DAYLIGHT & ARCHITECTURE
MAGAZINE BY VELUX

WINTER 2008 ISSUE 10 **RE-NEW** 10 EURO

WINTER 2008 ISSUE 10 **RE-NEW** 10 EURO **DAYLIGHT & ARCHITECTURE** MAGAZINE BY VELUX

VELUX®

VELUX EDITORIAL

RE-NEW

Cities are like living organisms. They remain alive by continually renewing themselves. Just as the human body's lifespan exceeds that of its individual cells, a town generally outlives its individual houses defensive walls and factories. Buildings age over time. They become unusable or no longer meet increasing expectations about comfort and space. Sometimes they are simply not impressive enough for new users or functions. These circumstances make the desire for something new only too understandable.

But there are good reasons for not acceding to calls for renewal invariably and unthinkingly.

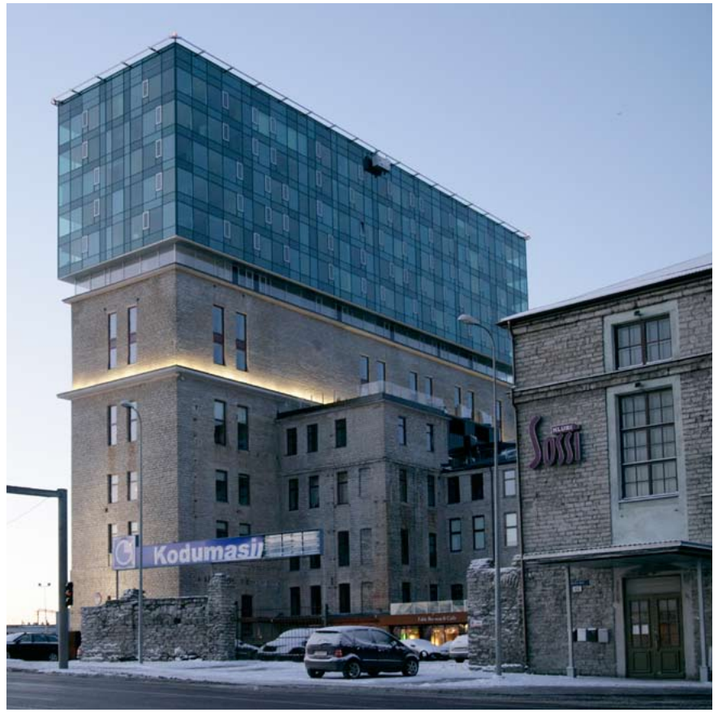
Renovating an old building uses up to two thirds less material than an equivalent new building – saving the equivalent amount of energy for producing and transporting materials, as Thomas Lemken writes in his article for Daylight&Architecture. Many old buildings additionally possess unrivalled construction qualities – whether a "bonus" in terms of room height and width or details and decorations in the workmanship no longer found in new buildings. Often, however, these aesthetic qualities are hidden, and it takes the work of an architect to bring them to light. In his article "More space, more light" in this issue, Hubertus Adam describes how this can happen. However, existing buildings in our cities and villages also represent an unparalleled challenge. Badly insulated old buildings are among humanity's greatest energy wasters. While only a percentage of buildings in Central Europe are renewed annually, regulators – as David Strong demonstrates in his article – primarily have new buildings in mind when establishing energy efficiency standards.

In the current issue of Daylight & Architecture we look at all these facets of renovating existing buildings: their spatial qualities and their often hidden beauty, their equally well-hidden dormant energy and material resources, and the question of how much renewal is economically necessary, and of how much of it is ecologically justifiable. Our authors have also looked into how the changing expectations of end users – for instance, a wish for more daylight - favour the renewal of buildings. VELUX was actually created as a result of this desire for renewal. More than 65 years ago - in 1941 - the Danish engineer Villum Kann Rasmussen was asked by an architect office to develop a roof window for a small school building in Denmark. He set out to create a roof window that was as good as the best vertical window in every respect. He succeeded - and invented the first modern roof window - as well as he introduced the idea of utilising the volumes under the sloping roof.

In this issue the Danish photographer Henrik Kam has followed the routes of historic steam ships from Liverpool to Rotterdam via New York, documenting renewal and decay, progress and stagnation. All three harbour cities have big plans for the future involving converting industrial brownfield sites, run-down working-class areas and other social problem zones into desirable residential areas. Often this leads to a dramatic coexistence of old and new, with glazed tower blocks rising over derelict industrial ruins, or valuable lofts next to boarded-up workers' houses marked down for demolition. This coexistence, however, is only a natural expression of a natural renewal – cell for cell and house for house – of our cities. In the thousands of years in which cities have existed, this process has not lost its fascination.

Enjoy the reading!

WINTER 2008
ISSUE 10
CONTENTS



NOW

The things that make architecture tick: events, competitions and selected new developments from the world of daylighting.

PHOTO BY RUEDI WALTI

Gentle light reflections enliven the vault of St. Augustin church in Heilbronn. The new ceiling consists of filigree, screwed-on steel tubes and translucent polycarbonate connecting plates.

ARTIFICIAL MATERIAL TENT IN CHURCH NAVE

Augustin church is hardly recognisable after its conversion: Pfeifer Kuhn Architekten re-interpreted the vaulted roof with the materials of the industrial age.

The generally expected atmosphere within a sacred building is weighty, substantial and solemn – not at all like an industrial building or a tent. The conversion of St. Augustine's church in Heilbronn by Pfeifer Kuhn Architekten resembles both, exploding established visual expectations: a filigree lattice shell of steel pipes, almost makeshift in appearance, with simple, screwed nodes encloses the interior of the historic nave. On the outside, it is covered with translucent polycarbonate web plates which gently disperse the light that falls through the church windows. At the same time, the church's original form is recreated: St. Augustine's was built in 1926 by architect Hans Herkommer as a tall natural stone building with a saddle roof. The steel-reinforced concrete roof construction was hidden behind an inner, vaulted wooden framework shell. However, this was lost in a fire during the Second World War. In the post-war years the church was rebuilt without the wooden vaulting. Later, the south-facing nave windows were walled up, to prevent the church from becoming overheated in summer.

Since its redesign, the church is filled with light once more. The south windows have been reopened, and the polycarbonate inner shell disperses the daylight evenly through the space. At the same time, reflections from the cylindrical pendant lights hung in the nave create the "glittering heavens". The gap between the old and new shells also serves as a heat-insulating air cushion. While the warmed air can be directed out of this gap during the summer, in winter the air warmed by the sun can be used to heat the church. It is sucked in by a ventilation system and blown into the interior beneath the polycarbonate vaulting.

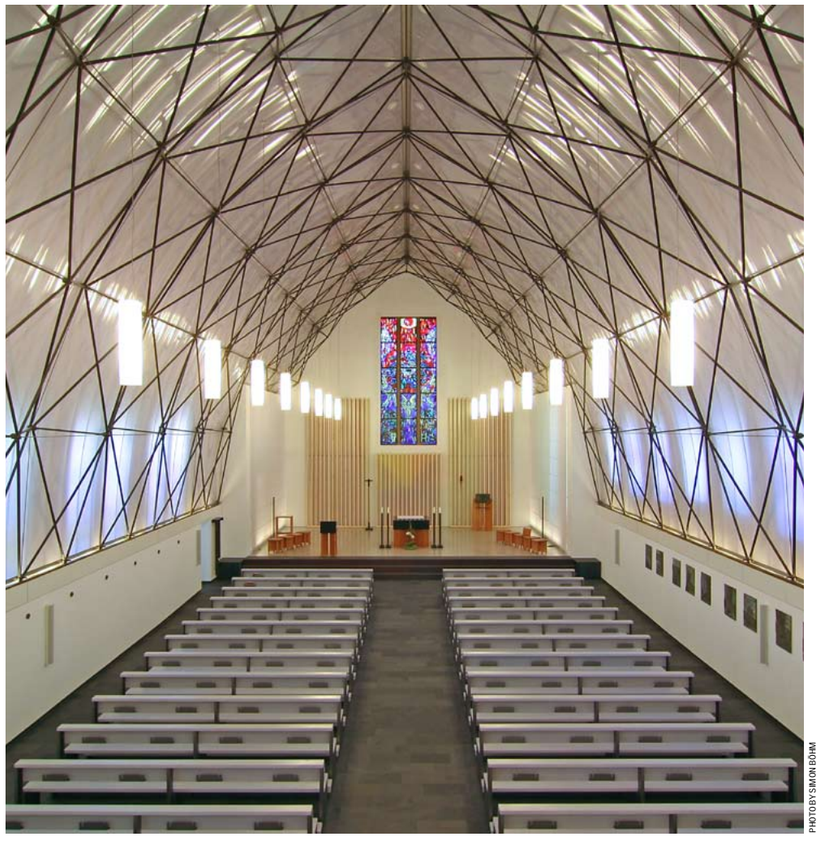


PHOTO BY SIMON BÖHM

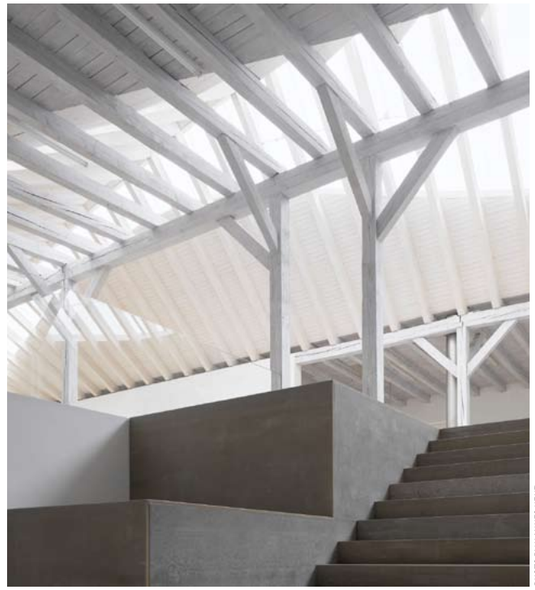


PHOTO BY HANNES HENZ

LIGHT WAVES IN THE BEAMS

The Rapperswil-Jona armoury, built in 1904 and now redesigned by Isa Stürm Urs Wolf Architekten of Zurich, is an unpretentious functional building with Alpine elements: the dark-painted façades of the two-storey building are interrupted by partly cross-barred windows surrounded by broad white trim.

