

In the first part of the book, he examines the heroic period of the Modern Movement (starting his thesis in 1927), to explore the 'tenacity' of environmental detailing. Passive solar design, he points out, had its origins in Mies' Tugendhat Haus of 1930 rather than in the Trombe walls of the '60s.

OK, that's reasonably interesting and straightforward; that the radicalising period of the 1920s gave rise to experimental architecture, leading to a new appreciation of environmental factors such as thermal mass, solar gain and ventilation. But the key point for Porteous is the direct connections with today, which he explores in the final part of the book. While 'the semantics' may only date back a decade or so,'he says,'the issues were an intrinsic part of the birth pangs of modern architecture'. Or, put another way,'the words of Chris Smith in 1997 echo those of Le Corbusier in the 1920s'. This is where I have to take issue.

Although he refers to a dialectical relationship between 'continuity and intermittence', he is blind to the differences of historically specific conditions. While he relies on a lot of empirical research and primary source material, he doesn't provide equivalent rigorous contextualisation. The thesis becomes the starting point to be proved rather than investigation leading to result, grass roots evidence that people see through 'spun' information. Such is the leavening in the dough of a complex mix.

For all the reservations the eco-community will have, the book is timely, providing considerable, considered polemic, insight and information, all well referenced. Paul Hyett sets out the RIBA stance unambiguously in the first chapter. Towards the middle, James Heartfield, tackling appropriate technology in a global context, stops short of saying that the crux for developing countries is the question of who owns it, rather than a question of technology per se. Further on, the Whitby Bird team backs up the expectation of several authors with regard to the hydrogen fuel cell by giving practical information on this renewableinclusive technology.

Two sci-fi proposals by Jonathan Schwinge are invigorating, particularly the 'Lost Exchange' proposal in Liverpool to redress the 1980s devastation of English ship-building. Then, near the end, Peter Walker succinctly delves into the changing position of the architect between the demand and supply sides, advocating a move back towards the former.

Unfortunately, not much of the text binds the politics in with a discussion of aesthetics, and so the book misses the aesthetic threat from the shallow architectural eco-cliché, which is already becoming a ubiquitous masking device for not very clever buildings. Experience seems to suggest that deregulation is liable to make this situation worse in an effort to divert attention from lower standards.

Colin Porteous is senior lecturer in architectural science at the Mackintosh School of Architecture and author of The New Eco-Architecture

Too heavy, man

MATTHEW WELLS

Santiago Calatrava's Creative Process Alexander Tzonis. Birkhauser, 2000. 500pp. £84

'How-it's-done' books hold a special appeal for practising designers. This latest two-volume boxed set purports to illuminate Calatrava's creative process. Very short introductory essays support a reprint of the master's doctoral thesis in the first part and a collection of three 'sketchbooks' in the second. Appendices contain photographs of models and completed work.

The introduction sets the scene by applying various conceptual models to the proceeding pages in an attempt to explain a development process between the doctoral thesis and his later sketch work. Nietzsche's appropriation of the classical dichotomy 'Appollonian' (analytic) versus 'Dionysian' (allegorical) is called up. Freud's notion of 'dreamwork' is coupled to surrealism. All good philosophical namedropping, but I couldn't link these theses into the body of the presentation.

The application of such deep ideas to the finished work seems heavy-handed. I understood the book as a good methodical study of hinged frameworks and their syntax and then as a rather repetitive set of reflections on how elementary linkages can be varied and informed by simple organic analogies. The way the best work came into being – Ernsting's warehouse and the Stadelhofen station – is well traced and readily understandable. There is a patient exploration of each solution, set alongside free sketching of classical balanced and organic forms.

I was some way through the second volume before I realised that these are not the actual studies made to generate the designs, fraught with false starts, preliminary calculations and jottings, but rather they are retrospective musings on already completed work. To call these'the third pillar of his work' therefore seems forced. The drawings just aren't good enough to stand in their own right.

The attempt to present them in this way prevents their interpretation and understanding as a real metasystem to the actual work. In the introduction, Leonardo da Vinci's sketchbooks and the turbulent flow studies he made of the River Po are actually mimicked in Calatrava's sketches. Da Vinci's type of juxtaposition of different ideas and even his misunderstandings are entirely absent in these books.

My favourite book on engineering is a small monograph by David Billington on the work of Robert Maillart, analysing wherefrom his originality sprang; his influences; the textbooks he followed; his surroundings; his life trajectory; and his experimental approach. It is more than 20 years old but still in print.

Conversely, this book is inordinately weighty and glossy; the words are in big print and doublespaced, making it an utterly unwieldy read.

For anyone interested in the interface between architecture and engineering there is useful documentation here which will find its place on the shelf. However, it would have been so much better had these volumes been simple facsimiles of the originals; handy working documents, unobscured by lightweight critique. Don't expect to find a model for critical thinking here; this is not a sourcebook of ideas. *Matthew Wells is a director of Techniker and author of* 30 Bridges (*Laurence King*, 2002)



and often he avoids conflictual facts.

The 'semantics' of environmentalism, as he puts it, is what sets today's concerns apart from other periods in history. Indeed, Porteous' interest in writing this book is a product of today's conditions. Conversely, the naturalist and social hygiene movements which were legitimate intellectual generators for some in the 1920s (well explored in Ken Worpole's *Here Comes the Sun*), would be too explicitly eugenic for today's ecoadvocates. Or are they?

Peter Davey writes in the foreword that 'there is enough evidence to show all but the most boneheaded that radical changes are taking place in the climate of the planet, which will alter it from the one in which humanity evolved to a state that it will almost certainly be inimical to our species'. Well, boneheaded or not, eulogising the era of human evolution is too Social Darwinist for my liking.

To suggest that today's world is an improvement on previous generations may be a curiously unpopular thing to say, but the main way in which things are worse is in the relentless pessimism of our age. Porteous' claim that'it has been the 20th century that has exponentially abused the biosphere to the endangerment of natural eco-systems' compounds the rhetorical fiction.

Porteous says that 'the basic proposition of this book is to fill a gap with the benefit of hindsight' but also that he aims 'not to post-rationalise'.

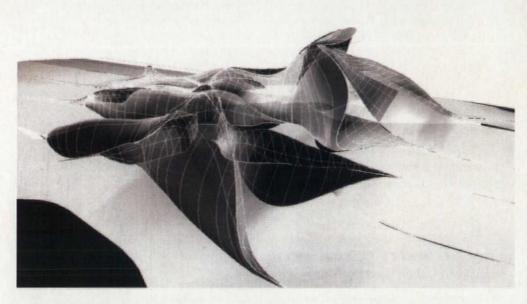
A valiant effort, but unfortunately, I fear, he fails in his second objective.

computing

Asking questions of capitalism

Should the digital realm be used for subversion rather than to prop up existing social structures?

BY NEIL SPILLER



Designing for a Digital World is a book which charts the proceedings of the 'E-Futures: Designing for a Digital World' conference that took place at the RIBA on 4 June 2001.

The book and the conference rounded up the usual suspects: digital practitioners such as Hani Rashid, principal of New York's Asymptote; Mark Goulthorpe, the force behind dECOi; Patrik Schumacher from Zaha Hadid's office and the AA Drawings Research Lab; digital architectural theorists such as Sarah Chaplin, MIT's William Mitchell and Sci-Arc's Karl Chu; and non-architect cyberphilosophers and authors including Sadie Plant, Douglas Rushkoff and Sherry Turkle, among many others.

So, a good line up for a conference in matters digital. As usual, the nonarchitects say more interesting stuff than the architects, but that is almost always the case when our profession meets the outside world, and is a phenomenon not confined to digitally active members. In general, the architects are interested in 'show and tell' and familiar battle-scarred war-horses are brought to the fray – DECOi's pistonic wall, sorry Aegis Hyposurface, nonetheless quite beautiful, Foreign Lars Spuybroek's overwrought installation for an exhibition at Nantes is at least fun Office's Yokohama Port Terminal that seems to get heavier in every new incarnation, and Hani Rashid's Guggenheim Virtual Museum.

I do not wish to be impolite, but there must be more going on than this and I know for a fact there is. So why are a lot of the pictures and arguments so familiar? Is the clue that the conference was at the RIBA, and it did not want to frighten the horses?

It was with trepidation that I flipped through this book for the first time. Obviously there would be acres of the sleek sharkskin aesthetic, an aesthetic devoid of joints, materiality and within which anti-gravity operates.

Most of these guys design buildings. Let us not be under an illusion, they are still recognisable as good old Modernist project architects – but that did not worry me. What worries me is that a technology, with the real potential to mitigate the sort of social damage that capitalism can create, has been undermined and woven into an art.

Sadie Plant's presentation, thankfully, touched on this in relation to the mobile phone. 'But it is not just the psychogeography of the city – and perhaps its architecture – which is changed by the introduction of such mobile connectivity: the images, maps, perceptions and, indeed, the geopolitical architecture of the whole world which are changed as well... It is crucial to oppose the corporate formations which are seeking control of social, economic and technological life, but quite another [thing] to confuse them with the kind of grassroots globalisations which are among the more energising and positive effects and concomitants of digital culture.'

The digital realm can be used to subvert the still nascent relationships between corporation, client, architect and consumer. Many of the architects here presented work that failed to question the capitalist imperative in this still new medium. They want us to applaud their imagination in creating environments that are tailored to corporate expediency and the placeless connectibility of the worker.

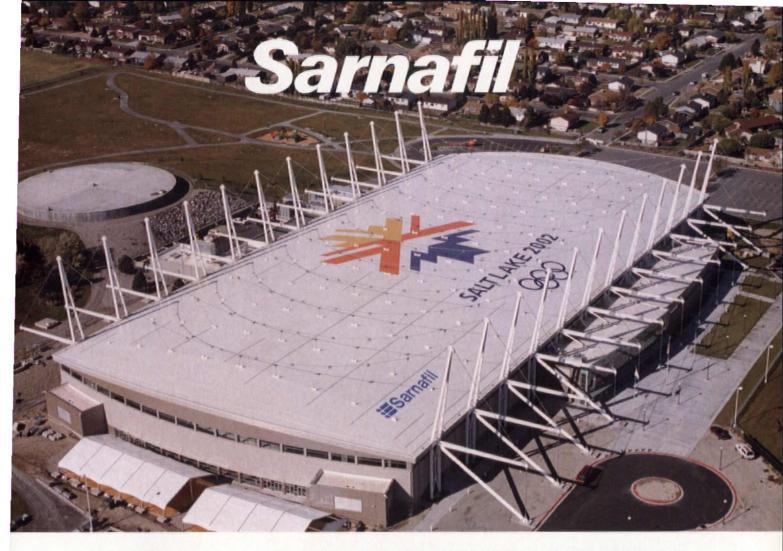
Paradoxically, I believe 'place' has become highly important in natural ecology and issues of sustainability if architecture is truly to become benevolent to users. So much work here is about placelessness.

One fun but crazy project featured is Lars Spuybroek's ridiculously overwrought Kiesleresque installation for the Nantes 'Vision Machine' exhibition which featured works by Pollock, Ernst, Tanguy, Archigram, Schein and many others, hung at funny angles on a wild climbing frame of timber and fabric. In a book of remarkable but blinkered cohesion, it is good to see someone attempting – albeit at a small scale – to turn a little of the world on its head.

We as architects have a huge opportunity laid out before us. We can grab it and forge new ways for the world to be – socially, politically, ecologically, inclusively, using digital technology. Or we can continue to be capitalist lapdogs and wait for our master to tire of us and send us back to our smelly kennel.

• Designing for a Digital World is edited by Neil Leach and published by Wiley-Academy at £24.95

Neil Spiller is Reader in Architecture and Digital Theory at the Bartlett, University College London. He is editor of Cyber_Reader: Critical writings of the Digital Era published by Phaidon, March 2002



SARNAFIL - AT THE 2002 WINTER OLYMPICS

The Utah Olympic Oval in Salt Lake is the state of the art facility hosting the 2002 Olympic Speed Skating events. This cable-suspended structure is 1200 tonnes lighter than a traditional truss solution and uses nearly five acres of white solar-reflective Sarnafil PVC membrane.

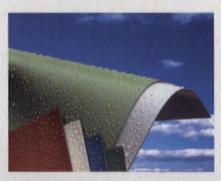
The unique design allows the roof to be positioned about 20ft lower than a conventional roof thus reducing the building's volume, increasing energy efficiency and allowing better control of temperature and moisture within the stadium.

The Olympic Oval is one of only 19 buildings worldwide that has been designated as LEED rated by the U.S. Green Building Council. The LEED rating system evaluates environmental performance from a 'whole building' perspective over the entire life cycle of the building.

The Olympic symbols and Sarnafil logo have been produced in coloured Sarnafil membrane heat welded onto the continuous white Sarnafil roof surface.