14 large doors in the entrance façade open on to the front yard, showing the building's previous use: for decades it served as a store for military equipment, then as a workshop for local craft businesses. For the past few months it has housed around 4,000 objects belonging to Peter and Elisabeth Bossard's art collection.

In 2006, out of three entrants, Isa Stürm and Urs Wolf won a closed competition for the contract to redesign the storage building as an art museum. The project was named 'the whale' by the clients. A look at the unusual roofscape tells you why: two titanium zinc-clad 'wave peaks' curve upwards from the very slightly angled saddle roof. These are pierced by polycarbonate skylight bands which are also wave-shaped. The sense, purpose and effect on the interior of this intervention are shown most clearly on the armory's first floor, the exhibition level. Here, 42 wooden supports divide the extensive space. The architects consciously avoided creating a neutral, column-free 'white cube': the artworks have to come to terms with the existing builidng, engaging in a dialogue with it the other contents of the space. To light the exhibition space adequately, the architects raised the roof truss in the centre of the space and extended some of the rafters extended, so that gently curved lines are created on vertical and horizontal surfaces. A continuous annular, thin concrete slab absorbs the additional vertical shear forces created by this.

The reason given by Isa Stürm and Urs Wolf for the characteristic wave-shaped skylights is simple but enlightening: "It creates a natural play of light and creates possibilities for showing artworks in different lighting and spatial moods and modulating the light." To show the interplay between light and art to best advantage, the architects reduced the existing interior color and material contrast caused by the wood: the wood construction was painted white and a sand-colored anhydrite floor was applied to the old matchboard planks.

PHOTO BY ANDY RYAN

PHILOSOPHER'S LIGHT

Ludwig Wittgenstein's "Bermerkungen über die Farben" (Remarks on Colour), one of the famous philosopher's late works, was the inspiration for the new stairwell design at the Department of Philosophy at New York University. The new department building is a six-storey brick building dating from 1890 in the Greenwich Village district. Its large windows and position on a street corner mean that it was made for experimenting with daylight, and this was precisely what Stephen Holl, assigned to redesign it, did: a layer of prismatic film on the south-facing windows breaks the light into rainbow-colored stripes that migrate through the stairwell as the sun changes position. The shadows cast by the irregularly perforated steel banisters also contribute to the varied lighting moods in this space. The architects liken the stairwell to a "backbone of light" that connects the offices, the library and the 120-person lecture theatre on the ground floor. According to the architects, the stairwell "not only uses light as a metaphor for learning, but is also a practical space for interaction, where students and professors can meet freely on the broad landings." In addition to the large windows, the stairwell is lighted by a skylight. While this "backbone" for the building is kept almost entirely white, down to the painted brick walls, the offices and seminar rooms in the upper stories – in another homage to Wittgenstein's book – were decorated with various shades and textures in black and white.

IT'S THE EXISTING STOCK, STUPID!

By David Strong

The British government is getting serious about the energy efficiency of buildings: By 2016, all new-built homes in the UK have to be 'zero-carbon', with their CO_2 emissions 100 % offset by surplus renewable energy generated on site. While other European may take similar steps soon, the fixation on new build could easily distract public attention (and public funding) from an even more urgent need: vastly and quickly improving the energy efficiency of the existing housing stock.

In 2006 the UK Government declared an ambitious plan to ensure all new homes are zero carbon by 2016. New non-domestic buildings will have to be zero carbon by 2019.

The impact of this plan has been felt throughout the property and construction industry, and the drive towards zero carbon has already had a powerful effect in galvanising the housebuilding and property development community, and in stimulating innovation. I am not sure that would have happened without such a strong legislative and policy initiative.

Of course the huge surge in interest in sustainable building is good news. It is highly gratifying to see sustainability finally reaching the top of the political agenda. The emphasis being put by the UK Government on more energy-efficient buildings, and greener communities, is a truly welcome and encouraging sign.

However, those of us who are passionate about delivering a genuinely sustainable built environment currently face a real dilemma.

Here's our problem: there is so much more to delivering exemplary built environments than zero carbon. In fact, there is even a danger that a fixation on zero carbon may result in highly perverse outcomes and deliver seriously damaging and unintended consequences in terms of sustainability – with the pursuit of the 'best' becoming the enemy of the good.

The UK Government wants to see all new homes built to the highest level (Level 6) of the Code for Sustainable Homes by 2016. Allowing for the time required to design, specify and fund a development of Code Level 6 new homes by 2016 means housebuilders and designers having all the answers to the zero carbon challenge by about 2012 – just four years from now. Housebuilders working in the social housing sector are having to move even faster, producing Code Level 3 or 4 homes already.

The risk that is now being recognised is that the single-minded scramble to design and build Level 6 homes gives out the message that this is the highest ambition and most worthy outcome we should aim for. It's not. If we end up with 'zero carbon' Level 6 homes that rely on unproven or risky technologies, are uneconomic to maintain, are built on flood plains, overheat in summer, have poor acoustic performance, poor indoor air quality or other unintended consequences, then we have created a generation of homes unfit for people. This cannot be called 'genuine sustainability'.

BEYOND ZERO CARBON: WHY NEW BUILD ISN'T EVERYTHING

When it comes to cutting carbon emissions from the building stock, a three-pronged approach is necessary. The first priority is de-carbonising the electricity supply grid. The second is all about promoting low and zero carbon new build. And the third requires a coordinated national strategy to radically improve the performance of our existing buildings.

The Renewable Energy Strategy announced by the British Government this summer is great news for the first priority – it takes us an exciting next step towards a truly low-carbon UK. Initiatives such as the Code for Sustainable Homes and targets for zero carbon new buildings are already going some way towards addressing the second priority.

But what about the third part of the package? Sadly, we still do not have a coherent and effective strategy to deal with the huge energy wastage in the existing building stock.

Why does this matter so much? Well, consider that over 70 % of the UK's 2050 building stock has already been built. The vast majority of the buildings we will still be using in 20 years' time lack sufficient insulation, heating controls or other measures to save energy – and that puts us among the worst performing countries in Europe.

This issue has been identified time and again as the single most important and potentially effective area where UK carbon emissions could be slashed. All experts and informed commentators are united – improving the energy efficiency of our existing building stock is the cheapest, cleanest and safest way to deliver CO_2 savings. To paraphrase Bill Clinton, "It's the existing stock, stupid."

The problem with existing buildings is simple; they underperform in relation to current building standards because they were designed and built at a time when sustainability and energy efficiency were not the imperatives that they are today.

And while global warming is a key driver, we must also not forget the more immediate benefits of improved energy efficiency in the existing housing stock – particularly the way it can help us tackle fuel poverty, a longstanding problem for vulnerable groups in our society, especially the elderly.

Less is often more: Where cities are shrinking as in east Germany, suitable uses must be found for the outsized old buildings. The Stefan Forster office achieved a pioneering success in Leinefelde in Thüringen, winning the "World Habitat Award" among others.

Fuel poverty is not easily dealt with because it can be caused by a complex mix of economic and social factors. However, one of the most important contributing factors to fuel poverty is the energy inefficiency of the housing stock. Too many people still have to spend considerably more than 10 % of their disposable income on heat – and some have to decide between heating and eating. Following recent energy price increases it has been estimated that up to 6 million people in the UK may be in fuel poverty.

A significant and long term programme of improvements to the energy efficiency of the existing stock (supplemented by a programme of appropriate renewable energy installations) will, therefore, deliver considerable social benefits as well as contributing to the Government's carbon emissions reduction target.

There is considerable consensus on what needs to be done, especially now, as a consequence of the EU Energy Performance of Building Directive, we have a fully operational energy rating and certification scheme in place that includes identification of cost-effective energy efficiency measures for all UK buildings.

SIMPLE MEASURES ARE OFTEN THE BEST

At the technical level for example, the best improvements for energy inefficient buildings are generally very simple and risk free and are judged on their cost effectiveness and accessibility. These include better insulation (loft, walls, floors, tanks and pipes), draught proofing, secondary and double glazing, A-rated boilers and appliances, improved heating systems, enhanced control systems and efficient lighting. Some technologies such as solar hot water systems and ground source heat pumps can also help in the right places, and community-wide CHP systems offer the opportunity for highly cost effective improvements on a larger scale.

Similarly, the favoured ways to encourage a green refurbishment and retrofit of existing buildings are already well known. We're talking about a package of measures, mainly regulatory and financial, coupled with effective information campaigns, to act as an incentive to action.

The options include tax changes to encourage more refurbishment, more capital allowances and various tax-neutral rebates associated with stamp duty, council tax, business rates or corporation tax to reward the implementation of improvement measures recommended in an Energy Performance Certificate (EPC) or Display Energy Certificate (DEC).

It's recommended that the next revision of the EU Energy Performance of Buildings Directive should require DEC's to be displayed in all commercial buildings such as large supermarkets and hotels, since this will help to stimulate energy efficiency improvements in the service sector.

What is also needed are Building Regulations which ensure that whenever a building is being extended, or undergoing major refurbishment, the developer should have a mandatory obligation to upgrade the energy efficiency of the existing building.

In the meantime, at Inbuilt we work together with our clients to find natural solutions to reduce our dependence on energy-intensive systems. There are so many opportunities offered by nature to ventilate, heat, cool and illuminate our buildings, and cost savings to be made by designing out unnecessary technical complexity in both newbuild and refurbishment projects.

We focus on keeping the specification of energy plant and equipment as simple as possible. Designing-out technical complexity is a real challenge, but in our experience avoiding unmanageable complexity is often the key to achieving comfort conditions, coupled with economic operating costs and low carbon emissions.

Similarly, we find that the 'real world' performance of buildings often differs greatly to modelled predications due to the way people act. Clear and conspicuous real-time information within the building on both carbon emissions and running costs is crucial to make people take action to reduce their consumption.

Whatever the challenges, we must not be distracted from the urgency of reducing carbon emissions from the existing building stock, and of securing investment and planning consents for large scale renewable energy systems. In terms of money invested per tonne of carbon saved, both of these objectives will provide a much greater and faster return than making all new buildings 'zero carbon'.