Technologically advanced and environmentally friendly - the Utah Olympic Oval is just one more example of how Sarnafil continue to assist architects in creating landmark buildings with minimal impact on the environment and reduced Whole Life Costs.

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legal matters

Be aware of contract exclusions when it comes to adjudication

Adjudication has proved a quick fix in many disputes but there are various circumstances in which it is not available. The Housing Grants, Construction and Regeneration Act 1996 (HGCR) excludes several types of contract, and more are excluded by the accompanying exclusion order. These exclusions have proved fertile ground for those challenging an adjudicator's jurisdiction, with the defending party at enforcement stage arguing that the contract was not within the Act in the first place.

One group exempt from the rigours of adjudication is residential occupiers, who are excluded by section 106. The policy of this exemption is plain – adjudication was intended to assist the cash flow of hard-pressed construction companies. That

may be all very well when the employer is a company. But the potential of an adjudicator's decision to disrupt the cash flow of an ordinary household may easily be imagined.

A construction contract with a residential occupier is defined as a contract 'which principally relates to operations on a dwelling which one of the parties to the contract occupies, or intends to occupy, as their residence.' The exemption does not extend to a block of flats, but does include a single flat, reflecting the principle of protecting a householder

having works done to their own abode.

It is surprising that some forms of contract regularly used for domestic contracts which incorporate the usual adjudication provisions, fail to point out to the unwary householder that they are not obliged to sign up to them. One offender is JCT Minor Works 1998.

The Act also applies to consultants' appointments. Residential occupiers are protected from adjudication provisions at the employer/consultant interface. RIBA's suite of 1999 terms of appointment include adjudication provisions, but the Small Works form notes that adjudication need not apply to householders. However, it is necessary to strike it out of the contract if the parties do not want to sign up to it.

If a residential occupier enters into a contract

containing adjudication provisions, they lose the exemption of the Act. The adjudication terms in the contract become binding. They are no different from any other contract term. As most standard forms include adjudication provisions that comply with the Act, the unfortunate householder will get contractual adjudication that is the same as statutory adjudication.

The occupier who enters into a contract on terms proposed by the contractor, and thereby signs up to adjudication, may be able to argue that it does not apply because it is unfair under the Unfair Terms in the Consumer Contract Regulations 1994. The same arguably applies to the householder who signs up to adjudication in their architect's terms of appointment. But the residen-

> tial occupier who, with the benefit of professional advice, signs up to a building contract with adjudication provisions is unlikely to be able to use that escape route.

> Consequently, they may be aggrieved by a failure on the consultant's part to point out that the adjudication provisions could have been cut. There is a risk that architects who recommend a contract that contains adjudication provisions, but fails to point out that those provisions could be excluded, may find themselves on the wrong end of a negligence claim.

The same principle applies to other contracts excluded by the Act. It is possible to opt into contractual adjudication where statutory adjudication would not apply. Check the Act and the exclusion order for the excluded categories, which range from development agreements (where a contract includes provisions for the sale or lease of land on which the building works are to take place), to the installation and repair of artistic works such as sculptures and murals. The statutory exemptions are benefits for the employer, protecting them from speedy adjudicated claims. To sign such a benefit away by recommending a contract containing adjudication provisions without advising that those provisions could be excluded, would be unwise.

Sue Lindsey

⊕_.column

Small practice pleasures and Schadenfreude

lan Martin's small practice site has settled down to an excellent existence at www.spa.uk.net. Its regular sections are: a report (last month based on Martin's meeting with Borders Architects): somebody's favourite web sites (such as, say, the critic Darcy Farquear - I know at least four people who know he's based on them); a Spot the Fake section; a marketing workshop and a fun section (recently a tennis game involving Big Ben, an octastyle temple on its side and the head of Queen Victoria - fixed, incidentally). In the marketing section, Martin advises small practices not to hire a PR company but to write their own press releases: 'Don't spend ages polishing the prose. It won't be published... journalists will tear though the copy looking for the key bits.' Yep, it's true. Martin's site is a knowledgeable mix of serious and surreal, righteous and risible. His other popular, scatological and knife-sharp site is at www.martian.fm.

I don't want to crow. Well, having been brought up in computing by a bunch of condescending hierophants of the Apple rite, of course I do. The Register has recently reported that in SPEC CPU2000 tests by the German tech bible C't, the latest dual G4 Macs have produced dismal results - being beaten in floating point operations by an 18-month-old Pentium III chip. Even with integer tests the dual Mac only just held its own against the above single (discontinued) PC chip. Goodness only knows how the comparison went with current multi-gigahertz Intel and AMD CPUs. The Register says: 'The more thoughtful majority of Mac users have real-world concerns about performance and have been expressing them to Apple, and to us, since the launch of [MacOS] X.' Read the Register report at www.theregister.co.uk/content/3/ 24358.html. I know what you Appleright-or-wrongers are saying. Somebody fixed the tests/they don't apply to CAD/ if they're true I'll kill myself, so they can't be. sutherlandlyall@btinternet.com

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to point out that contractual adjudication provisions could be excluded, may find themselves on the wrong end of a negligence claim'

Architects who fail

Hanson

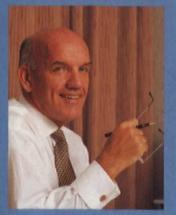
Hanson Brick

A supplement to the architects' journal

Pre-fabrication • Going Dutch • Sustainability in theory and on site

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An air of inspiration and innovation surrounds this issue, our third supplement in *The Architects' Journal*, in which we illustrate our response to your requirements for change within our industry.

In the article on

building solutions, we have taken a close look at the most significant product development we have encountered in a very long time. With the need to 'stand up and be counted', Hanson Brick is now successful in the prefabricated walling business. It allows us to compete with alternative facade materials while protecting our interests in the most natural of construction materials.

Prefabrication is, arguably, more expensive, but there are projects and circumstances in which this form of construction will provide definite benefits.

In the Maccreanor Lavington housing project in Holland, our technical experts illustrate the successful use of glued mortar. Here in the UK we are currently involved in the first project of its kind to use glued mortar and look forward to featuring this in a later edition.

Sustainability is an issue that concerns us all. It is important that we consider the lifecycle behaviour of our products and how new construction methods using traditional products can save on other materials. Similarly we look at how we can help to reduce the vast quantities of raw material we utilise daily, as well as ways in which we can successfully recycle our own products.

Finding solutions to many modern construction issues is equally important. By using our products in different ways, we can help to solve many design problems, and our technical teams continue to research and test to provide the answers you need.

David Szymanski managing director, Hanson Brick E-mail: info@hansonbrick.com

Building solutions

Hanson TiS' Wonderwall system is at the forefront of innovation. Its complete design service means it can be an integral player from day one, without turning its back on traditional values

It is difficult to imagine how any industry can avoid the need for change for quite as long as the brick-making industry has done. For many years, brick manufacturers have argued that it is a very old, traditional business that has had little need of change, production techniques aside, for the last 10,000 years.

For centuries, brick has been the preferred facade material in this country and in many others. It is reassuring for Hanson Brick to know that the product manufactured at 14 locations around the UK, and at further factories in the US and Canada, is actually a well-loved material. This is, of course, no excuse for complacency, and some critics might question why change and innovation among brickmakers is so long overdue.

'For decades we have been interested in selling our wares to merchants and builders,' says David Szymanski, managing director of Hanson Brick. 'Today we look towards finding solutions for the construction industry and creating innovative systems and methods while retaining the use of our own products.'

Hanson Brick is particularly aware that brick is not always the automatic choice of the architect. It is common for today's specifier to consider brick in competition with other materials such as polymers, glass, timber and steel, and it is true that brick has lost ground to these and other materials. Build time and associated on-site costs also contribute to the selection process, as do skills resources, which remain under pressure.

Addressing these issues is not achieved by product development alone. Hanson



Top three rows: installation sequence for Wonderwall; above left: Wonderwall insulated panels; above right: the Hanson TiS factory where Wonderwall is made

Brick already makes around one billion bricks in the UK, which come in an enormous variety of colours, textures, shapes and sizes. Making another in a different colour is not product development but simply a variation on a theme.

'The development of new ideas and concepts is paramount for the continued success of brick,' says Szymanski. 'We are improving our basic products all the time to provide even greater choice, but we have gone further than that by investing in completely new ways of doing old things.'

At the forefront of innovation is the formation of Hanson TiS. The company manufactures specialist cladding systems for both volumetric and modular buildings, satisfying demand for a building system which incorporates the bricks everyone loves while addressing objections by reducing on-site labour and build time, overcoming skills deficiencies and achieving both integrity and sustainability.

With the Hanson TiS system, the weather need never again be the cause of expensive delays, and the reduction in the number of trades on site at any single time is an added bonus.

At the heart of the Hanson TiS Wonderwall system is the factory-made backer board. This board consists of a layer of Styrofoam extruded polystyrene thermal insulation laminated to a brick-slip carrier sheet. The ribs of the carrier sheet have been designed to facilitate run-off of any rainwater that may penetrate the outer brick slip. And installation of Wonderwall could not be easier.

Setting reference points

The first panel is used to set a reference point for the area to be clad. Reference points are marked on the building to establish datum points for work to commence.

Fixing the boards

Once the datum points have been checked, the boards can be secured to the substrate with the relevant fixings. Horizontal joints are made watertight by overlapping the carrier sheet from the board above. The

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tongues and grooves on the long sides interlock to give vertical joint protection.

Applying brick slips

Once installed, a line of Wonderwall brickslip adhesive is applied without obstructing the drainage channels. Brick slips are pushed firmly into place and adjusted to give the required horizontal spacing.

Mortar joints

Wonderwall mortar is mixed and applied using either a pointing gun or mortar bag. Once the correct consistency is achieved, the mortar is tooled to create the mortar joint required.

Wonderwall benefits

Using Wonderwall has many benefits. It is a versatile alternative to traditional construc-

tion methods, which at the same time retains the aesthetics of traditional brickwork. It can be installed up to three times faster than traditional brickwork and requires only semi-skilled labour. Wonderwall offers excellent thermal performance and provides a weather-resistant finish.

Latest developments in the manufacture of these units will provide an inherent structural capacity so that the panels will complement, or even replace, other structures such as timber framing.

Hanson TiS is making complete modular buildings off-site at large premises in Old Trafford, Manchester. Modules are assembled before being broken down and shipped to site.

So far, the system has been used primarily in industrial and commercial applications. Pilot projects for fast-food giant Burger King ensured that the first Whopper was served exactly 24 hours after construction started on site. Hanson TiS' complete design service is also extending the feasibility of the system to social housing and to some smaller projects ranging from free-standing walls to garden rooms.

'In short, we're all about providing solutions,' says John Thompson, managing director of Hanson TiS. 'In this day and age, we have to provide, or contribute to, complete building solutions and become an integral part of those solutions from day one of a project.

'The Wonderwall system means that Hanson has shifted emphasis away from being solely a product manufacturer to being a solution provider – without turning its back on traditional values.'

Persimmon house, Milton Keynes

The first detached house in the UK to incorporate the Hanson TiS Wonderwall I panels within an innovative structure was erected at Emerson Valley, Milton Keynes, in autumn 2000.

Under the directive of John White, group chief executive of Persimmon Homes, the UK's largest housebuilder, a detached house was constructed using H+H Celcon's aerated blockwork in a solid 215mm single-leaf wall. The wall structure demonstrates an innovative construction technique that employs the use of solid masonry with a U-value of 0.27W/m²K. This is better than the required 0.35W/m²K.

A particular benefit from the Wonderwall cladding panels lies in the simple construction procedure and the ease with which operatives can learn the techniques of fixing brick slips and pointing the mortar joints with a premix mortar that ensures perfect colour consistency. Another benefit of the system is the ease with which slip thicknesses may be varied in order to provide brickwork relief details such as string courses, corbels and other traditional masonry features.

One of the lessons learned from the project was the need to establish some clear basic construction details which leave both the designers and builders in no doubt as to the location of DPCs, lintels and foundation construction. Another benefit was highlighted when, under the supervision of an experienced TiS member of staff, both the composite panels and the brick slips were constructed by a number of operatives who until then had received the minimum amount of training. This has shown that the system can be adapted quickly to the needs of most builders and allows a very short learning curve.

Built by Persimmon Homes, this is the first detached house in the UK to incorporate the Hanson TIS Wonderwall panels



Steel-framed modular buildings

One of the most beneficial methods of building construction in current use in terms of speed of construction and consistent quality is the prefabricated modular unit.

Although factory-made units have been in existence since the 1970s, there has been a tremendous revival in interest due to the findings of the Egan report, *Rethinking Construction*, and the subsequent drive for overall improved quality and standards of design and construction.

While modular units are well suited for the market of domestic accommodation, the method is usually restricted to a maximum of five storeys, above which there is a need to strengthen the superstructure. Modular units may provide a good solution for penthouse details.

Hanson TiS is developing penthouse units that will be manufactured completely under factory conditions and then delivered in sections to the proposed site. Although these are widely standardised, they may be modified individually to suit specific situations.