Our Government has shown strong leadership in its development of policies for new homes, schools and commercial buildings. Now is the time to get moving on implementing a bold strategy for the existing stock.

Reduction of a residential block in Leinefelde, Germany

Architects:	Stefan Forster Architekten, Frankfurt/Main
Location:	Goethestraße 25-31, Leinefelde
Floor space:	1580 m²
Completion date:	2003
Client:	LWG, Leinefelde

Fewer (and larger) apartments but more private space outdoors; Stefan Forster Architekten also applied this principle to create the eye-catching 'Haus 4" in Leinefelde. The height of the building was reduced from five to three and a half storeys, the entrances were moved to the courtyard side and the ground plans were completely revised. The apartments at the top were given large roof terraces while the others received balconies.

City villas in Leinefelde-Worbis, Germany

Architects:	Stefan Forster Architekten, Frankfurt/Main
Location:	Einsteinstraße 11–25, Leinefelde
Floor space:	4200 m²
Completion date:	2004
Client:	WVL Wohnungsbau-Verwaltungs-GmbH, Leinefelde

The 180 metre-long residential block in Leinefelde could no longer be used to good purpose. Stefan Forster Architekten therefore broke it down into eight individual city villas, each with four floors. 90 apartments were the victims of this cosmetic surgery. The remaining ones, however, are not only of a much higher quality but are also more spacious than before. They are therefore in line with the motto of the architects: 'Quality through shrinking'.

PHOTOS: STEFAN FORSTER ARCHITEKTEN/JEAN-LUC VALENTIN

Fort Dunlop, Birmingham, Great Britain

Architects:	shedkm architects, Liverpool
Location:	Fort Parkway, Birmingham
Useful area:	31,000 m²
Completion date:	2004
Client:	Urban Splash, Manchester

The former tyre warehouse of the manufacturer Dunlop was part of a building complex which was also called "Tyre Town". It stood empty for 20 years before the investor Urban Splash created the largest office building outside London ever financed by an investor. A hotel with 100 rooms is accommodated in a narrow, quadratic extension building.

PHOTO: RICHARD COOPER / PHOTOFLEX

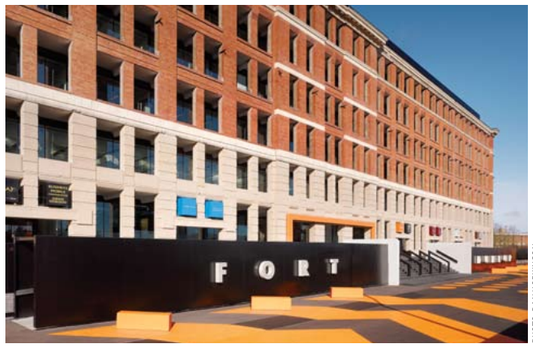


PHOTO: DAN HOPKINSON

PHOTO: DAN HOPKINSON

Lister Mills, Bradford/Yorkshire, Great Britain

Architects:	David Morley Architects, London
Location:	Lilycroft Road, Bradford
Useful area:	13,500 m²
Completion date:	2013 (planned)
Client:	Urban Splash, Manchester

When the world's once largest silk weaving mill in Bradford was completed, the British newspaper, the Times, described it with the words "as breathtaking as Versailles". Covering an area of almost 10 hectares and built in 1873, the building complex is currently being converted into apartments, offices and shops by Urban Splash. The roof-mounted structures with 24 maisonette apartments were inspired by spools of thread such as those used in silk weaving.

PHOTO: RICHARD COOPER / PHOTOFLEX

RENDERING: CGI/VISUAL

RENDERING: CGI/VISUAL

10 tips for existing stock improvements

The perfect package of improvements to any building, residential or commercial, clearly depends on its age, design, use etc. But Inbuilt has the following advice for anyone who wants simple and cost effective ways to tackle wasted emissions:

1. *Inclusion is mightier than innovation* – Existing stock means there are tenants and occupants who must be consulted from the outset. No amount of imposed techno wizardry will create a sustainable future if the users feel it is imposed.

2. *Look around you and join the carbon dots* – There are great ways to link existing stock with local low and zero carbon new build developments, which can help make technologies like CHP viable. Local Strategic Partnerships and Regional Development Agencies must play a pivotal role to maximize co-ordination and blending of complementary energy requirements.

3. *Keep your eyes on the horizon* – Focusing too much on immediate measures and targets can result in short-term fixes that actually reduce the viability of greater improvements later on. For example, a campaign to install gas condensing boilers during 2008 when a waste heat main is due to be available in 2010 could make later upgrades unlikely for the next 10–15 years.

4. *Together we stand, divided we fall* – True low carbon refurbishment will require both advanced fabric improvements and low/zero carbon technologies. The installation and commissioning of these systems can be disruptive so careful programming of works at street and estate level is key to reduce capital costs and foster a community spirit of 'short term pain for long term gain'.

5. *Minimise to maximize* – While bolt-on renewable technologies may be a public statement of eco credentials they should be seen as the final stage in any carbon reduction project. Improving the building fabric to reduce heat loss and air leakage is of primary importance to minimize any fossil fuels used and maximize the financial case for renewables.

6. *There's more to life than walls and boilers* – The way in which a building's immediate environment is treated can have significant energy implications. For example, returning parking areas back to greenery with permeable surfaces and generous cycle stores can provide the incentive for people to reduce car usage. Combine this with building energy monitoring systems that also relay real-time local public transport information and people's carbon literacy will be increased.

7. *Think beyond the immediate solution* – Treating improvement techniques in isolation increases the danger of unwanted side effects. An example of this is using insulated dry lining in solid brick walled dwellings to reduce heat loss. The insulation will unfortunately also isolate the thermal mass of the wall, reducing its potential to help minimize summertime overheating if combined with effective shading and night time ventilation.

8. *Remember older buildings are very different animals* – Traditional construction techniques and materials rely on vapour permeability to absorb and control humidity levels. Insensitive positioning of modern high performance materials can inadvertently accelerate structural damage.

9. *Money makes the world go round* – Whether we like it or not, money drives our society. Without clear financial incentives such as tax rebates, zero interest loans and guaranteed future energy prices, improvement of the existing stock will be perceived by many as Government targeting the hard-pressed individual rather than the more wealthy industrial giants.

10. *Who turned out the light?* – Ultimately real world performance of buildings often differs greatly to modelled predications due to the way people act. Clear and unavoidable real-time information within the building on both carbon emissions and running costs is crucial to make people take action to reduce their consumption.

Bio-towers in Lauchhammer, Germany

Client:	Biotürme Lauchhammer gGmbH, Lauchhammer
Architects:	Zimmermann und Partner, Cottbus
Location:	Lauchhammer
Completion date:	2008

In the so-called "bio-towers" in Lauchhammer, Thüringen, the wastewater of a coking plant used to be purified. When the factory was shut down in 1991, the towers were the only part of the industrial installation that escaped demolition. The 22 metre-high stacks, combined to form six groups of four, have been restored in line with the requirements for protected historic buildings and a glass viewing cubicle has been added. In future, they are to be used as a venue for events.

PHOTOS: STEFFEN RASCHE (1), SCHÜTZE/BILDARCHIV MONHEIM (2)

OF STARS AND COLOURS

The Code for Sustainable Homes measures the sustainability of a new home against nine categories of sustainable design: Energy and CO_2 Emissions, Pollution, Water, Heath and Wellbeing, Materials, Management, Surface Water Run-off, Ecology and Waste. The Code uses a 1 to 6 star rating system to communicate both the rating in each category and the overall sustainability performance of the entire home. One star (★) is the entry level – above the level of the Building Regulations; and six stars (★★★★★★) is the highest level – reflecting exemplar development in sustainability terms. Minimum standards exist for a number of categories – these must be achieved to gain a one star (★) sustainability rating. Energy efficiency and water efficiency categories also have minimum standards that must be achieved at every level of the Code, recognising their importance to the sustainability of any home. All new social housing receiving public funding is requested to achieve a 3 star rating (this will change to 4 in 2010). Private housebuilders are required to have dwellings assessed against the code but there is no minimum requirement.

Energy Performance Certificates (EPC´s) have become mandatory for all buildings in Great Britain in October 2008. They must be issued whenever a building is bought, sold or rented. The certificate records how energy efficient a property is as a building and provides A-G ratings (usually shown also in coloured bars ranging from red to green). These are similar to the labels now provided with domestic appliances such as refrigerators and washing machines. An EPC is always accompanied by a recommendation report that lists cost effective and other measures (such as low and zero carbon generating systems) to improve the energy rating. A second rating in the Energy Performance Certificate shows what could be achieved if all the recommendations were implemented.

Display Energy Certificates (DEC´s) are energy certificates for public buildings, which must be displayed to the public. They show the actual energy usage of a building, the Operational Rating, and help the public see the energy efficiency of a building. This is based on the energy consumption of the building as recorded by gas, electricity and other meters. A DEC is always accompanied by an Advisory Report that lists cost effective measures to improve the energy rating of the building. Currently, Display Energy Certificates are required for buildings with a total useful floor area over 1,000m² that are occupied by public authorities and institutions providing a public service to a large number of persons.

Renewable Energy Strategy: In 2007 the Member States of the EU agreed to a EU-wide target of 20% renewable energy by 2020 – including a binding 10% target for the transport sector. The UK share of this target will be to achieve 15% of its energy from renewables by 2020 (which is equivalent to almost a ten-fold increase from current levels). To implement this ambitious goal, the British government has announced it will publish a new Renewable Energy Strategy in spring 2009.

Dr David Strong is Chief Executive of Inbuilt, the UK's first major consultancy specialising exclusively in sustainable buildings, communities and construction. He was awarded the 2007 Sustainability Leadership Award and is the founder of the UK Green Building Council. www.inbuilt.co.uk

RE-USE OR NEW BEGIN NING

NEW YORK

ROTTERDAM

The time of the urban sprawl is not completely over but the interesting construction projects involving residential buildings have long been taking place in the inner cities again. Urban wasteland, deserted port areas, former factories, schools and administration buildings contain great potential for new residential space. But the question as to who will actually move into the old-new dwellings is lost sight of all too easily: Only a healthy mixture of dwelling sizes, age groups and social layers can really contribute to a sustained revival of the cities.

What mechanisms is urban renewal subject to and what forces affect it? Daylight & Architecture went into these questions in Liverpool, Rotterdam and New York. It became apparent that there were parallels to the current situation in the global economy: cities that place value on careful development and on cultural and social diversification are less able to shine with spectacular projects in boom times. But, in bad times, they are more resistant to crises.

Photography by Henrik Kam
Introduction by Jens Kvorning
Liverpool: Joseph Sharples
New York: Thérèse Balduzzi
Rotterdam: Anneke Bokern

Demolition and building from scratch or careful renovation of the existing structures? These are alternatives architects and urban planners have been faced with for as long as cities have existed. The Modernist dream of a radical new beginning has failed. Planning across Europe must now adopt new models which preserve the advantages of a traditional city – first and foremost its density and combination of functions – while making continual urban rejuvenation possible.

In the wake of the Great Fire of London in 1666, the educated elite of the day was quick to propose how London might be recreated as a quite different city, based on Late Renaissance and Early Baroque principles of bold hierarchisation, grand axes and focal points.

But the citizens of London fiercely rejected Wren's and Evelyn's proposals for remodelling the city, and instead demanded permission to rebuild their homes on their original, familiar plots. Certainly, this was a new London, in the sense that it was a city of new houses built after the fire, but the city's fundamental structure was re-used.

The same happened after the Second World War. Through the 1920s and 1930s, architects and town planners of the modernist era had been calling for a 'new beginning' that would do away with the traditional city of streets and squares. The heavy bombing of many of Europe's major cities had created a situation that held potential for a new beginning. But once again, resistance was intense from the citizens of the bombed cities, who called for the rebuilding of the city they knew. The city centres were so crucial as symbol and significance bearers that in only a few places was it possible to replace them with new structures. In the 1920s, Le Corbusier noted sarcastically on one of his sketches for the full renovation of central Paris: L'académie dit non – by which he conveyed his opinion that it was only a far too influential, conservative, academic group that failed to appreciate his visions. The forces that would actually carry the new era forward did appreciate his ideas – they just did not have a voice.

Le Corbusier versus traditionalism

But after the Second World War, Corbusier had to concede that his urban visions actually faced much wider rejection. During the project to rebuild St-Die, Corbusier notes that the plan was rejected by all groups: grand bourgeois, petit bourgeois, ouvrier, C.G.T, Socialistes, communiste etc.

In the 1960s, history repeated itself once again in the major redevelopment projects that were launched in almost all of Europe's major cities. These projects were based extensively on a pragmatic version of the Modernist urban vision, and met with the same resistance and the same demands to regenerate the existing districts instead.

There is thus a long-standing tradition for re-using urban structures. Houses are replaced and built-up areas renewed, while changes in the overall urban structure proceed slowly. Yet this observation holds true only for European cities – and their central districts at that. American cities, and especially Asian counterparts, are a different matter altogether. In the most radical instances there is a 'new beginning' – in the sense of a fundamental remodelling of central urban areas – every generation. The American and Asian cities are regarded by some as the ultimate and essential expression of the globalisation dynamic, and the European cities as expressing a culture that now lags behind.

If we are agreed that globalisation and the transition from the industrial society to the information society require great adaptability and mobility, it is then interesting to examine how this necessary adaptability is bound up with urban structures.

How cities can stay mobile

We find a remarkable picture of how this issue was explored in the past in Archigram's Moving Cities. Drawing on the notion of a set of powerful societal dynamics commanding perpetual changes, Archigram's solution was that the city would then have to be movable in order to adapt to those changes.

But for Archigram it is a constant body that relocates. A somewhat unfavourable interpretation of this, and one that would not have been appropriate in the 1960s, would be to say that here we have a vision of a society that organises itself in such a way that once the resources in a given location have been depleted – be they natural or experiential – then that society moves elsewhere and continues in the same way. With this, we are addressing another aspect of the current agenda. Certainly, adaptation and capacity for change are important when it comes to cities, but stewardship of our natural and cultural resources is crucial for our ability to survive.

And what approach to stewardship of our cities and edifices would meet the two-fold requirements of globalisation and resource scarcity – and is it even possible to satisfy the requirement for adaptation and resource awareness at the same time?

We can start by asking the question: what kind of urban structures can most readily adopt changes?

Modernism invoked an emancipatory principle where the concern was not only to liberate mankind, but also the architecture and the city. The zoned city – with home, work, recreation in each its designated area – was seen as the answer to this requirement, since each of the various functions could then evolve freely and thus optimally according to their respective logic. What we find today is that these specialised urban zones are intensely static and find it difficult to absorb changes and especially new combinations of activities. They determine and retain certain ways and rhythms of everyday life.

If we look at some of the built-up districts, we see a picture in which residential and various commercial and cultural functions are closely interwoven, and where shifts occur continually while new interactions arise between changing resident mixes and changing commercial and cultural functions. This gives these

neighbourhoods great cultural and social dynamism and a high degree of adaptability to new conditions.

On the other hand, if we go elsewhere in the built-up city and look at the major residential redevelopment projects, we find that once the redevelopment site achieves critical mass, it begins to act just as homogenisingly and statically as the residential districts of the outer city areas.

If we then address the other main question, that is, how to deal with the necessity of a far greater resource awareness and reduced energy consumption, then an array of different answers will crop up, but behind their myriad differences, there will still be some agreement and main positions.

Many will agree that urban density is a decisive parameter. This density means that we can reduce private vehicle traffic and support modes of public transport, cycling and pedestrian traffic.

But the energy performance of buildings also means a great deal. This is why we are witnessing so many projects proposing to build brand new, high-density cities with energy-efficient buildings in response to the challenges we face.

Does this then point to a new-wave new beginning or a new orientation of re-use?

In fact a generalised response to that question is not meaningful. If we look at the rapidly growing Asian cities, we find that new cities are actually being built all the time, in which case re-use is again not meaningful except in the sense of preserving certain cultural heritage assets during the intense remodelling process.

But if we concentrate on the European cities, the situation looks quite different. Here new urban development is so limited relative to the size of the cities, that the pragmatic answer to our two-fold challenge – the dynamics of globalisation and resource and climate issues – must necessarily involve re-use – that is, getting what are already the developed parts of the cities to function more efficiently in relation to the challenges we face.

New models:
Mixed functions and density

We also have to bear in mind that the city should also be a home to many different groups with different social and cultural practices. This is what fosters the creative city, the city that can live up to the demands of globalisation. When we look at the challenge in this way, this is where re-use and the city's many layers and spaces come to the fore as the potential capable of supporting different ways of life and different group identities. When it comes to these requirements, the new, rapidly built city has great difficulty meeting them. Which is why re-use of densely built-up urban areas is of vital importance for European cities in the global urbanisation competition.

But re-use is not about conservation. It is about constant reinterpretation of how urban structures, spaces and buildings may be utilised for new purposes that create new overlaps, new synergies and new cultural exchanges. It is about continually developing models for how urban areas and buildings that no longer function as originally intended can be incorporated in new ways in urban practices. It is about working on both rapid and slow remodelling; about accommodating both mainstream and alternative cultures; about being able to understand how different cultural forms are linked to different urban and architectural structures, and about both controlling and refraining from controlling.

Re-use of the densified city so that it preserves and increases its diversity and is capable of supporting many different ways of life is intrinsically a difficult process, since the big operators on the market more often than not have quite other ambitions. Nevertheless, there are many examples and models of how this can be achieved.

The problem of the outskirts ...

How we deal with the outer city areas so that they can live up to the current two-fold challenge is a far more difficult and less debated issue. Many schemes have been proposed for densification of open neighbourhoods, especially detached house estates. But both the impact and feasibility of these projects is negligible. The commonest strategy is to attempt to build up new densified districts around well-served stations in order to make the outer city areas less dependent on private cars. But the scope of these projects is also limited.

The great barrier to overcoming the two-fold challenge exists in our ways of life, our attitudes and the way in which they feature in the market and the media. The persistent preoccupation in the world of architecture is more with the spectacular stand-alone building, and with the avant gardist break with convention, than with a holistic approach that would manage and coordinate many different initiatives to develop cities through re-use and small-scale renewal of its complex structures.

And in public debate and in the political arena, owing to the practices, roles and power of the media, attention is devoted to the spectacular and easily communicable project, together with a corresponding hesitation to engage in complex explanations and development of what will take 10 or 20 years to make an impact.

... and dysfunctional markets

The way in which the property and construction markets are structured and function tends in the same direction. There is far more to be gained from quick conversion of a large area to cater for what happens to be the most lucrative function here and now, than in committing to long-term step-by-step transformation of the existing structures.

There is therefore also a tendency for re-use to end up being a foil for a rather ignoble practice. Instead of it being a question of how the complex potentials of existing urban structures can be developed to deal with the prevailing challenges, it becomes one of how the most popular building types can be restored to maximise return on investment.

We should perhaps accordingly substitute the contrastive opposition in the title between re-use and new beginning with a juxtaposition. We need to develop an approach and a practice that promote radical urban change by creating new functionalities, with less use of resources, in the already developed cities.

Jens Kvorning is an associate professor at the Royal Danish Academy of Fine Arts, School of Architecture, where he teaches urban planning and urban architecture.

LIVERPOOL:
THE NEW RISE OF A FALLEN GIANT

Liverpool, the harbour city of early Capitalism, experienced unprecedented wealth during the 19th century and an equally unprecedented decline in the 20th. In recent years, the city has started extensive urban renewal projects. While many derelict houses are still scheduled for demolition, there is a growing awareness that re-used existing buildings often meet the city's demand for living spaces better than new ones.

When Britain was an industrial superpower, Liverpool was its international transport hub. Situated near the mouth of the River Mersey in northwest England, its port was the gateway though which raw materials flowed into the country's factories and textile mills. From its 11 km of docks, manufactured goods were exported all over the world.

Prosperity, which reached a peak around 1900, created a cityscape of remarkable richness. Banks and office blocks by some of the leading architects of the day spoke eloquently of the city's economic might. The docks were among the great triumphs of Victorian engineering, and the magnificent St. George's Hall – an immense civic temple combining concert hall and law courts – expressed the city's cultural aspirations.