Additionally, there is a tremendous variety of wall/roof finishes which may be incorporated including masonry (brick and block), render, glass and specialist profiled metal cladding.

Overall costs for prefabrication are such that the very high speed of construction will outweigh the costs of the manufacturing process.

Standardised modular systems may, by their repetitious format, appear monotonous and to this end the method lends



Double storey, steel-framed project under construction at Hanson TiS

itself to particular building types.

However, in the right circumstances this characteristic should be of distinct benefit.

An advanced development of modular systems would be to provide a standardised package of unit construction with an easy ability to modify the structures to give individuality for the finishes and details of both materials.

Although modular construction has been around for a number of years, it is felt that current levels of advancement have still not reached their full potential and the opportunities are many.

Safeway store, Taunton

Following a fire that destroyed a large area of the Safeway supermarket in Taunton, Kajima Construction Europe (UK) was appointed to manage its major rebuild. The construction schedule was critical to minimise the time in which the store was not functioning. In addition to the refurbishment, a new cafe, Café Fresco, was added.

The original store comprised a structural steelwork superstructure with brick-and-block cavity walls. The outer leaf, although primarily of brickwork, also had considerable detailing in both claybrick specials and reconstituted stone.

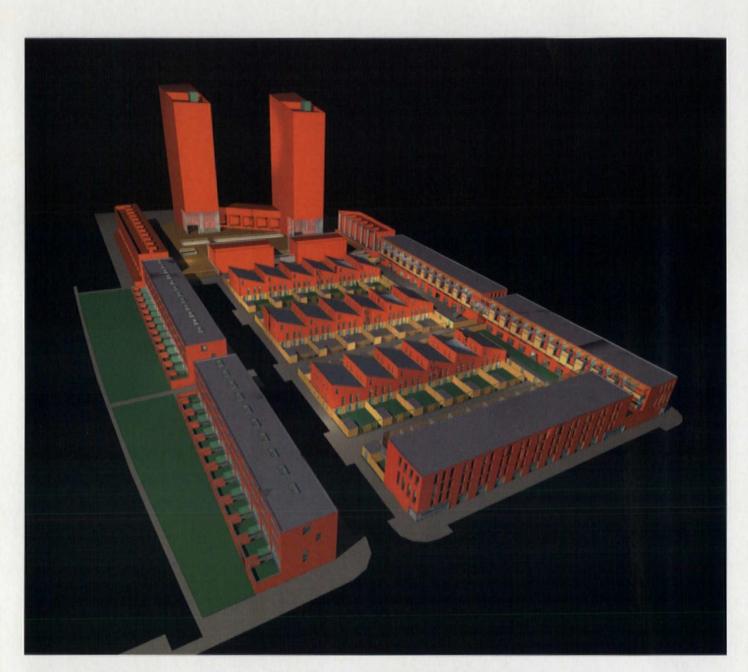
For the reconstruction, it was decided that prefabricated external wall panels would be preferable in order to minimise on-site trades and to ensure a fast rebuild time. Hanson TiS was appointed by Kajima to supply and fix the Wonderwall II panel system – a composite panel comprising Styrofoam sandwiched between two thin steel plates.



A section of Wonderwall II in use at Safeway

The finish comprised 25mm brick slips which matched the existing clay facings perfectly. A particular characteristic of the Wonderwall composite panel is that any type of brick – from extruded wire cut to stock or handmade – can be incorporated with ease. Reconstituted stonework and corbel details were also included in the 100 panels that were fabricated off-site at the Hanson TiS factory. The new Café Fresco also has Wonderwall II external walls.

The project provided an excellent opportunity for Hanson TiS to demonstrate the primary attributes of speed, quality and accuracy in which the latest technology has achieved a traditional appearance.



Dutch ahead of game with glued brickwork

With its Kartendrecht housing designs in Rotterdam, architect Maccreanor Lavington wanted to create a simple, strong monolithic effect – this desire made an extremely strong case for the use of glued brickwork

Tough difficult sites are not often chosen as laboratories in which to push forward the application of a new technology. On the other hand, they are often the projects that require exactly the sort of grand gesture that such a venture may involve.

This was the conclusion of architect Maccreanor Lavington when it was designing its Kartendrecht housing in Rotterdam, the Netherlands. The scheme, of 124 dwellings, is part of a larger masterplan for an area that is one of the most deprived in Holland. Now housing is going in for sale, but at the lower end of the market. Maccreanor Lavington's scheme is for a perimeter of four-storey buildings, some housing and some maisonettes, with twoand-a-half storey housing at the centre. This is a recreation of a back-to-back typology, with strongly geometric sawtooth roofs.

Aidan Williams of Maccreanor Lavington, who has worked on the project since the early stages, said: 'With the nature of the area and the limitations to the budget, we homed in on the idea that a strong but simple project was the right answer.' The architect quickly became keen on the idea of using glued brickwork. 'It is very warm,' said Williams. 'We appreciated that it could give us a really rich project.' Because glued brickwork uses a thin layer of adhesive to bond the layers, in place of mortar, the colour of the brickwork comes through much more strongly and the buildings look far more monolithic. 'We are always interested in having a monolithic quality in our buildings,' said Richard Lavington.

In addition, in its quest for simplicity, the architect was interested in the idea that with glued brickwork, the adhesive bond would make it possible to build the relatively small windows involved without the need for lin-







tels. In the event, it was not possible to carry out the requisite tests in time to adopt this idea. However, even without this, the project was innovative in that it was one of the largest projects in the Netherlands to have used glued brickwork. When the next phase of two apartment blocks is built (designed by different architects but using the same glued bricks), this will become the largest project anywhere.

That, in itself, was one potential problem. Others were the additional cost involved compared to conventional masonry, and the limited choice of bricks. In fact, the architect had only two to choose from in the requisite and most effective size, of 70 x 100 x 300mm. The chosen brick is an orange colour with a very dragged face.

Williams admitted he was not entirely happy about the brick when he saw it on its own but he added that 'all through the project, the colour of the brickwork has sung'.

The team argued hard for the additional expenditure on glued brickwork, and believes that it cost far less than any other The sculptural no-frills architecture of Kartendrecht is ideally suited to the use of glued brickwork. Architect Maccreanor Lavington has advanced knowledge of the use of the material

'feature' that could have been used on the buildings. 'If we had spent the extra money on some other embellishment, it would not have worked at all,' said Williams.

Because the use of glued brickwork is still in development, construction involved a learning process. Each brick has only one finished face, and therefore traditional methods of turning a corner could not be used. Instead, every brick on a corner had to be mitred. Again, because the windows were recessed to a thickness of one brick, every brick on each window had to be cut specially. In addition, the bricks to create the slope of the sawtooth roof had to be cut specially. Some of these problems should be overcome in time, with the introduction of a wider range of specials.

And the architect is delighted with the

quality of the finished brickwork. 'In Holland, the quality of conventional brickwork is appalling,' said Williams. 'Here we were confident that it couldn't be spoilt. Normally we have to get the bricklayers to acid-clean the brickwork.'

The joints between the courses are 3mm deep, and since the glue-mortar is recessed it is not visible. There is no mortar between adjacent bricks, which are spaced 5mm apart. 'As a result, we have had some fun with the expansion joints,' said Williams.

Instead of cutting them vertically, the architect cut out small sections of the adhesive to create a square wave running up the building.

This adds to the monolithic effect of the glued brickwork. These simple, strong buildings, with windows punched out at interesting spacings, make a strong case for the use of glued brickwork.

'We would definitely use it again and use it in the UK,' said Lavington, adding: 'But it might be difficult to use in the context of conventional brickwork.'



Sustainable products for today and tomorrow

Brick can make a solid contribution to sustainable development – not least because of its versatility and durability

Since energy and natural resources are consumed, and waste created, in both the creation and destruction of buildings, lifespan is an important marker of sustainability.

Brick's long-term durability is rarely in question, ensured not only by its technical longevity but also by its flexibility, which makes re-use simpler. This is apparent when one considers the number of refurbished Victorian buildings that have found a new lease of life with a change of use, for example, the dockland warehouses that are now being used as accommodation and offices.

In some cases, old buildings are simply repointed to provide several decades of extended life. In others, bricks may be completely reclaimed – dismantled, 'dressed' and re-used to alter and extend existing structures. Other ways to extend the life of buildings may involve manufacturing new products, which match existing products. These new products are designed to look like old bricks, being tumbled, chipped and splashed with paint to give the desired weathered appearance, but would, of course, carry a 60-year warranty.

Structural use of loadbearing masonry has been promoted for many years – long before 'sustainable construction' became The John Player factory in Nottingham (above) is an example of the longevity of brick buildings that, with intelligent maintenance, are sustainable through sheer durability and adaptability

fashionable. Historically, brickwork was used for its high load-carrying capacity as well as its durability and aesthetic appeal. But the introduction of the energy-efficient cavity wall put paid to brick's structural characteristics.

However, a revived promotion of structural brickwork then took place from the late 1960s. The promotional angle was that if structural masonry was used, it was possible to reduce overall building costs because you would not need structural frames of steel or concrete.

High-quality finish

This scenario is fine for certain building types, such as diaphragm and fin walls for large open-plan structures. Retaining walls provided clay brickwork as both the highquality finish and the structural element. Now we can revive the structural brickwork story, but this time from the point of view of sustainability rather than of straightforward economy. As U-values continue to become more stringent, cavities are becoming wider and techniques of cavity wall construction are changing with, for example, the use of partial fill. These changes create additional costs with longer wall ties, increased insulation, and increased overall wall thickness which means either sacrificing habitable floor space or increasing the land area for each dwelling.

Although bricks and brickwork as a material cannot influence the overall thermal efficiency of a wall significantly, cost savings can be made by tackling the problem of thicker walls. This can be done by reducing the thickness of the outer leaf.

Whereas standard UK bricks are 102.5mm thick, a number of products are made 90mm thick as standard. This may not look like much of a saving but it represents a decrease of 10 per cent in the width of the outer leaf.

In addition to the reduction in the building footprint, there is the volume of clay saved per m², which represents a saving in raw material and in the energy costs for firing. In addition, less mortar is used in the 90mm thick wall. This may be a simplistic analysis of sustainable design, but the issues are worthy of consideration. While clay brick is not the most thermally efficient building material, this does not mean that it has no contribution to make to the environmental performance of the building.

Clay brick has good sound-insulation characteristics and provides thermal mass, ie stores heat. This may be experienced when walking past a brickwork wall at the end of a cold but sunny day, and feeling radiant heat.

The process of supplying architects with samples of bricks has traditionally been high in energy and consumption of materials. Countless bricks are used for samples each year. These have to be presented in box-type packaging. Postage or transport is also expensive, with knock-on environmental implications.

Countless more bricks are cut into slips, and MDF and glue are used in forming sample panels. Again there are the costs and issues of transportation.

To tackle these issues, Hanson Brick has now increased the number of very highquality, high-resolution photographic panels that it uses instead of sample panels. The cost of printing is far less than the cost of making up panels, and the transport cost is negligible.

Electronically generated panel libraries and rendered-image details of architects' designs give a much better idea of what the finished building will look like. It is easier to change brick-and-mortar options by using computer-generated images. By tackling the issues of cost and sustainability, the service to the client is also improved.

Many a slip

Many new and innovative facade systems, which are required to have a clay brickwork finish, benefit from the use of brick slips rather than full-size traditional bricks. Slips possess all the aesthetic qualities of bricks

CASE STUDY: BRIDGING THE GAP

The Royal Ordnance factory in Enfield, Middlesex, has been transformed by Fairview Homes from a pre-war munitions plant into the hub of a private housing development.

The converted factory provides apartment accommodation, and the original brick has been attractively matched with facings from Hanson's London range.

Linked by two bridges, a private housing development has been completed successfully after considerable delay was incurred for essential land decontamination.

'Our partnership with Fairview and Enfield council required that Hanson would design and detail a brickwork cladding system to both parapets and abutments of the massive steel bridge structures,' said Paul Rogatzki, Hanson's commercial design manager.

'We specified full-size Kempston Melford Yellow facings, with detail in Butterley Charnwood Natural, to clad the structures

CASE STUDY: TRADITIONAL VALUES

Weston Homes, which specialises in restoring neglected heritage buildings to their original splendour, is turning a former hospital into the high-quality private apartments of Royal Earlswood Park.

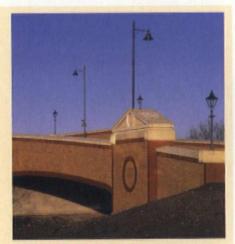
Reached through an avenue of rare Wellingtonia Redwoods in a setting of 35ha, the Victorian building has an imposing neo-Jacobean facade of brickwork and stone dressings. The 109 one-, two- and threebedroom apartments are all different. Their spacious rooms, high ceilings and large windows recapture the elegance of traditional Victorian architecture.