But dizzying progress in the nineteenth century was followed by catastrophic decline in the twentieth. The collapse of British manufacturing, the loss of Empire and the rise of Europe as Britain's main trading partner instead of America, all spelled disaster for Liverpool and the wider Merseyside region. From a peak of 856,000 in 1931, the city's population had fallen to 510,000 by 1981. It had become a byword for poverty and unemployment, while its stunning architectural inheritance looked increasingly like the ruins of a vanished civilisation.

Over the last twenty-five years, however, the city centre has been gradually transformed. Revival began in 1981, when central government set up the Merseyside Development Corporation to fund regeneration. Further massive injections of public money followed from 1994, when Merseyside was identified as one of the European Union's poorest regions and was granted Objective One status, making it eligible for assistance from the European Regional Development Fund. By the time Objective One came to an end in 2006, it had received over £1.5 billion in EU aid. Now it is hoped there will be sufficient confidence for development to continue without public funding; and indeed the latest – and largest – project in the city, the Liverpool One shopping area, has been funded by private investor Grosvenor.

An oversupply of building stock?

Adaptive reuse of older buildings has played a key part in this transformation. There is strong local enthusiasm for Liverpool's historic architecture, but long years of economic decline have taken their toll on the city's fabric. This, and the sheer number of listed (statutorily protected) buildings – of which Liverpool is said to have more than any other provincial English city – makes conservation and refurbishment a severe challenge. A number of exceptionally important buildings – including the neoclassical Wellington Rooms and the Stanley Dock warehouses – continue to decay after years of disuse; but much has been achieved, and the broader picture is a lot brighter than it was.

The main regeneration project of the 1980s was the restoration of the derelict Albert Dock, the country's largest group of Grade I listed buildings, to house a maritime museum and a branch of the Tate Gallery. Today, cultural provision continues to have an important role in the city's renaissance. The early eighteenth-century Bluecoat Chambers – home to a thriving arts centre – has just received a handsome extension by Dutch architects BIQ, while on the waterfront, a new arena and conference venue by Wilkinson Eyre will shortly be joined by a museum of local history, to a competition-winning design by Danish practice 3XN. As well as cultural provision, the last fifteen years have also seen a significant increase in city-centre living. An important focus for this has been the area known as Ropewalks, a dense grid of narrow eighteenth-century streets, crowded with decaying Georgian terraces, Victorian warehouses and assorted industrial buildings. Pioneers in transforming this run-down quarter were the developers Urban Splash, who converted an 1890s chemical factory here into Liverpool's first loft apartments, completed in 1994. A crucial feature of the project was the creation of Concert Square, a landscaped space that gives the scheme its name and serves as a focus for popular bars and restaurants.

Urban Splash have gone on to develop further residential, office and leisure buildings in the same area, their crisp modernism mixing well with the tough, industrial character of neighbouring older buildings. Other developers have followed in their footsteps with more variable results, occasionally lapsing into historical pastiche. There have been successful residential warehouse conversions, but a distressing number of eighteenth-century houses remain derelict, and several have collapsed after lying empty for decades. Grants from Liverpool City Council are now helping owners to rescue vulnerable buildings in this fascinating area.

Liverpool's new skyline

New-build flats have proliferated not just in Ropewalks but right across the city. On the northern edge of the business district, and close to the waterfront, a cluster of high residential towers has transformed Liverpool's famous skyline in the last five years. The two tallest, including the 40-storey West Tower, were built by the Beetham organisation, another pioneer developer of city-centre flats. Numerous smaller projects have been slotted into sites all over the central area, where the population rose from 2,340 in 1991 to 15,000 in 2007.

With some notable exceptions, such as Allford Hall Monaghan Morris's mixed-use Unity building, the design quality of these schemes is mostly unremarkable, failing to match the powerful individuality and robust materials that have historically characterised the city's architecture. The emphasis has generally been on providing smaller one- and two-bedroom apartments rather than more spacious accommodation. Occupancy rates are difficult to determine, but it seems Liverpool is currently oversupplied with small city-centre flats, and the present economic downturn casts doubt on the future of this building boom.

Refurbishment and conversion of historic buildings has often produced more attractive results. The Collegiate Institution, a large school dating from the 1840s, 1 km from the centre in the depressed inner district of Everton, was a fire damaged shell when Urban Splash took it on in the late 1990s. Their architects Shed KM created 96 apartments behind its preserved facade, dealing with the enormous ceiling heights by introducing mezzanines, set back from the floor-to-ceiling Gothic windows. Meanwhile, in the city centre, many nineteenth-century office buildings have been adapted for residential use. The Albany Building in Old Hall Street, an exceptionally impressive polychrome brick and stone palazzo dating from the 1850s, now houses 123 apartments. The original broad corridors and staircases, which once saw the comings and goings of Liverpool's cotton merchants, make ideal circulation spaces. Regrettably, a lightweight penthouse floor has been added, damaging both the balustraded skyline and the overall proportions of the block. Such rooftop extensions are too often seen as a way of squeezing in more income-generating accommodation, but their visual impact can be destructive.

Revival and demolition, side by side

On the fringe of the commercial and retail core is one of Liverpool's most precious assets, an elegant residential district of streets and squares laid out in the early nineteenth-century, now home to the Anglican and Roman Catholic cathedrals and two of the city's universities. Its handsome terraced houses were saved from decline in the 1980s through a conservation programme operated by English Heritage and the City Council. The result: greatly increased property values, and an area much in demand by TV companies filming historical dramas. Many large houses here have been divided into flats, but in recent years a few have been reconverted for single occupancy. The area retains a healthy diversity of population, and has avoided the sterility of gentrification.

The biggest changes of the past twenty-five years have taken place in and around the centre, but now traditional housing in the wider city is facing transformation on a huge scale. Large areas of suburban Liverpool consist of uniform streets of late nineteenth-century, two-storey terraced houses, some of which have experienced decades of neglect. Under the national Housing Market Renewal Initiative, a number of these areas have been earmarked for demolition and rebuilding. Another area of Victorian housing facing wholesale clearance borders Edge Lane, the main road into the city centre from the motorway. These demolition proposals have aroused fierce and emotive controversy, with supporters defending the plans and opponents campaigning for retention and refurbishment of existing properties.

A scheme which shows the viability of refurbishment has recently been completed in Tancred Road, close to Liverpool Football Club's Anfield stadium. Carried out by the Affordable Homes Development Company and designed by Ken Martin Architects, it powerfully demonstrates how the sensitive adaptation of older buildings need not be confined to the showpiece architecture of Liverpool's centre, but can breathe new life into humbler areas too. With luck, it will serve as a model for the economic, social and environmental benefits of adaptive reuse elsewhere in the city.

Joseph Sharples studied Fine Art at the University of Edinburgh, and worked for several years as a curator at the Walker Art Gallery, Liverpool. Among his publications is the Pevsner Architectural Guide to Liverpool (Yale University Press, 2004). He is now an architectural historian at the University of Liverpool, where he is investigating the archive of one of the city's leading Victorian practices, Culshaw & Sumners.

NEW YORK:
UPGRADE FOR THE GLOBAL METROPOLIS

Despite the high price of real estate and the decades in which living space was in short supply, up until the late 1990s most of New York's shoreline consisted of industrial wastelands and derelict warehouses. This was not only the case in Brooklyn and Queens but even in the prime location of Manhattan, for example along the shore of the Hudson River, right next to the highly sought-after Greenwich Village.

The reasons for this are both historical and political: up until the middle of the 20th century there were quite practical reasons for turning one's back on New York's waterside. The area along the shore was used for industrial purposes, which resulted in fairly heavy shipping traffic. The atmosphere was permeated with noise and dirt. The reason that Fifth Avenue became Manhattan's most exclusive address was because it lies exactly in the middle between Hudson River and East River. Later, bypass roads were built along the shores, which continued to make them unattractive as residential areas.

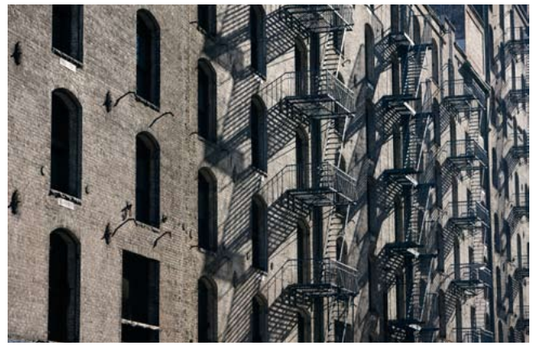
Brooklyn: from Mafia graveyard to boutique neighbourhood

But political reasons also stood in the way of redeveloping the shore areas. Any discussion of a possible change of use was met by protests of the unions objecting to any migration of industries because of the associated loss of jobs. Nevertheless, this did not halt the exodus of many factories. The upshot was that neighbourhoods began to deteriorate because they were neither fully used as industrial areas nor as residential areas. For several decades the now trendy neighbourhood of Dumbo in Brooklyn was also locked in this impasse.

Its name is an acronym for 'Down-under-the-Manhattan-Bridge-Overpass'. The neighbourhood lies directly between the bridge piers of Brooklyn Bridge and Manhattan Bridge, which pass directly overhead, leading to the higher and more exclusive neighbourhood of Brooklyn Heights. For many years this industrial area was considered inhospitable and dangerous: it was rumoured that the Mafia used it to dump its corpses. A few brave artists moved into some of the empty lofts at the beginning of the 1980s, precipitating the well-known cycle according to which artists discover a neighbourhood for themselves, make it liveable and are subsequently driven out again by the increase in prices.

David Walentas, the developer of the project, now aged sixty-nine, also had his eye on the area when he visited River Café at the foot of Brooklyn Bridge, a café well known for its view of the Manhattan skyline. The guests visiting the restaurant only passed through the area by taxi as it was otherwise considered too dangerous. Walentas, who was involved at the time in the revitalisation of Soho, recognized the potential of the old factory buildings between the bridge piers and bought about one dozen buildings for next to nothing.

At the end of the 1990s he sold various premises that had been converted into residential lofts at prices fifty times the original price per square meter! But the road there had been long and rocky. After buying the buildings, almost nothing happened for 17 years. The fault lay with the city administration that, for political reasons, did not wish to change area's land use designation and that



For more than a decade New York has been systematically cleaning up its former 'no-go areas'. Lofts and luxury apartments are being created in areas where rundown industrial sheds formerly stood and homeless persons sheltered. But in ridding itself of its old social problems the metropolis has created new ones: it is not merely society's vulnerable people but also people from the lower middle-classes who have difficulty in finding affordable housing.

was not on good terms with Walentas. In addition, the 1980s saw a crisis in the real estate market and a recession. It was only in 1997 that the first amendments to the area's 'zoning plan' were made, which permitted the conversion of buildings to luxurious lofts and later even allowed a few new buildings to be put up.

Today Dumbo is an elegant neighbourhood with fantastic restaurants and boutiques selling designer furniture. And Walentas is now far from being the only developer in the neighbourhood. But he can still claim that he was more or less personally responsible for promoting Dumbo.

Chelsea: the revitalisation of the 'High Line'

The revitalisation of the more western neighbourhood of Chelsea has taken a particularly ambitious course: within only a few years the meatpacking district in south Chelsea has turned into the ultimate 'trendy' address for new fashion and designer boutiques, restaurants run by celebrity chefs, and hip 'boutique' hotels. Together with the adjacent gallery neighbourhood, which has become home to more than 300 art galleries, nothing could be more 'hip'.

The reason for this is due not least to an old and rusty railway line, formerly used for rail freight, which meanders ten meters above the ground from 13th to 34th Street, right through the street blocks between 10th and 11th Avenue. Only eight years before – under Mayor Rudolph Giuliani – it was scheduled for demolition because the railway was considered an obstacle to the construction of future housing. However two residents, the artist Robert Hammond and the travel journalist Joshua David, began campaigning to conserve it and founded the association 'Friends of the Highline'. Their idea of transforming the High Line into a public park soon found prominent supporters such as pop star David Bowie and fashion designer Diane von Furstenberg. They were able to win over the new city government under Mayor Michael Bloomberg. Redesigning the shore areas of New York was one of Mayor Bloomberg's objectives right from the start.

After the City of New York became the High Line's official owner, it changed the land use designation of the surrounding area so that a mixed use which would include residential and office buildings became possible. A design for the High Line commissioned by the city – a collaboration between landscape architects Field Operations and the architects Diller Scofidio + Renfro – envisions a public park with various means of access and entrances. The first stage, which will extend from 13th Street to 20th Street, should open in the winter of 2008/2009. The estimated costs for the remodelling of the entire High Line are expected to total 170 million dollars and will be largely paid for by private individuals.

The change in the zoning plan's land use designation immediately spawned a number of ambitious projects, some by well known architects such as Jean Nouvel and Frank O. Gehry but also buildings by newcomers such as Annabelle Selldorf and Lindy Roy. As only a few industrial buildings have remained along the High Line, almost all projects are new buildings intended as luxurious condominiums. The 20-storey Chelsea Arts Tower, completed one year ago, and the office building by Frank Gehry for InterActiveCorp (IAC), which has also been completed, are some of the few exceptions. IAC is a media conglomerate headed by CEO Barry Diller, the husband of Diane von Furstenberg. A further office and trade centre is planned for the 'High Line Building', the only building which will be literally standing on the High Line itself. The Whitney Museum of American Art intends to build an edifice designed by Renzo Piano to serve as an 'anchor' for the park project. Immediately next to it the 'Standard Hotel' of boutique-hotel owner André Balazs already rises daringly above the High Line. Balazs is mainly known for his luxurious hotels: Mercer in New York and Chateau Marmont and Standard in Los Angeles.

Located next to Chelsea Market, an unusual shopping centre that was dug like a tunnel through an old row of houses some 13 years ago, the 26-storey 'Caledonia' by the architect Gary Handel, has also been completed and its tenants have moved in. Further north, Jean Nouvel's 'Vision Machine' as well as two luxurious residential buildings by the architecture company Della Valle Bernheimer are currently under construction. And a house by Neil M. Denari has been additionally squeezed into a narrow space between the High Line and a high-rise building by Lindy Roy.

Bowery: luxury apartments next to shelters for the homeless

Sometimes the reasons standing in the way of a development are to be found in a place's history, even if to all intents and purposes the history is long a thing of the past. Until the mid-1950s the 'Third Avenue El' – an elevated railway built in 1878 – ran along Third Avenue and the Bowery at second storey level. (Apart from Broadway the Bowery is the only street in New York which is neither a 'Street' nor an 'Avenue'). The street below the railway viaduct was a sad stretch populated by alcoholics, prostitutes and so called 'flophouses', cheap hotels for the homeless. After the railway was dismantled in 1955, the Bowery's appearance changed but not its reputation. Only artists were happy to move into the lofts, which were suddenly flooded with daylight now that the street had been opened up. Up until a short time ago it was also the address of the music club CBGB's, where American punk music originated, the Jean Cocteau Repertory Theater and the Bouwerie Lane Theater.

Around the millennium the real estate boom also began to make its mark on the Bowery; the first new buildings began appearing, taking the place of parking lots, gas stations and dilapidated houses. A few individual older houses have been converted and remodelled. The shelters for alcoholics and the flophouses have remained. The building of the New Museum of Contemporary Art by the Japanese architectural team of Ryue Nishizawa and Kazuyo Sejima/ SANAA (Sejima and Nishizawa and Associates), which opened its doors one year ago, stands directly next to the flea-pit hotel 'Sunshine'.

Going north, at the intersection with Houston Street, a nine-storey and a 14-storey house have been built containing some 500 luxury rented apartments at monthly rents of between 3,000 and 7,500 dollars. And the chic 16-storey Bowery Hotel with 146 rooms (prices: from 500 dollars) stands next to a shelter for homeless people. Another hotel, this one with 22 storeys, is currently still under construction. What makes these projects so paradoxical is that they were attracted by the location's seedy atmosphere, but it is that very atmosphere they help eliminate.

Mayor Bloomberg has supported the construction boom in New York with all means at his disposal. For larger developments or estates, although not for individual buildings, he has additionally stipulated that some of the apartments must be available at so-called 'affordable' prices, the greatest social contribution New York currently offers in terms of 'social housing'. The problem is that rents considered 'affordable' when compared to the exorbitant rents demanded for apartments in Manhattan's new buildings are often still far beyond the monthly income levels of the lower middle classes. Even before the financial collapse it was becoming clear that bus drivers, policemen and teachers were being pushed to their limits because the distances they commute to work are continually increasing.

Thérèse Balduzzi lives in New York, where she contributes to various German-language media. The author, originally from Zurich, writes mainly on culture, popular culture, design and architecture.

ROTTERDAM: INDUSTRIAL TOWN SEEKS LODGERS

Rotterdam had to rediscover itself once after the Second World War and is now in the process of doing so again. Abandoned docklands, social problem areas and post war buildings in need of redevelopment form the fertile ground from which new housing is to rise. The conceptual approaches so far range from city centre re-densification luxury apartments overlooking the harbour to apartments literally given away in working-class areas.

"I don't drive to the other side very often. It isn't Rotterdam. Rotterdam is on our side of the Meuse," explained the taxi driver before leaving the city centre over the Erasmus Bridge. That a new showcase district in the form of Kop van Zuid is being developed immediately over the bridge was of little interest to him. As a die-hard Rotterdam inhabitant he considers everything south of the Meuse to be little more than derelict periphery. The area was known as the 'peasant district' in the nineteenth century as poor vagrants from the country settled there while looking for work in the docks on the south bank of the Meuse. In the 1960s, the port moved further out towards the Meuse estuary and, in so doing, deserted the unemployed and migrants in the housing estates of Rotterdam-Zuid.

Only in the late 1980s, when dockland re-development became internationally fashionable, were plans made to convert the Kop van Zuid port peninsula into a functional multi-faceted new city-centre area. Since then, numerous new high-rise buildings and apartment blocks have been constructed between the old port buildings, some of which were converted to lofts and commercial premises. Mecanoo, Renzo Piano and Lord Norman Foster are among the architects to have built here; Rem Koolhaas and Alvaro Siza are rumoured to follow. When the project is finished in 2010, 18,000 people should be working and 15,000 living, half of them in owner-occupied apartments, in Kop van Zuid. Hopefully, a little of its economical strength will radiate onto the more southerly located regions whose social reality currently collides with the newly erected illustrious world.

City of workers and architects

Thanks to prestigious projects such as Kop van Zuid, Rotterdam has for some years now happily identified itself as the "architectural capital of Holland". If you count the architecture firms that have settled in the city, and the percentage of new buildings forming the city infrastructure, and also consider that the Netherlands Architecture Institute has its headquarters in Rotterdam, then this is certainly the case. Ironically, however, this label arose from an image problem, since Rotterdam is not a beautiful city in the classical sense and has never been regarded as such. Still small and insignificant In the Golden Age, it first blossomed during the industrialisation of the 19th century, when the Nieuwe Waterweg (New Waterway) created a direct shipping canal to the North Sea. The port rapidly developed to become Europe's largest, and new residential areas were built around the centre. Since then Rotterdam has been known as Amsterdam's ugly but industrious sister. A proverb says that every shirt sold in the port already has its sleeves rolled up.

Rotterdam has remained an industrial city. The income of 54% of the inhabitants is under the Dutch national average, 46% are immigrants and 9% are unemployed. However, since the 1990s an increasing number of architects, artists and designers who appreciate the city's ruggedness, its urban disruption, the creative space and low rents have also settled in Rotterdam. Many foster a love-hate relationship with their homes. "I rotterdam" is the slogan of the young architecture firm Powerhouse Company, published as parody of the marketing campaign "I amsterdam" and in which Rotterdam is described as "urban compost heap, waiting to flower from its lingering fertility".

Wanted: financially sound apartment buyers

Meanwhile, the local authority, housing associations and project developers are making an effort to attract well-to-do residents to Rotterdam with development projects like Kop van Zuid. There are luxury apartments in many new buildings; Brad Pitt even bought the penthouse in the Montevideo skyscraper that was empty for a long time as there are virtually no potential customers for expensive owner-occupied apartments. Last year a local authority initiative let 45 apartments in new building projects – including Montevideo – for a third of their market price to university grad-

uates to prevent their migration and to have the buildings occupied.