Weston Homes chose the Milton Hall soft red brick because it was the closest match to the existing Victorian brick and it has been used extensively on a number of exterior walls that were demolished and rebuilt. The renovation is nearing completion after almost two years.

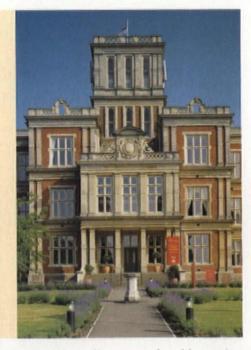
and will demonstrate durability characteristics in keeping with the brick from which they are formed.

The use of brick slips could seem like a logical continuation of the material savings offered by using more slender bricks. In fact, the most common method of producing slips is by cutting them from full-size clay units. While there is an obvious concern as to the sustainability issue – slips cut from extruded bricks leave some 75 per cent of the clay body useful for nothing more than recycled aggregate – the current demand is still a very small percentage of the brick market.

The seemingly obvious alternative is fraught with difficulty. Where slips have been pressed or extruded successfully, they suffer from a bland 'perfect' appearance that distinguishes them easily from the diverse characteristics of many clay bricks.



which required large quantities of matching specials.'Hanson's technical team invested heavily in time and commitment on this project, which is both aesthetically pleasing and structurally sound. The bridges are finished in reconstituted stone.



But where slips are produced by cutting from clay units with two faces, the waste factor is minimal as almost all of the brick is used.

General benefits of slips in terms of sustainability include:

• Lower volumes of clay used to give a brickwork appearance;

• Greater number of slips transported for a given lorry load (four times the number of bricks);

• Prefabricated panels benefit from the lighter weight of slips;

 Reduced loads transferred to the superstructure.

Construction techniques

Bricklaying costs per square metre will depend upon the number of units laid per day. Quite often, if we introduce a product of non-standard format (that is, not a 215 x 102×65 mm brick), the cost is quoted as higher than normal due to the bricklayers' lack of familiarity. If we are to make efforts to reduce brickwork construction costs, it is necessary either to de-skill the bricklaying process or to train bricklayers to work with different brick sizes.

It is not only brick sizes that differ. We can change the laying techniques, for example, by using thin-bed adhesive technology where a 5mm-thick high-strength adhesive is used rather than traditional cement-sand mortar.

The future

The techniques by which clay bricks are manufactured may change with time. New design methods may demand different shapes, colours and textures but one thing is for certain – the popularity of clay as a natural building material is unlikely to diminish in the foreseeable future. It already scores well in terms of sustainability, and further innovation will improve its performance.

Looking different over there...

Hanson is one of the largest brick producers in the United States and, with the company's other activities, it has a key position in the construction materials market

The brick market in the US is very different from the UK, reflecting the very different architectural market. Regional variations are marked and manufacturing processes have developed to suit them, reflecting the fact that architects and designers create vastly different designs.

A significant player in aggregates for residential and commercial projects, Hanson is the largest supplier of concrete pipes and cement and is involved in the production of ready-mixed concrete, hot-mixed asphalt and recycled aggregates. It therefore is aware of and responds to the particular conditions that prevail in North American markets.

About two-thirds of bricks produced in the US are used for residential housing and the balance for commercial and community projects such as schools, churches and retail. Canada has a similar structure.

In some regions, brick is undisputedly the most popular facade material, accounting for substantial proportions of the overall brick consumption. These can be summarised as:

 West South Central – Texas, Oklahoma, Arkansas and Louisiana

• East South Central – Alabama, Kentucky, Mississippi and Tennessee

 South Atlantic – Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia and Florida

In the first two regions, a minimum of 70 per cent of homes incorporate brickwork to some degree, either as the majority of the facade material or in an amalgam of brick and other materials (see table).

Although there are important regional differences in brick usage, one can make



Above left: the Lexington Municipal Center in Lexington, South Carolina, was designed by Architects BC which selected the 350 Red Wire Cut brick from the Southern Architectural Series. Above right: Peachtree offices in Atlanta, Georgia used the 145 Flashed Red Semi-Smooth brick in the Southern Architectural Series from Richtex Brick. Below: A more traditional building style

	ority brick of homes)	Some brick (% of homes)
West South Central	80.2	85.5
East South Central	60.7	70.5
South Atlantic	18.7	33.0

some generalisations in terms of style and material preferences.

For example, a starter home of less than 120m² in Texas will almost always be 100 per cent brick-built, whereas in North Carolina, one can expect no usage of brick in the design at all. Homes on a grander scale will



almost always use some brick, whatever the region, but it is usually combined with another material such as brick and stone or brick and stucco. Even within states, there can be variation. Take Texas for example, where stone is big in Austin but not in Dallas.

On the Pacific coast, states are virtually brick-free zones. At best, around five-and-ahalf per cent of domestic properties may have some brick. Conversely, brick is in greater demand there for commercial work.

So how does Hanson respond to these regional variations? It owns and operates 16 factories in the US and another five in Canada. It has a total production capacity of 1.5 billion bricks a year.

In addition, a new, state-of-the-art brickmaking factory is under construction in North Carolina. This, the seventeenth location, is due for completion early this summer when full operational capacity is expected to produce at least 80 million facings a year. At current output, Hanson's North American operation constitutes a 14 per cent share of the market.

Not surprisingly, the philosophy and structure of Hanson's North American company are unchanged from those of its UK counterparts. Variations and differences in raw materials from state to state open up new opportunities. Through increased investment in products and production facilities throughout North America, Hanson plans to ensure sustained growth in this part of the world.





The house has complete bricks in addition to the broken-up recycled materials

Recycled brick plays key role in underground house Recycled materials from Hanson have been used in an innovative house

Arguments about what really constitutes sustainability can be heated and founder on a lack of documentary evidence. This is why an earth-sheltered building designed by environmentally conscious architect Jerry Harrall is so interesting and important. He has designed a house for himself and a small office for his practice SEARCH (Sustainable Ecological Architecture) on the principles of low embodied energy, high thermal performance and minimal environmental impact. The building will form the basis of his doctoral thesis, and he is monitoring the hell out of it.

'On completion of both buildings, we'll monitor them for 12 months at least for the purposes of the doctorate,' Harrall said. 'We believe they might be the most monitored buildings in the UK – there are 120 temperature monitors built into them and we're monitoring the performance of the superstructure and the earth every hour, every day, 12 months of the year, indefinitely.'

The 180m² house and 54m² office should require no energy for heating, create no net CO₂ contribution and have a quarter of the running cost of a conventional building. In addition, all materials and methods have been chosen to have as small an environmental impact as possible. One of the essentials of the design is the use of an 'offthe-ground' substructure. This consists of a reinforced slab that acts as foundations and floor combined. 'Unlike a raft, it is rectangular in section throughout its plane,' said Harrall. Environmentally the advantage of this approach is that no excavation is necessary. The slab sits directly on hardcore, supported by compacted earth. And to create a key between the soil and the hardcore, there is a capping layer of 100 tonnes of brick batts, an aggregate made by Hanson Brick from recycled brick waste.

Concrete is used extensively in the building, with walls of 300mm dense concrete blocks and in-situ concrete. Harrall is concerned about the fact that for every m³ of cement produced, a tonne of CO₂ is generated. Minimising the cement content was therefore a priority. In this case, 10 per cent was replaced with very finely ground brick waste supplied by Hanson – the same material as the brick batts but the product of a further milling process.

Steven Miller, Hanson Brick's technical director, said: 'It has actually recreated a very old type of cement developed by the Romans. They used to grind up the waste from clay-pot manufacturers and mix it with burnt lime to achieve the same effect.'

The product was developed by Professor Stanley Wilde and Dr Martin O'Farrell at the University of Glamorgan's School of the Built Environment. O'Farrell's PhD was sponsored by Hanson Brick, which is how the company came to take such an interest in Harrall's work.

'This is the first time low-embodiedenergy concrete has been used,' said Harrall. All the materials were available from near to the South Lincolnshire site, minimising the environmental impact of transport. Theoretically more of the cement could have been replaced with brick dust – in experiments substitutions of up to 30 per cent have been used – but because this was a live building project, Harrall was cautious.

There were some problems of workability. 'The brick dust "muddies up" the concrete,' Harrall said. 'We used a lot more water and increased the slump.' The design strength was 30N but at 28 days slump the concrete was found to have achieved 50N.

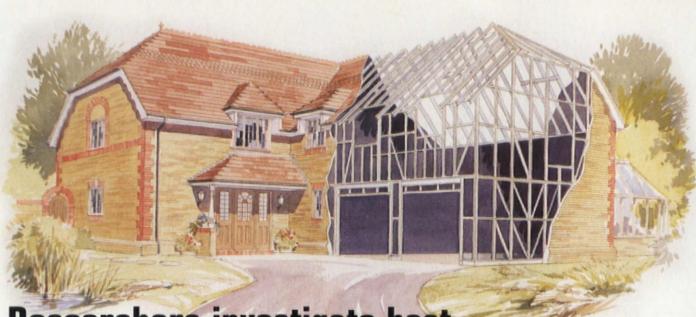
The experiment has been as successful aesthetically as technically. 'The concrete looks stunning,' said Harrall, 'it has a red hue to it.' In addition a quartzite aggregate was used, creating a terrazzo effect when the floor slab was polished.

The building does also use real, whole bricks. There are loadbearing masonry piers at the front that use 5,000 bricks – Victorian Blue bricks from the Butterley range, made in Buckley, north Wales, and yellow Hampton Autumn Mixture bricks, made at Hanson's King's Dyke factory near Peterborough. The latter range contains two recycled materials: ground granulated blast-furnace slag from Scunthorpe, a by-product of steel manufacture, and wood chippings from makers of chipboard furniture. These bricks are actually of higher specification than if they had been made purely from clay.

Not surprisingly, the building is highly insulated, with 140mm of extruded polystyrene used on the roof, the walls and under the floor. This is equivalent to 240mm of expanded polystyrene and has the additional important benefit of having a water take-up of only 5 per cent, so maintaining its thermal performance.

Harrall is confident that the house will need no heating, although there is an underfloor heating system that will be triggered thermostatically in extreme conditions.

Once the monitoring process is complete, we should know just how successful this approach has been. If his ideas take off there should be a wider market for the innovative products Hanson has helped develop.



Researchers investigate best practice with steel frames

An increasing interest in the use of cold section or lightweight steel section structures has highlighted a number of technical problems

In an effort to resolve some of the technical problems associated with the use of cold section or lightweight steel section structures, Hanson Brick formed a working group in conjunction with Oxford Brookes University and Corus Framing. The group comprised specialists in masonry, steel and structural engineering who addressed matters including:

A continuous brickwork outer leaf and the differential movement characteristics of steel frame and masonry cladding

Current building practice is generally to provide support to the brickwork outer leaf at every three storeys, often by incorporating stainless-steel shelf angles. This may lead to significant increases in cost. These increases are most likely to occur when one is considering the additional cost of the steelwork, the horizontal movement-joint material and the special-shaped pistol stretcher bricks required to cloak the angle.

Tests on the TF2000 brick-clad timberframed building at BRE Cardington - where six storeys of continuous masonry were constructed - have been promising. This research investigated the implications of incorporating several storeys of continuous masonry and the effects on detailing. Very little monitoring of differential movement in real buildings has been carried out. With little practical evidence available, an assessment may be made relating to the expansion rate of various types of clay brick. Movement (namely global expansion) is defined in categories 'low', 'medium', 'high', and 'very high' based on a standard test measurement.



Lightweight steel structures have great potential but there are technical issues to address

Investigation into reduction in the number of wall ties

The brick outer leaf to light steel framing is typically tied back to the vertical steel studs that provide resistance to wind loading. This is a slightly conservative approach as the masonry has significant resistance to wind load and the cost of wall ties is significant. The research investigated the possibilities of reducing the number of wall ties and the implications of this for the steel frame. The material saving in terms of wall-tie channels results in a cost saving of around £60 for the gable walls of a typical house. However, the requirement for additional ties around the windows and doors may not result in such a saving to the front and rear elevations. In fact, because it is important to standardise site components, the wall-tie channels to front and rear elevations would also require additional holes and fixings. It was estimated that the typical saving for a small detached house would be approximately £50.

Brickwork infill at roof level between dwellings

Brickwork is often required at roof level at the division between residential properties, due to the change in level. This is a concern with light steel framing because there is a possibility that condensation will occur. The infill detail has often been substituted by an alternative form of cladding. The research addressed the condensation issue and looked at the type of support required for the masonry.

Parapet design

The stability of end parapets, with their associated high wind loads, is often difficult to resolve structurally. The stability of masonry parapets using light steel framing was therefore investigated with consideration given to the use of cantilevered rolled hollow sections. However, this method of construction is rather cumbersome and, as an alternative, further investigation was carried out to ascertain whether it would be possible to cantilever the parapets out horizontally by providing bed-joint reinforcement.

 Hanson Brick has produced a series of information sheets that highlight design guidelines Over the next three pages we look at some of the ways Hanson Brick is improving the products and services it offers customers

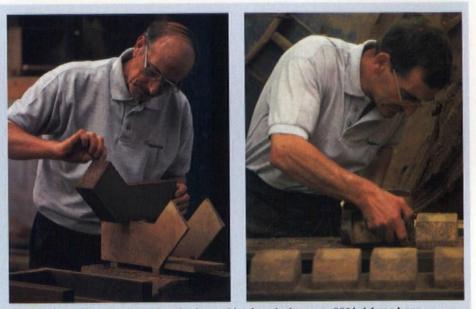
Made by hand

There are real signs of a revival in the popularity of handmade bricks, and Hanson is preparing for an increase in demand. Each week around 80,000 handmade facings are currently made at the company's Heather factory in Leicestershire. This is small in comparison with overall annual brick output, but in this case small is beautiful. The range already offers seven unique facings, and three new bricks are scheduled to join the collection this year.

It is the desire for individuality that drives the market for handmade bricks. No two are the same, and their unique differences provide the appeal and charm that make them so desirable. The image of skilled craftsmen creating every brick by hand appears increasingly attractive but this, of course, carries a premium.

Handmade bricks are still used mainly for commercial projects and public buildings, but increasingly developers of fine housing are using them on new properties to satisfy demand for top-end properties that have traditional aesthetic values.

The fine-textured handmades used in great historic buildings are much sought after. The three new facings from Hanson Brick are more uniform in finish than the originals in the range and have finer



An experienced handmade brick maker is capable of producing up to 550 bricks an hour. Working in teams of four, that is a total per team of 2,200 handmade bricks per hour

fissures. In spite of the company's reputation for volume manufacturing, with all its associated efficiencies, there still remains an opportunity to produce bricks in smaller quantities at realistic prices, allowing them to compete in markets believed to be served only by small, bespoke manufacturers. A thriving market for smaller 50mm handmade bricks is also developing. They have become popular for interior feature brickwork and are capable of achieving a totally different visual perspective. Together with special shapes to match the handmade products, they are all produced by Hanson at its Heather factory.



Arches made easy

The arch is one of the most popular brickwork details to be incorporated in a building structure. Arches have been used in masonry construction for centuries and they provide one of the first examples of a structural supporting element.

Although, since the introduction of the cavity wall, load-bearing brickwork arches are no longer required to support the floors and masonry above (the task of the modern lintel), arch details are still popular. They are commonly used as brickwork features in present-day buildings, particularly to enhance the aesthetics of doors and windows. Common forms include flat gauged Georgian, segmental, semi-circular and Gothic. More recently, numerous hybrid configurations have evolved which take account of cost, simplicity of fabrication and ease of construction.

With ever-tighter cost control demanded of building materials, Hanson Brick's Fabrik Arch range of brick arch details offers the desired benefits of reduced cost, high quality and aesthetic appeal. Fabrik Arches are prefabricated from standard facing-brick slips and are available in Charnwood Natural and Countryside Multi Buff. The slips are cut to shape and applied to aerated concrete blocks with an epoxy-resin-based compound. The brick slips are designated FL, being frost resistant with low soluble-salt content.

The use of aerated concrete means that the arches are lightweight and can be handled easily on site. Since the arches sit directly on standard proprietary lintels, there is no need for complex arch formers.

Consistent quality of both materials and the finished unit is guaranteed as each Fabrik Arch is manufactured in factory conditions and the skill required of the bricklayer is kept to a minimum. The only on-site operation is that of pointing the arch after placement.

Hanson Brick's Fabrik Arch range offers a variety of benefits including reduced cost and high quality



Public achievement

The Lakeside Residences at Aston University, Birmingham, designed by Feilden Clegg Bradley Architects, won the Best Public Building prize in the recent BDA Brick Awards. The scheme ranges from four to 16 storeys in height and is arranged in two blocks running north to south to ensure good natural daylight for its 651 students. The in-situ concrete frame is clad in a combination of terracotta brickwork and terracotta rain screen.

Horizontally projecting brick string sills and recessed brick bands at window level echo the horizontal emphasis of the cladding. The brickwork on the lift towers



is given scale by the introduction of vertical and horizontal recessed stack-bonded courses. At the heart of the scheme is a communal courtyard, and the buildings form a boundary to the campus. Brick: Desimpel Rossini, 290x90x65mm Main contractor: Laing Construction Structural engineer: Buro Happold



Pale face

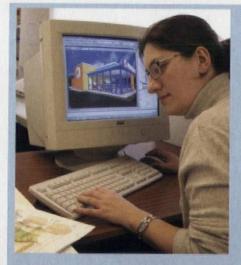
Two new facings have joined the extensive Butterley range. Satisfying demand for creamcoloured bricks, they offer great opportunity for

accentuating brickwork detail features.

The smooth-faced Butterley Carnforth and the drag-faced Kendal are both manufactured at Hanson Brick's Claughton Manor factory in Lancashire. This is the home of hi-tech brick manufacture and one of the most modern locations in the company's portfolio.

Made from local clay, both facings conform to BS3921. Perforated and carrying an FL durability classification, they have a water absorbency of <12 (per cent by weight) and a compressive strength of >40 (N/mm²).

Competitively priced, the facings are satisfying demand from developers in the north of England and in Scotland. You can see Hanson Brick's Brick Selector with Mix & Match facility at www. hanson-brickseurope.com, or on colourmatched photographic panels.



Putting on a brave facade

Hanson Brick will carry out a building feasibility study to help the construction team arrive at the best facade solution for your building. The company's portfolio of wall systems is under constant review and development with the objective of providing the most appropriate solution for particular building designs. This may involve prefabricated wall panels, composite construction or the use of high-strength adhesive mortars. Alternatively, Hanson The design services team at Hanson Brick provides design solutions for architects and clients

Brick may recommend that either traditional masonry, structural brickwork or single-skin cladding to a steel or timber frame would provide the best answer to a client's brief.

In all cases the best achievable results depend upon an early opportunity to assess the problem, that is, at the start of the design development stage. Where innovative design or construction techniques are to be applied, or when new material developments are used, it is essential to ensure that the whole construction team and the client are willing to cooperate.

Investment in new building methods takes a great deal of time. However, all this input and hours of testing, detailing and making models is no substitute for a trial project. Many of the highly publicised demonstration projects have been successful due to this fact alone. It may be questionable whether a direct cost saving is made on the first project but the benefits come from the lessons learned and the knowledge that is taken forward into the next application.

In the absence of British Standards in the testing of new materials, manufacturers are responsible for providing extensive tests of their own

comprehensive technical information relating to the structural behaviour of the materials. Many of the new and innovative ideas have no long-term history with respect to performance – and this is a parameter that often plays a great part in proving the track record of a product.

When Hanson Brick's design teams are introduced to a new idea, these ideas must be supported with much more detailed technical information. Brickwork comprises bricks and mortar – there are three components and three areas of responsibility, ie the brick, the mortar and the brickwork. If a wall panel is supplied, there is only one area of responsibility. There will often be new materials and compositions of various materials for which there is quite often no British Standard either for material testing or for good building practice. This increases the material supplier's need to provide a more in-depth testing programme.

Hanson Brick has been developing an in-house structural testing facility. This carries out flexural-strength or lateral-loading tests. It is a time-consuming operation which requires the construction of small wall panels (wallettes) that are then tested to destruction to determine the 'bending strength'. The need for such testing is particularly important with the development of thin-bed masonry adhesives and for brickwork which uses the less common bonding patterns, such as stack-bonded brickwork with its continuous joints both horizontally and vertically.

The company works closely with independent testing houses, for example CERAM in Stoke on Trent, and is often in consultation with other material specialists, such as Ancon Clarke which produce ties and fixings and is able to evaluate the structural performance of wall ties in non-conventional masonry.

All of this makes for greater responsibility for the material producer as they become an increasingly important member of the construction team.

CPD on changing faces

Testing gears up

There is a continuous high level of enquiries regarding the use of non standard-sized clay bricks coupled with the desire to try new and innovative building techniques. This has led Hanson Brick to add a further CPD module to the current portfolio.

Manufacturers are concerned with routine material testing in

order to show compliance of their products with the relevant codes

and standards. For brick manufacturers this involves tests to show

weather resistance, dimensional tolerances and basic physical

properties such as unit compressive strength and water absorption.

involved with the development of the facade, be it simply external cladding or structural elements, they need to provide much more

As manufacturers of building materials become increasingly

The new module, aimed at architects requiring continuing professional development, will review the renewed interest that designers are showing in providing facades that use larger brick units, alternative bonding patterns and possible construction alternatives.

Hanson Brick makes a number of clay bricks that measure 290x90x90 and 290x90x65mm. To achieve a 'tiled' appearance, it also makes bricks that are only 47mm in height. These, when used with a 3mm joint, provide a coursing height of 50mm.

The larger units, coupled with the change from traditional stretcher bond to the more ambitious stack bonding, will provide a uniformity to the clay brickwork that might otherwise only be achieved with tiles. Such systems put a greater demand on the company's design and technical sup-



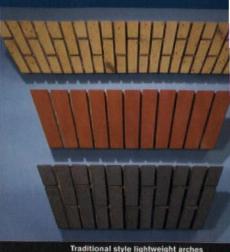
Stack bonding achieves a uniform appearance in brickwork

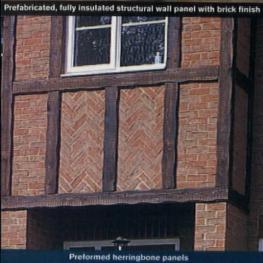
port facilities, as it is often necessary to assist designers with details for ties and fixings as well as to provide test data for the strength of stack-bonded panels. Where a thin mortar joint may be the preferred finish, it is possible to use a high-strength adhesive as opposed to the standard cement-and-sand mortars.

Hanson Brick's CPD module will aim to review the design, detailing and construction of modular bricks and thin-bed adhesive technology.









building innovations



Masonry using adhesive technology





Lightweight prefabricated cladding panels with brick slip

Paying attention to detail

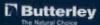
Hanson are committed to developing new and innovative building solutions. Such solutions include the Wonderwall Specialist Cladding System, volumetric and modular buildings and the use of masonry adhesives as an alternative to conventional mortar in creating new and exciting uses for brickwork. The production of brickwork details such as lightweight arches, sills and quoins now enables fast construction as well as providing a consistently high quality product which can easily be installed.

For further details please contact our Specification Department on 08705 258258.

Desimpel

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ansor

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gnorance is no excuse....



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review



Out of the ordinary

RICHARD WESTON

Complex Ordinariness: The Upper Lawn Pavilion by Alison and Peter Smithson By Bruno Krucker. ETH, Zurich, 2002. 80 pp. £25

Papers

By Jonathan Sergison and Stephen Bates. Sergison Bates, 2001. 72pp. £18. Both are available from Triangle bookshop 020 7631 1381

For a book extolling the virtues of finelytuned ordinariness, Bruno Krucker's begins badly: the Smithsons, he announces, 'succeeded in achieving high contextual discursive density'. Do not be put off, however, as this is happily one of very few pretentious phrases in an exquisitely designed and illustrated book which, while centred on the Upper Lawn Pavilion, offers an absorbing exploration and re-evaluation of the Smithsons' ideas and work.

Built between 1959 and 1961 as a summer house for the Smithsons' own use, Upper Lawn does not loom large in the literature on or by them. True, in 1985 Alison did publish a paper modestly comparing it to the Farnsworth and Eames houses, but it has not been placed in that company by others. Krucker's book offers comprehensive documentation – fine measured drawings, and seductive black and white photographs by Georg Aerni (see above and right) – and a persuasive argument that the project deserves to be seen as a poetic condensation of many of the architects' abiding themes.

The review of 'clusters', 'select and arrange', 'conglomerate ordering', and other techniques of the Smithsons' distinctive design repertoire, will be a valuable primer for those unfamiliar with their ideas, while for devotees, Krucker's account has the benefit of being written from a continental perspective. He is very good on the 'carefully careless' making of the Economist group, and his analysis of the pavilion itself is a delight, effortlessly integrating an impressive range of ideas.

Sited on land overlooking the location of William Beckford's ill-fated Fonthill Abbey, Upper Lawn incorporates an existing garden wall and the remains of an old house. The artfulness of the Smithsons' response is exemplified by the treatment of two windows, one absorbed unselfconsciously into the house, the other – still glazed and shuttered – forming an opening in what became part of the garden wall. It was clearly intended to bring to mind Le Corbusier's Petite Maison on Lake Geneva, and Krucker also convincingly links it to what the Smithsons called 'materials of Duchampian ordinariness'.