Higher income groups are attracted by dockland developments as they are permeated with a mix of charming old buildings and modern new constructions and, in the best case, exude genuine big city flair. After Kop van Zuid, Müller and Lloyd piers on the northern bank of the Meuse are the latest to be transformed into a new city district. Since the port 'slides' inexorably towards the North Sea, an increasing number of such areas are free for city expansion. The latest is called Stadshavens and is being developed by both the port and local authorities. By 2025, 5,000 apartments, some of them floating, will be built on a 1,600 hectare site west of the city centre.

It raises the question of whether such city expansion projects in Rotterdam are worthwhile if taxi drivers and potential property buyers already regard Kop van Zuid as periphery. More recently, the post-war period city centre has also fallen under the planners' gaze. It arose as a result of the bombardment of Rotterdam in May 1940 during which almost every old building in the centre was destroyed. Because Rotterdam had never been regarded as beautiful, there was no talk of reconstruction at that time, but the flattened area was seen as tabula rasa on which a new, modernist centre could be planned. Even today, the scars of the fires that raged during the nights of bombing are still clearly visible.

A city centre renaissance?

Since the ideal of modern town planning was the strict demarcation of functions, there is a huge number of offices and businesses in the centre but very little residential accommodation. Re-densification would make it possible to kill two birds with one stone: on the one hand attractive, centrally located accommodation would appear, and on the other, the city centre would not be so hopelessly deserted after closing time, as it is now. It is exactly this lifelessness in the city centre that contributes to Rotterdam's image problem.

In some cities, the wrecking ball is brought out to create space for new buildings. Happily, this is seldom the case in Rotterdam even if some reconstruction projects appear somewhat dubious from the listed building point of view. However, with the exception of the city hall, the main post office and a small church, the oldest buildings in the inner city originate from the post modernism period and are officially not worthy of listed building status. On this note we can be pleased that a previously shabby looking 1950s department store on the Binnenwegplein has been extended by the addition of two residential towers and the base building restored by Van Tilburg, Ibelings, Von Behr Architects. In contrast, the planned housing-complex Bijkorama, designed by Wiel Arets, which is to be built onto the Bijenkorf department store, with its facade created by Marcel Breuer in 1951, appears more dubious.

The most controversial, however, is a new master plan for the Lijnbaan courtyards. These green courtyards, surrounded by tower blocks from the 1960s belong to the district of the legendary Lijnbaan shopping street, designed immediately after the war by Van den Broek en Bakema. Last year, at the owner's request, the local authority commissioned the architecture firm Claus en Kaan to develop a master plan that envisaged the courtyards being annexed off with single-storey commercial premises under a green roof and additional residential towers erected in the courtyards. After loud protest, this plan was dropped – but a new one is already in the pipeline.

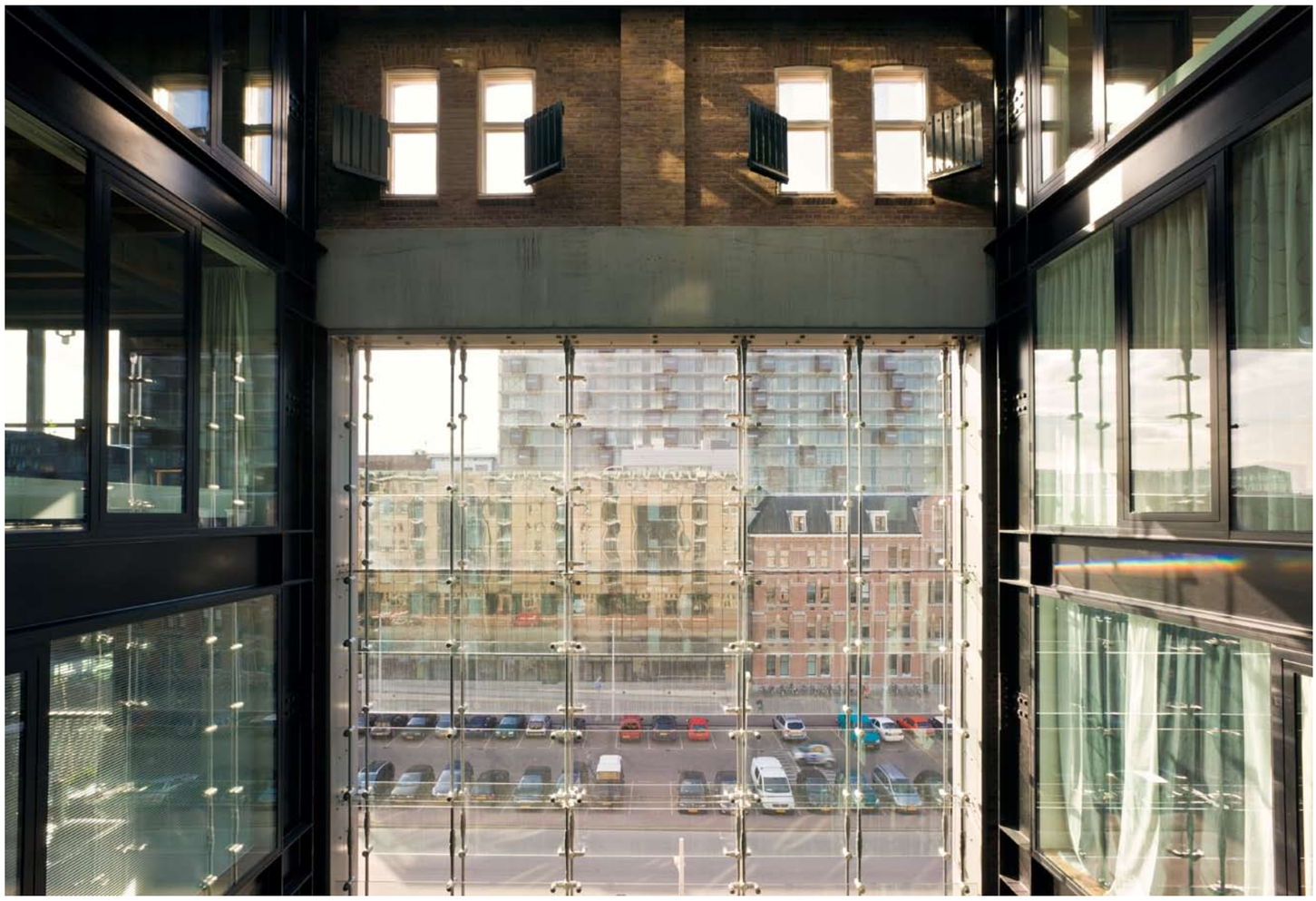
Apartments to give away: the Wallisblok experiment

If it was left to the owners of the tower blocks, they would be pulled down without further ado and replaced by more profitable new buildings, as they have already paid for themselves. For the same reason, the tendency throughout the Netherlands is towards demolishing less sought-after residential areas instead of costly renovation or conversion. This is also valid for the Rotterdam post-war dormitory town of Hoogvliet, in which 5,000 of 17,000 houses are currently being demolished and replaced by new buildings. That it is also possible on a small scale, and more elegantly, is shown by a conversion project in Rotterdam's problem district of Spangen that was only finished at the end of 2007 and is already setting a precedent. Spangen is a district in west Rotterdam that consists mainly of brick-built apartment buildings from the period between 1910 and 1920. 85% of the inhabitants are foreigners, and 80% of the available housing is rented council flats. Spangen hit the headlines during the 1990s when residents protested against the flourishing drug trade in the district by barricading the streets. Things have been calmer since, but Spangen, one of the poorest districts in the Netherlands, can certainly not be described as a good residential area.

In 2005, the local authority therefore decided to experiment. All 75 apartments in a block, the so-called Wallisblok, were to be given away – with the provision that their new owners formed a housing association, renovated the block together within six months and lived there themselves for at least two years. Thirty-three interested parties were quickly found, almost all of whom came from creative professions – almost to be expected in Rotterdam. By merging existing flats, the majority of the apartments now have around 200 square metres of living space, all have either a roof terrace or garden, and there is large shared atrium in the centre of the block. The owners invested between €70,000 and 200,000 in their new homes.

With the success of Wallisblok, similar projects in the Charlois and Feijenoord districts, far away from Kop van Zuid, are now also being planned. "Gentripuncture" is the catchword - the hope is that the communities of well-educated high earners will have a positive effect on the environment. Whether they do or not remains to be seen. However, they are certainly cheaper, subtler and meet the needs of the Rotterdam housing market better than some large-scale new building projects. "To be brazen, modern, radical, and city-like is unquestionably Rotterdam's desired image," renowned architecture critic Angelika Schnell once said. "The reality is, however, both more modest and more complex."

Anneke Bokern was born in Frankfurt/Main in 1971 and studied History of Art in Berlin. Since 2000, she has been living and working as an architecture, design and art freelance journalist in Amsterdam. Anneke Bokern organises architectural tours in the Netherlands under the name of architour.