Krucker's fascination with this quintessentially English ensemble is turned to contemporary ends in his closing paragraphs. 'Large parts of this text,' he writes, 'are intended as a rehabilitation of the Picturesque as a "theory of practice". Just as the Picturesque developed in reaction to the formalism of 'Capability' Brown and his followers, so Krucker's antagonist is the mono-material 'Swiss Box' school – alluded to in the text, but only mentioned in a footnote.

With its concern for context, allusion and image, rather than a preoccupation with abstract form, the Picturesque commended itself to the Smithsons in their search for a 'natural order' born from the 'poetic relationship between living things and environment' – and might do so again to us now.

Krucker mentions Sergison Bates as being among the practices pursuing this direction, and Jonathan Sergison and Stephen Bates in turn cite the Smithsons' method of 'disciplined reflection' as a model. Several of the essays presented in *Papers*, such as 'A view of how things are' and 'Way to work', combine image and text to offer insights into everyday, taken-for-granted scenes. And like the Smithsons in their time, Sergison Bates draws on recent art practices – from Pop to Minimalism – in its search for the 'ordinary'.

To their detractors, the Smithsons' mixture of historical commentary and self-analysis/promotion could seem selfregarding, and Sergison Bates exposes itself



to the same accusation. With its artcatalogue style – five dust-wrappers, large typefaces, minimal margins, bibliography on the rear cover – and phrases such as 'our own cultural and sociological location', the whiff of pretension is ever-present. The Walsall pub interior, we are told, deploys 'a strategy of using linings and claddings to express an atmosphere', as if this were revelatory, rather than something Adolf Loos did rather well a century ago (see picture below).

Enough carping. Sergison Bates' interests are interesting, and it uses materials in ways that are fresh - designed to evoke associations as well as assert, Swiss-fashion, the matter-of-factness of their buildings. Its preoccupation with the ordinary is timely, but also highlights what a problematic category 'ordinariness' is. For Robert Venturi it was 'ugly and ordinary' Main Street - closer to Sergison Bates' fascination with suburbia than it might wish to admit. For Christopher Alexander it was supposedly unselfconscious vernaculars - a pole of the 'pure work' of 'geniuses and peasants' which Le Corbusier pursued in his programme of self-education, and the Smithsons echoed



in their conviction that 'things need to be ordinary and heroic at the same time'.

Like the art practices upon which it draws, the Sergison Bates brand of ordinariness is artful and clever, and is earning it an international reputation and a coterie of admirers. But to my non-metropolitan eyes, the work gathered in *Papers* feels altogether too knowing and self-conscious. In a vulgar age, its restraint and apparent modesty are admirable, but both buildings and essays seem to me more like commentaries on architecture than compelling evidence of a determination to build it.

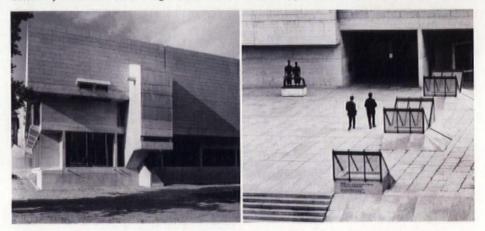
Richard Weston is a professor at the Welsh School of Architecture, Cardiff University

Talented pragmatists

STEPHEN GREENBERG

Collaborations: The Architecture of ABK

Edited by Kenneth Powell. August/Birkhäuser, 2002. 176pp. £26



Styles in architecture, as in popular music, now come round ever more rapidly. In music we see cover versions and remixes by DJs, rather than the composer or original performer. In architecture, we see retro-modern, and a revival of interest in one of Paul Koralek's former employers, Marcel Breuer.

So, 40 years on from its conception, ABK's Berkeley Library at Trinity College Dublin once more looks fresh and contemporary (see above). All that has changed is the photographer. Substitute Hélène Binet for John Donat and this building would sit alongside Gigon/Guyer, Peter Zumthor and Herzog & de Meuron.

This is not said glibly; rather, it reveals something of the unusual character and ethos of ABK. Judging by the mixed quality of the visual records of its projects, it is clear that the partners have never fetishised their own archive. The building as live performance, rather than a highly controlled and manufactured representation, has always been ABK's litmus test. The 'materiality' and 'textures' and 'light' of the Berkeley Library, to borrow from current obsessions, have to be experienced, as does its presence on a historic campus.

ABK is hard to pin down: three talented architects working together and on each other's designs, who eschew 'architect's ego' and therefore happen to be nice guys (hence the title of this monograph – *Collaborations*). This is both their strength and their weakness. It allows them to respond pragmatically to problem solving, rather than a one-style-fits-all approach, but it makes their work hard to encapsulate – it is easy to misread them as eclectics. So much so, that Jeremy Melvin, Elain Harwood, Kenneth Powell, Frank McDonald and Paul Finch together do not crack it. And their task is not helped by the graphic format, which crams their essays into slender colourcoded bands running simultaneously across the top and bottom of the page. (More like a magazine than a book, more thematic than chronological in its structure, it is clearly an attempt to eschew the usual formats.) So I went back to the 1991 monograph published by Academy Editions, for one voice (Peter Blundell-Jones), a traditional approach, and a simple linear overview of the work.

Here are two suggestions for a deeper and necessary appraisal of ABK's work in the future. The first is to consider its position as 'Modernist', which is primarily social and ideological. This cannot be understood by analysing the look of the architecture, but the kinds of problems it addresses, the changing structures of everyday life, and how it responds to them in a very broad range of briefs; architecture as a lens through which we comprehend and transform the world around us.

The second is that world outside ABK's studio and how the partners interacted with it – its politics, its technology, its burning issues, and its fashions. A time-line illustrating their projects, alongside the events they were embroiled in, and the architecture of their peers, would shed light not just on their own output but on that epoch. No doubt the authors would argue that is what the monograph is attempting, but they neither situate nor explore the work as profoundly as they might.

Stephen Greenberg is director of Metaphor

review

Documenting destruction

ROBERT ELWALL

After September 11: Images from Ground Zero. Photographs by Joel Meyerowitz/

The London Blitz. Photographs by Arthur Cross and Fred Tibbs At the Museum of London, London Wall, London EC2 until 14 April

Joel Meyerowitz's documentation of Ground Zero stands in a long tradition of photographs of war-torn buildings that has provided the medium with some of its most haunting images. These include, for example, George Barnard's photographs of cities devastated during the American Civil War (1866), which in retrospect seem a chilling prefiguration of scenes in Dresden and Nagasaki, and J Andrieu's pictures of Paris in the aftermath of the Commune (1871).

Surprisingly for such a distinguished photographer, this is Meyerowitz's first solo show in the UK. Born in 1938, he is known primarily for his candid street photographs of New York, taken with a small hand-held camera, which owed a debt to his mentors, Robert Frank and Henri Cartier-Bresson. He subsequently began using an antiquated large-format Deardoff view camera, which called for the more calculated compositions that filled his book *St Louis & the Arch* (1976), and which he has used to record Ground Zero.

Initially denied access to the site because it was a designated crime scene, Meyerowitz was surely right to insist that a photographic record was made of the destruction wrought by the events of 11 September, and of the painful process of recovery. As he was the



sole photographer allowed unimpeded access to the site, these photographs will remain important historical documents. Their sincerity cannot be doubted and many possess a melancholic beauty.

They are, however, strangely unmoving. Why is this? We can dismiss the argument heard at the opening that the subject would have been better treated in black and white. Meyerowitz has been one of the leading proponents of colour photography and his previous work has given the lie to this contention.

If we look at Barnard's Civil War photographs or Alain Resnais' film *Nuit et Brouillard* (1956) – surely the most harrowing documentary made about the death camps of the Second World War – both derive their power from presenting their subjects in an almost matter-of-fact manner, leaving us free to imagine the horrors involved. By contrast, Meyerowitz's photographs of Ground Zero tend to stir not our own worst imaginings but to evoke other even more horrific images of 11 September, which have been seared indelibly into our consciousness. Images beget images and are neutered as a result.

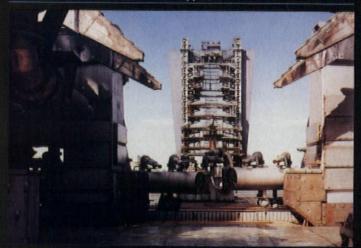
Although you would scarcely know it from the publicity, Meyerowitz's pictures are accompanied by some truly remarkable photographs of the Blitz, from the Museum of London's own collection. They were taken with a second-hand Leica and Kodak halfplate camera by two City of London police officers, Arthur Cross and Fred Tibbs, as part of their official duties.

These animated images form a poignant contrast to the more contemplative examination of Ground Zero. One view in particular – a low angle shot of Queen Street Place (1941) with fire hoses sinuously stretching into the far distance between rows of gutted buildings – is a reminder that often the images most humble in intent ultimately prove the most powerful.

Robert Elwall is curator of the RIBA Photographs Collection

Kosmos

Photographs by Adam Bartos, with an essay by Svetlana Boym. Princeton Architectural Press, 2001. 176pp. £28



Adam Bartos' previous book of photographs, *International Territory*, makes the UN building in New York look eerily trapped in time, *writes Andrew Mead*. Its unpeopled interiors, its decor and furnishings, its ephemera – through Bartos' eyes, all suck you back into the past; so much so that it is hard to credit that, in its stuttering way, the UN continues to function.

For Kosmos, Bartos has journeyed to another continent, but to terrain just as suited to his particular vision: the main site of the Russian space programme. The cosmodrome of Baikonur – 'part of the secret geography of the Soviet Union,' says Svetlana Boym in her essay – was founded in 1955 in the Kazakh desert near the Aral Sea. Thirty years later, it had 52 launching pads, 34 laboratories, 10 factories, and all the civic necessities for a 150,000 population. Gagarin went into orbit from here, and Boym's generation grew up expecting they would go to the moon. That has not been the case, of course (and Boym has gone to Harvard instead).

Those thwarted aspirations are palpable in this book. Though the opening image is of a 1998 launch at Baikonur, like Cape Canaveral the cosmodrome speaks more of failure or futility than triumph. It looks set now to be largely a museum, with former protagonists in the space programme – Bartos includes portraits of scientists, engineers, etc – as its elderly attendants. Pictured is one of the abandoned launch-pads at Baikonur.

diary

London

Will Alsop: Beauty, Joy and the Real 28 March-8 June. An exhibition at Sir John Soane's Museum, 13 Lincoln's Inn Fields, WC2. Details 020 7405 2107.

Component Design Until 6 April. An exhibition at the Building Centre, Store St, WC1 (020 7692 6209).

Recent Developments in Russian Architecture Until 6 April. An exhibition at the RIBA, 66 Portland Place, W1. Details 0906 302 0400. Barbican: This was Tomorrow Until 14 April. An exhibition at the Barbican Centre, Silk St, EC2. Details 020 7638 4141.

William Beckford 1760-1844 Until 14 April. An exhibition at Dulwich Picture Gallery, Gallery Rd, SE21. Details 020 8693 5254.

Art and Architecture: The Next Generation Wednesday 17 April, 18.00. A discussion at Tate Modern with Richard MacCormac, Pierre d'Avoine etc. Tickets 020 7887 8888.

Marketing and Brand Imaging Wednesday 17 April. A Colander course at the Building Centre, WC1. Details 020 8771 6445.

Partners in Urban Renaissance: The 24 Towns Initiative Wednesday 17 April, 18.30. A talk by Nicholas Falk at The Gallery, 70 Cowcross St, EC1. Details 020 7250 0892.

Securing a Proper Fee Wednesday 24 April. A Colander course at the Building Centre, WC1. Details 020 8771 6445.

Hardcore: Concrete's Rise from Utility to Luxury Until 25 May. An exhibition at the RIBA, 66 Portland Place, W1. Details 0906 302 0400.

Eastern

David Morley Wednesday 10 April, 19.30. A lecture at the Chapter House, St Albans Abbey. Details 01438 712301.

A Measure of Reality Until 28 April. An exhibition at Kettle's Yard, Castle St, Cambridge. Details 01223 352124. Landmarks Until 28 April. Photographs by Fay Godwin at the Sainsbury Centre, UEA, Norwich. Details 01603 593199.

East Midlands Third National Regeneration

Convention 8-10 April. At Nottingham. Details Emma Tozer 020 7251 2363. RIBA CPD Event: BS8300 Code of Practice Friday 26 April. A seminar at Leicester. Details 0121 233 2321.

North West Kevin Drayton (One Seventeen AD) Thursday 28 March, 19.30. A lecture



BRONZE MEDALLIST

Simon Beeson, architect and teacher at Edinburgh College of Art, lives near the ruins of Linlithgow Palace – a building that reflects his interest in the inhabited walls of Scottish castles, and informs the design of his new bronze medal for the British Art Medal Society. Details 01892 613370.

at the Foster Building, University of Central Lancashire, Preston. Details Peter Trebilcock 0161 973 1505. Climate Change and the Built

Environment 8-9 April. A conference at UMIST, Manchester. Details 0161 200 3700.

South Eastern Cultural Centre, Sittingbourne

Wednesday 10 April. An open day to see competition entries for the centre. At Phoenix House, Central Ave, Sittingbourne. Details Ruth Gage 01634 401166.

Second Annual Sustainability

Symposium Thursday 11 April. At Canterbury School of Architecture. Details 01227 817532. Conservation and Repair of Plasters

and Renders 23-26 April. A course at West Dean College, near Chichester. Details 01243 811301.

RIBA CPD Event: Building Regulations Update Thursday 25 April, 16.00. At Le Meridien Hotel, Gatwick. Details 01892 515878.

Ian Breakwell Until 28 April. An installation at the De La Warr Pavilion, Bexhill-on-Sea, Details 01424 787900.

Building the Homes of Tomorrow *Tuesday 28 May*. A CIEF conference at the County Hall, Maidstone, Kent. Details fax 020 7222 0445.

Southern

Kathryn Findlay Thursday 11 April, 18.00. A lecture at the Portland Building, Portsmouth School of Architecture. Details 02392 842086. Architecture 3 Ways Until 14 April. An exhibition with work by 10 practices at the Robert Phillips Gallery, Riverhouse, Manor Rd, Walton-on-Thames (01932 254198). Dalziel + Scullion: Home Until 28 April. Landscape-based work at Milton Keynes Gallery, 900 Midsummer Boulevard, Milton Keynes. Details 01908 676900.

South West

Urban Plymouth: Regeneration with Inspiration Thursday 2 May. A conference at Plymouth with speakers including Lord Rogers. Details 01752 233304.

Wessex

Peter Frie/Gary Breeze Until 12 May. Two exhibitions at the New Art Centre, Roche Court, East Winterslow, near Salisbury – site of Munkenbeck + Marshall's Artist's House. Details 01980 862244. Regeneration Through Conservation: Reviving Our Urban Communities Friday 24 May. A conference at The Watershed, Bristol. Details Charlie Bisnar 01732 220151. Information for inclusion should be sent to Andrew Mead at The Architects' Journal at least two weeks before publication.

West Midlands

Brian Vermeulen Tuesday 2 April, 19.30. A lecture at the Victoria Hall, Hanley, Stoke-on-Trent. Details Chris Hesketh 01538 373497. RIBA CPD Event: How to Attract New

Clients and Win Their Business Wednesday 24 April, 14.30. A seminar at Birmingham (0121 233 2321).

Yorkshire

Richard Wilson Until 7 April. Works by the installation artist at the Mappin Gallery, Sheffield (0114 272 6281). Tania Kovats/Richard Devereux/ Anthony Caro Until 12 May. At the Yorkshire Sculpture Park, West Bretton. Details 01924 830302.

Scotland

RIAS Convention 2002 Friday 3 May. At Inverness. Speakers include Alvaro Siza and Nicholas Grimshaw. Details RIAS Events 0131 229 7545. Ruth Vollmer Until 5 May. Sculpture and drawings at Inverleith House, Royal Botanic Garden, Edinburgh. Details 0131 248 2983.

Improving Construction Site

Communication Thursday 9 May. A BRE workshop at Glasgow. Details Alastair Stupart 01355 576244. India of Inchinan Until 26 May. An exhibition at The Lighthouse, 11 Mitchell Lane, Glasgow. Details 0141 225 8414.

Anatomy of the House Until 26 May. An exhibition on Scottish domestic development at The Lighthouse, 11 Mitchell Lane, Glasgow. Details 0141 225 8414.

Wales

Reiko Ayagi Through the spring. A new light work at Bleddfa Centre for the Arts, Knighton (01547 550 377). Wendy James (Studio Libeskind) Thursday 25 April, 19.30. A lecture at Faenol Fawr Hotel, Bodelwyddan, St

Asaph. Details 01745 815600. **RSAW Access Auditing and Inclusive Design** 25 & 26 April. At St David's Hotel & Spa, Cardiff Bay. Details 029 2087 4753.

RSAW Spring School: Design-Led Regeneration Friday 17 May. At Portmeirion. Details 029 2087 4753.

International The Big Projects: Dutch Architecture Policy in Perspective Until 5 May. Ten current Dutch projects in an

exhibition at the NAI, Rotterdam. Details 003110 4401200. Arne Jacobsen 100 Years Until 9 June.

Arne Jacobsen 100 Years Until 9 June. An exhibition at the Danish Design Centre, Copenhagen. Details www.arne-jacobsen.com

recruitment

Deadlines

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jobspot

Fooling around at the office

Office pranksters are a boon or a total pain in the proverbial, depending on whether you are one of them or having to grin inanely at their japes.

This, of course, has been beautifully satirised in *The Office*, BBC2's killer comedy featuring Ricky Gervais as the boss of a paper firm in Slough. In reality, as April Fool's Day approaches, it pays to be on the constant watch-out for comedy phone lines and other laugh-a-minute antics, or even the stapler-set-in-a-jelly high jinks à la *The Office*.

The first item to be wary of is the fax machine. Myriad companies have cottoned on to the notion that, by faxing any number of offices with a premium-rate telephone number emblazoned on an A4 sheet, coupled to the promise of 'sending up your mates', filthy lucre will come pouring in. Having been mug enough to call one of these lines, I can tell you that you simply dial, press hash and 'put through' the tape of the angry 'tax inspector' or similar lunatic to your in-the-dark colleague. Hilarity, of course, ensues.

The second contraption to steer clear of is the photocopier, primarily because of late-night office parties and the peculiar desire that sweeps over office workers to make a simulacrum of various body parts, mostly rears. More jolly japes – but pity the poor fool who includes a rogue 'arse' sheet in a presentation to a client ('We've gone for a symmetrical design, with two wings').

The best thing to do, as 1 April approaches, is not to say anything remotely resembling 'the joke's on you', or, 'you're the fool, because it's after 12', because these are not the most powerful rebuttles. The best thing to do on 1April this year is stay at home. It is Easter Monday, after all.

Dirk Lombard



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TENDERS

Portsmouth and South East Hampshire Partnership

Invitation To Tender For The Preparation Of A Regeneration Strategy For Somerstown, Portsmouth

The Area:

Somerstown lies at the heart of Portsmouth, comprising an area of around 1.5 square kilometres with a population of some 9,000 people. The area has a mix of high and medium rise social housing, private housing and some small local businesses, which has resulted in a built environment in need of regeneration and improvements.

The Project:

The Portsmouth and South East Hampshire Partnership, together with the Somerstown Community board wish to employ a suitable practice to develop a regeneration strategy for the area commencing in August 2002. The strategy, which should be innovative and follow aims of sustainability, must be derived from continued participation with residents and local groups.

Expressions of Interest:

Prospective applicants should, in the first instance write to:- Chris Egan, Area Co-ordinator, Portsmouth and South East Hampshire Partnership, Enterprise House, 1st Floor Annexe, Isambard Brunel Road, Portsmouth PO1 2RZ, email: cegan@portsmouthcc.gov.uk BEFORE the closing date of Friday 26 April 2002 for a pre-qualification questionnaire (which will be issued after the closing date).





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Edward Nash Partnership Seek Architects post Part III and II with relevant experience, interested in work involving historic buildings and associated new design. Also technicians with housing experience. We value evidence of good hand drawing and illustration alongside CAD ability. For information on our range of Planning and Design work consult <u>www.nashpartnership.com</u>, Please include evidence of drawing techniques with CV's.

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PROJECT ARCHITECT (Ref 121) Highly competitive salary East Midlands

Our client, a top 50 architectural practice requires an experienced architect to fill this vital role working within the company's retail and commercial division. Ideally candidates should have a minimum of 5 years post qualification experience and 3D visualisation skills.



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Centurion Architectural Recruitment

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Architects (x3) Cen/S.London up to £35k + Bens We have three vacancies for recently qualified Architects with experience of transport projects. Ideally you will have worked on Railway, Underground or Airport projects probably as part of a large team. You will need to demonstrate a good understanding of the current legislation, and be fully CAD literate either on Microstation or Autocad. Some package leading, or job running would also be a benefit, but most importantly you will need to fit into a team environment. Excellent rewards and career prospects are on offer, and applications are invited from those seeking either permanent or contract positions. Ref: MR625A

Bedford Architect/Asst/Tech £V. Good Packages This highly successful practice is looking for the above positions to work on a number of recently awarded projects; commercial, urban regeneration, residential and industrial. There are a number of vacancies to fill either within existing teams or in forming new ones, and the roles are for an experienced Project Architect, with proven job running success, and for Assistant Architects and Technicians with good CAD skills. These positions are permanent, but applications would also be considered from contract/temp candidates. Rewarding positions in a friendly working environment await the successful candidates. Ref: M2635A

North London up to £32k + Bens Architect/Assistant This small/medium sized design led North London practice is looking for a recently qualified architect or experienced architectural assistant to help on a number of recently awarded projects, commercial fit-outs and new build. Design flair, good Autocad skills and some experience of 3D Studio Max, Form Z, and some job running would all be a benefit. This is an excellent position, and would suit someone looking to further their career with a practice that promotes CPD and actively assists its staff with their careers. Ref: MR632A

Sen. Architect/Associate (x3) Watford £Individual Packages within this medium sized practice for 3 suitably experienced professionals to head up teams/depts in the following areas: Housing, Commercial and Leisure. You will need previous proven success, excellent communication and job running experience, some experience of management and a good working knowledge of Autocad. These are long term positions with genuine partnership potential for the successful candidates who go on to prove their worth, coupled with a good working environment in a friendly office. Ref: MR631A

Architect/Technician West Sussex **£Very Good** This well respected architectural practice is looking for an experienced Architect and Technician/Technologist to augment the existing teams and form new ones on some recently awarded projects. With a diverse workload on a multitude of varied projects, applications are invited from professionals from varied backgrounds, job running skills, good Autocad and communication skills. Long term positions with good career progression. Ref: MR627A

TEMPS/TEMPS/TEMPS/TEMPS/TEMPS/TEMPS/TEMPS/TEMPS/TEMPS/ **Greater London**

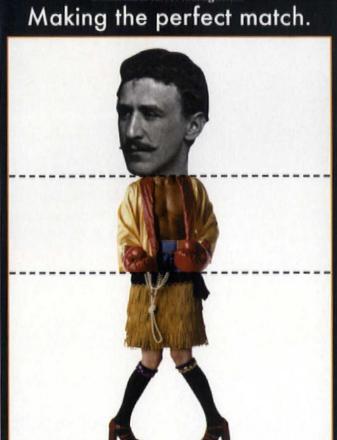
Transport, Commercial, Housing, Industrial, Financial Long term and short term, various practices of varying sizes, all types of roles and positions from CAD jockeys to Senior Architects. Immediate starts! Refs: VARA and

Home Counties, South East, M25 Borders Project Architects, Architects, Architectural Assistants, Senior Technician, CAD Technicians, Technical Co-ordinators.

We have permanent & contract vacancies in most locations as above, and would be interested to hear from professionals looking for a new challenge, change in direction or to advance their careers. Ideally you will have a recognised qualification, computer literacy and some relevant experience. Refs: VARA

For a brief informal chat in confidence please contact either Robert or Mark

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Open ideas competition to explore the provision of learning space within the home in the 'Becontree type cottages' located in the Fanshawe Ward of the London Borough of Barking & Dagenham. Information available from the RIBA Competitions Office, tel 0113 2341335, fax 0113 2460744. Submission deadline 16.4.02.

OTHERS

RICH MIX PROJECT

Architectural and M&E engineering for an east London cultural centre created from two existing buildings. Applications to Chris Davies, Cityside Regeneration Ltd, 26 Calvert Avenue, London E2 7JP, tel 020 7739 9203, fax 020 7739 5644, e-mail chris@ cityside.org.uk. Dispatch of invitations to tender 15.4.02.

DOWNEND UPPER SCHOOL

Amalgamation of upper and lower schools on existing site, comprising mix of new build and remodelling works. Contact Stephen Lucas, Property Services, South Gloucestershire Council, Bowling Hill, Chipping Sodbury BS37 6JX, tel 01454 865082, fax 01454 865090, e-mail: stephen_lucas@southglos. gov.uk. Applications by 8.4.02.

COURT SERVICE ESTATE

Updates on CAD drawings of the Court Service estate and associated analysis of areas and usage, and the maintenance and running of an estate benchmark costs system. Contact Mr J J Hogg, The Court Service, LCD, APD, Southside, 105 Victoria Street, London SW1E 6QT, tel 020 7210 2108. Applications by 5.4.02.

• Richard Haut operates the weekly 'competitions' e-mail service – telling architects about projects they can apply for across Britain, Ireland and Europe. Tel 0033 6 73 75 02 76, e-mail hautrichard @hotmail.com. Web: communities.msn.com/ RichardHauts competitions



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Clare Gillett 1 NEWBURY STREET LONDON EC1A 7HU

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Visualisation artwork for Metrolink Phase 3 to include designated stops and major points along the 6 proposed routes.

EXPRESSIONS ON INTEREST

Bankside House, 107-112 Leadenhall Street, London EC3A 4AH

Email: aj@consensushr.co.uk Tel: 020 7891 2429 Fax: 020 7891 2468

AMCLITECTURAL RECRUITMENT SPECIALISTS CONSENSUS

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Greater Manchester Passenger Transport Executive (GMPTE) is seeking expressions of interest from suitably qualified and experienced contractors who wish to be considered for inclusion on a select list for the above project.

The scheme comprises producing still images and photographic montages of designated points, including proposed stop locations, along the routes included in the Metrolink Phase 3 project. This will be a before and after representation of the area to consider the effects of Metrolink on the location.

The proposed routes include Oldham and Rochdale, Ashton-Under-Lyne, East Didsbury and Stockport, South Manchester and Manchester Airport, the Trafford Centre extension and the Lowry Spur. The project may also involve similar requirements for the proposed Metrolink depot near to the Trafford Bar/Old Trafford stop.

The chosen locations for the photomontage work will include representations of town centre stops, major structures, street works and mitigation measures. Approximately 30 locations are anticipated. Due to this variety in location, the project will require experience in visualisations within the urban realm and more rural areas and would include the representation of landscapes, street scenes, transportation infrastructure and architecture.

The completed visual artwork will be used for public relation purposes, displayed at exhibitions and public meetings. It may also be used by local authorities and for environmental impact assessment, along with many other purposes.

Applicants must demonstrate their ability to undertake the above works and at a reasonable cost. Those applying must include the following:

- (a) The names and addresses of three technical referees who are able to provide a reference of the applicant's competence in relation to this type of work. Details of particular projects undertaken by the applicant should form part of these references.
- (b) An example of a Metrolink location to illustrate the techniques proposed.

Further information, including existing publicity material may be obtained by contacting Steve Burns or Jody Lewis on 0161 242 6789.

Applicants should ensure that their written application reaches the address below. Close of business on Friday 19th April 2002.

The Deputy Director General GMPTE 9 Portland Street Piccadilly Gardens Manchester M60 1HX



Susie Cliff Tel 020 7505 6803 Fax 020 7505 6750 e-mail: susie.cliff@construct.emap.com

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Schools Building Design Unit (SBDU) in the Department for Education and Skills is a multidisciplinary group of building professionals experienced in developing policy and advising Ministers on schools design. We also produce and disseminate good practice design guidance nationally. Visit our website at: **www.teachernet.gov.uk/schoolbuildings**

We are looking for enthusiastic and committed building professionals with experience in aspects of schools design, including environmental issues and costs. Candidates for the HPTO posts should have the minimum of a degree in a relevant building profession, for the SPTO posts the minimum of final professional qualification is expected. Up to four posts are immediately available for the right people depending on experience and qualifications. Other posts could be filled within 6 months to a year from a small waiting list.

Specific areas of work will include: capacity assessment methodology; Special Educational Needs; disseminating Department school building policy; and advising on and assessing Asset Management Plans, building procurement and funding methods, including PFI.

Applications are invited from those seeking a permanent position on either a full-time, part-time or job-share basis or who wish to be considered for secondment for a fixed period.

Application form and information pack available from the Recruitment Team or telephone 01928 794704 (during office hours) or e-mail, stating full postal mailing address to: recruitment.team@dfes.gsi.gov.uk Alternatively, the vacancy details and application form can be downland if you visit our website www.dfes.gov.uk/recruitment

The closing date for receipt of completed application forms is Friday 19th April 2002.

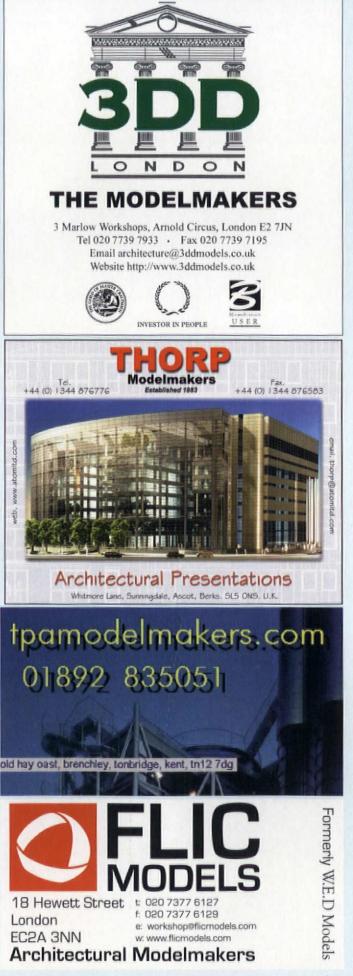
Equal Opportunities - We are committed to recruiting a more diverse workforce that reflects the people we serve. We are committed to making reasonable adjustments for people with disabilities and using a variety of flexible working arrangements to enable all staff to balance their work with their private lives. We recruit people based on merit and open and fair completion. All applicants are treated equally regardless of age, disability, ethnic origin, gender, marital status, religion or sexual orientation. The Department is under-represented by ethnic minorities, women and people with disabilities at all grades, and we positively encourage applications from these groups.

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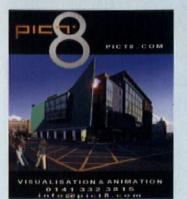


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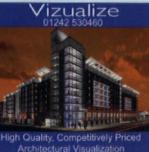


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28 March 2002

archicharades



Champagne goes to Tristam Spicer, Geoff Buckley and Kevin McHale of Kevin Doonan Architect who jointly identified David Chipperfield from the clues in our 'archicharades' competition last week. Can you identify the famous architect from this week's clues? Send your answers on a postcard please, by first thing Tuesday morning, to: AJ Astragal, 151 Rosebery Avenue, London EC1R 4GB, or fax your entry on O2O 7505 6701. The first correct entry pulled out of the hat wins a bottle of bubbly.

Bilbao calling

hile The Architectural Review embraced European Modernism at a well-attended conference at the RIBA in London, an international event with a rather different flavour took place in the Bilbao Guggenheim. Arata Isozaki, Jean Nouvel and Wolf Prix discussed the place of the Guggenheim and its architect, Frank Gehry, in the context of international architecture and indeed their own work. A full house of Spanish architects heard simultaneous translations as French, Spanish, German and English were used, under the chairmanship of former AJ editor Paul Finch. All present were fans, at least to some extent, of the Gehry building. What they had learned from it (and him) differed. For Wolf Prix the experience of taking part in the design competition 10 years ago had left him with one very clear message: when you do a model for a competition, make sure yours is bigger than anyone else's. It turned out that Gehry's attempt to make him give up smoking had been only partially successful: he graduated from cigarettes to very expensive cigars.

Next in line

Bilbao is still pursuing the architectural route as an outward and visible sign of its regeneration ambitions. Isozaki is designing residential towers that are causing trouble locally, even though the city is far from low-rise. Now **Rafael Moneo** is designing a new building to go close to the Guggenheim; other superstars at work in the city are **Robert Stern** and **Cesar Pelli**. If Manhattan is coming to Bilbao, any chance of London getting a look-in? **Michael Wilford's** heroic interchange, upgrading the existing central station, fell victim to political machinations, though you never know your luck. Foster's metro, by the way, looks superb.

Jorn again

select group gathered for the London launch of **Richard Weston's** magnificent Utzon tome, surely in line for every architectural book award going. Publisher Torsten Bløndal was in attendance, a perfectionist who pulped an initial run of the book because the scans did not meet his exacting standards. So too was Utzon's principal assistant, Mogens Prip-Buus - of whom Utzon always says 'he knows more about me than I do'; Françoise Fromonot, author of the best previous book on Utzon; and John Pardey, who has made many new drawings for the book. The Utzon roadshow was on parade again the following evening in the Welsh School of Architecture's main lecture theatre, where Dr David Grant, the university's new vicechancellor, introduced Weston to a packed house of 170. A lavish reception took place against the backdrop of an exhibition of houses by Utzon, Pierre d'Avoine, and the School's own staff and visiting tutors. Arup's Cardiff office sponsored the reception; in view of the delicate relationship

between Utzon and Arup, a nice touch.

Inside out

he relationship between architecture and fit-out architecture is always fascinating. For example, research consultant cityoffices.net has produced statistics showing that Gensler, the world's biggest architect, has achieved significant leadership in the fit-out market in central London, achieving 17 per cent market share over the past three years. Interestingly, it emerges that 19 per cent of the work undertaken was on buildings designed by the practice itself. There must be hope for all here.

Surrey fringe

alton-on-Thames might not sound the most likely venue for a contemporary architecture show, but that is just what the Riverhouse, in Manor Road, is staging until 14 April. Among the architects are Foster, Alsop and Jiricna and, in the mix of media, there are screenprints by Langlands & Bell and paintings by Carl Laubin. It is good to see the model of Metaphor's poetic proposal for a Jewish memorial in Mannheim - and don't miss sketches in the cafe downstairs by John Pardey (it's that man again).

Knight fever

S ir Nicholas Grimshaw held a splendid reception at NGP's London office to celebrate his honour and the health of the practice generally. Excellent refreshments made for a lively occasion, with many faces from the near and distant past turning out for the evening, including clients and other professionals. This sort of thing should happen more often!

Down to Rio

f there is to be another Guggenheim Museum anywhere in the world, you could choose worse places than Rio de Janeiro. The Brazil exhibition currently at the Frank Lloyd Wright museum of modern art, whose interior is painted black for the occasion, might give us a clue as to a potential architect down Rio way: **M Jean Nouvel**. More cigars!

Airborne fun

y old friend Tyler Brûlé, founder of Wallpaper, is having fun in pastures new. Swissair, the erstwhile national carrier, is using his services as part of its phoenix-like attempt to emerge from bankruptcy to became a player again, offering advice on things like avoiding navy blue for livery, and avoiding leather folders for the wine lists. His gualifications, according to an amusing feature in the Independent on Sunday, include the fact that he bought a Rolex watch at a very early age, following a teenage summer painting boats. Air travel, it becomes clear, is all about fun. Example: 'There'll be surprises. Not flight attendants in kooky makeup jumping out from behind seats, but we might have a cigar room in the belly of the plane or something.' Oh my God. Give me Easyjet.



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of steel in the masts needed a heavy-duty coating system with a high-quality cosmetic finish. The system selected was Interzinc 52HS, a zinc-rich epoxy primer, Intercure 384, a high solids, Iow VOC epoxy, rapid-cure micaceous iron oxide intermediate coat, and Interlac 658, a grey durable urethane modified finish coat.

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Halifax' latest call centre in Belfast is being protected by FendorHansen, which supplied and installed its Fineline fire-resistant glazing system to create the large central glass atrium. Combined with 6mm Pyrolithic glass, Fineline screens offer minimum slightlines and 30minutes integrity fire performance.

LIQUID PLASTICS

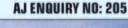
A highly advanced, hygienic wall and ceiling coating manufactured by Liquid Plastics has been specified for application at one of the most extensive spa and health complexes in the UK.



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MENDIGER BASALT

Mendiger Basalt Lava was used to build Ortner & Ortner's Ludwig Museum of Modern Art in Vienna, for the facade, the curved roof and the inside walls. The outer wall is 500mm thick, with a 10mm air gap behind the shell of Basalt slabs. It is a





homage to this volcanic material, chosen for its beauty and resilience. For Basalt Products, tel 020 7407 1157, fax 020 7407 5364 or e-mail info@lavastonedesigns.co.uk

RATIONEL WINDOWS (UK)



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Nine individual, four-storey blocks of apartments have been constructed at Finchley Road in Hampstead, London. As the need was for high quality, attractive and architecturally acceptable windows and doors, it was no surprise when the Domus range from Rationel Windows (UK) was chosen for the first three storeys.

KINGSPAN



Kingspan Koolduct, the latest in air ducting technology, is helping to maintain the highest standards of comfort at the prestigious Holyrood Hotel in Edinburgh. Approximately 600m² of Koolduct was installed by Ventrac, working in close liaison with M&E consultant Lateral Technologies & Solutions. It specified the revolutionary pre-insulated ducting principally because of severe limitation of space.



AJ ENQUIRY NO: 208

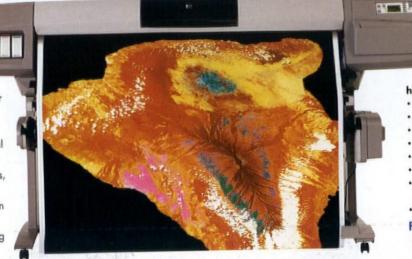
Reynaers is proud to release its new corporate binder Creative Solutions in Aluminium & Glass – edition 2. The publication is aimed at architects and specifiers throughout the fenestration industry. It provides information on a range of products including curtain walling and windows and doors, including the new 'Concept Series', a range of thermally efficient systems designed to comply with Document L.

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