ROTTERDAM

LIVERPOOL

NEW YORK

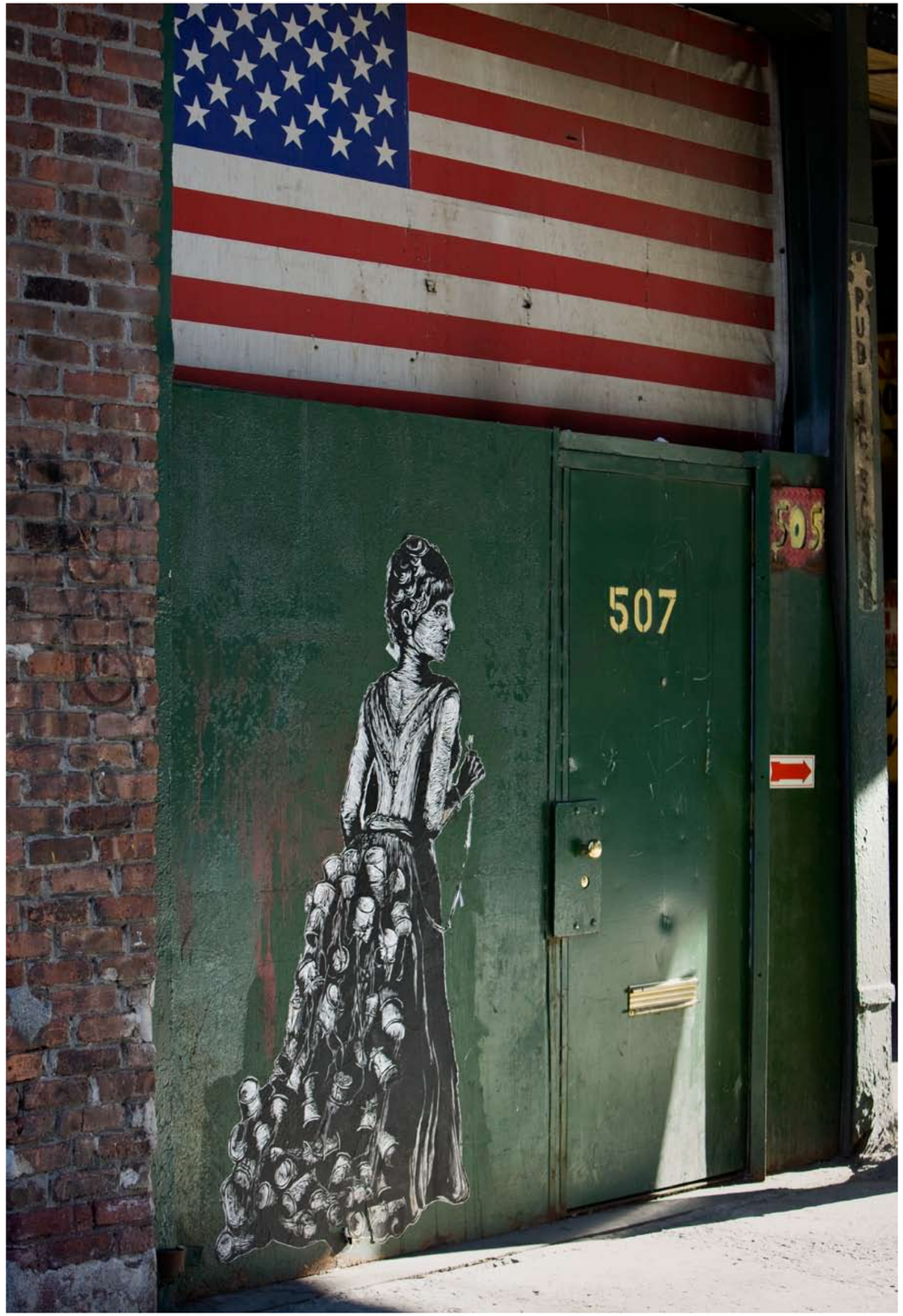
LIVERPOOL

NEW YORK

LIVERPOOL

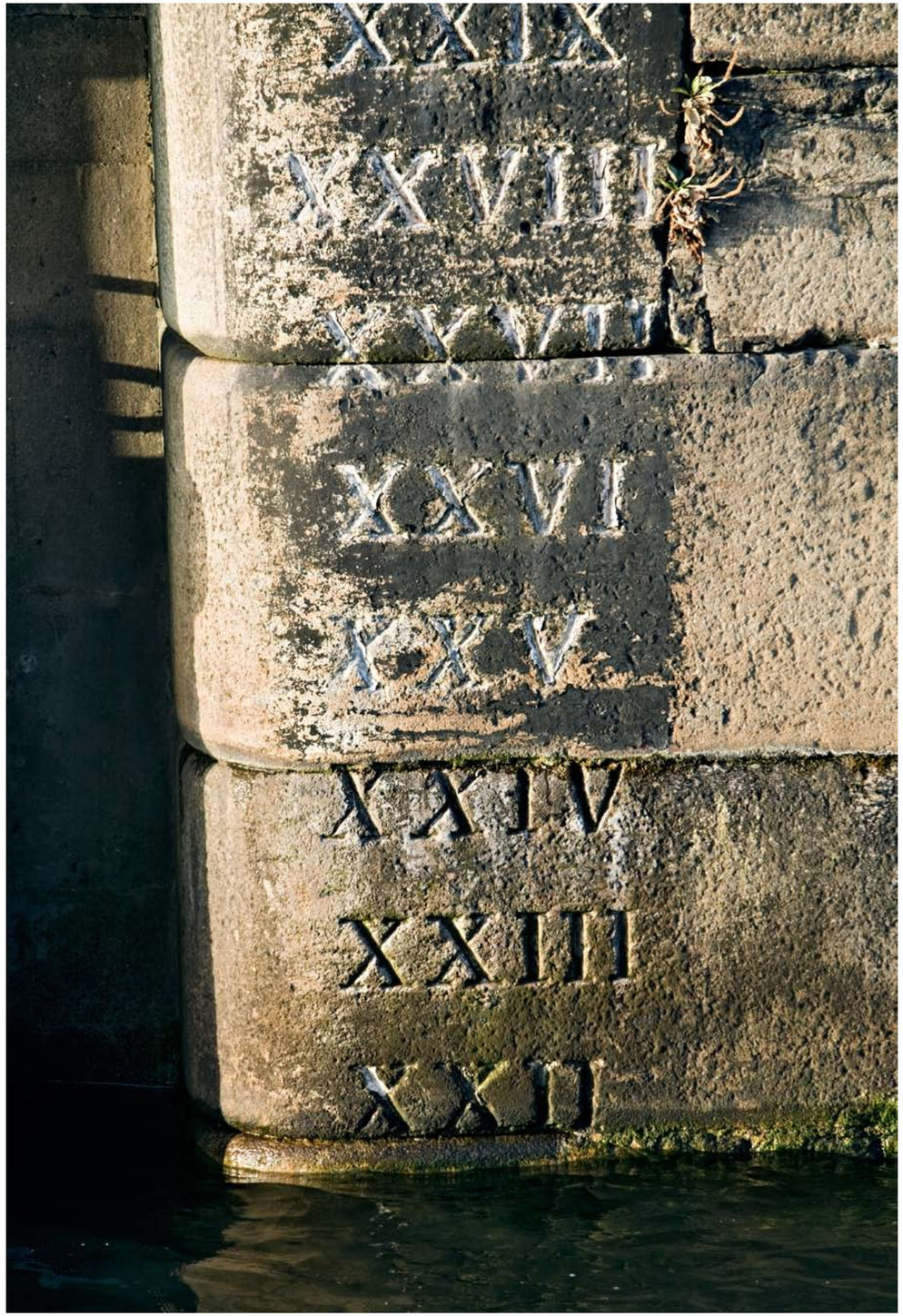
ROTTERDAM

NEW YORK



NEW YORK

LIVERPOOL

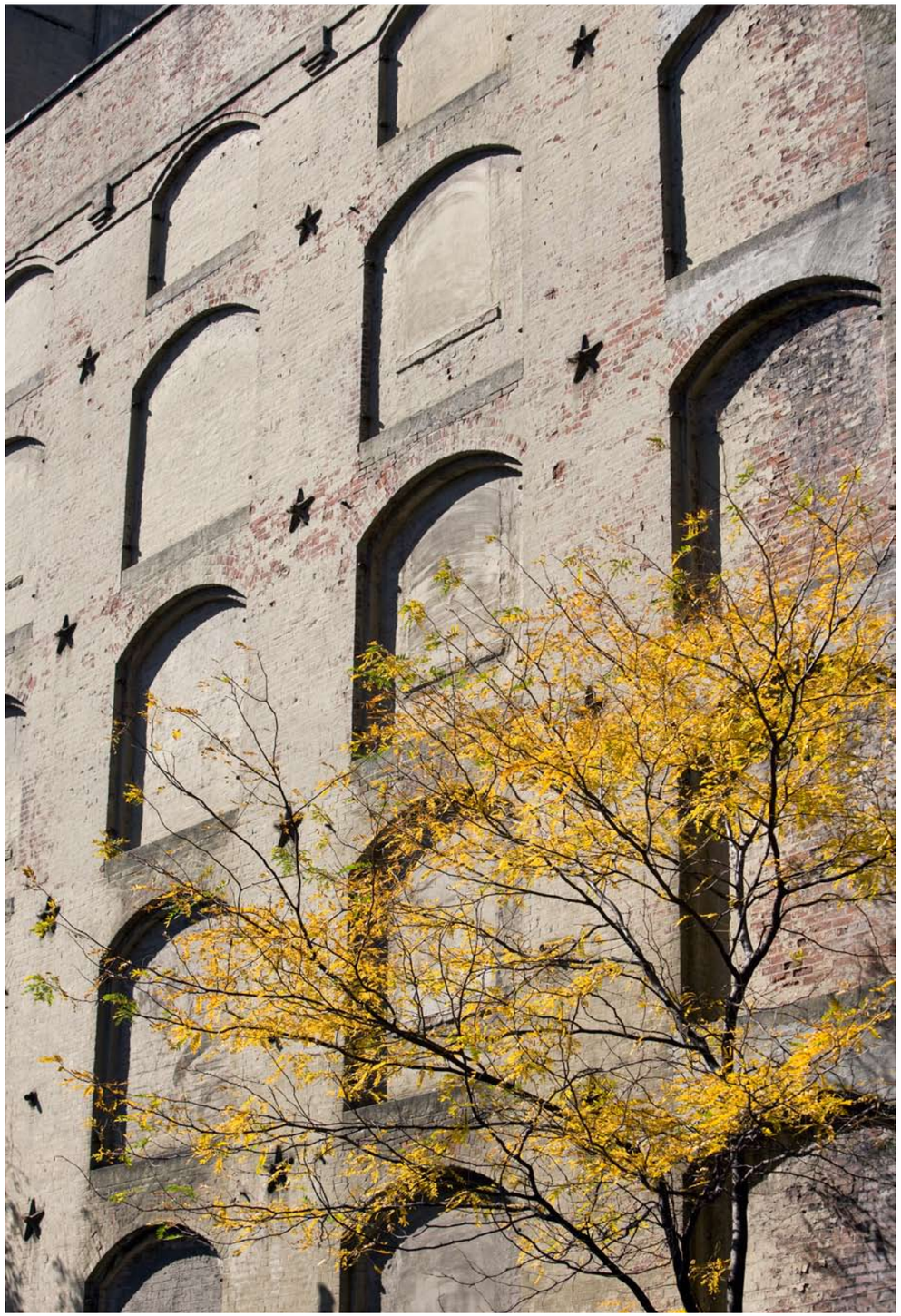


ROTTERDAM

LIVERPOOL

NEW YORK

ROTTERDAM



Henrik Kam (www.henrikkam.com) is a San Francisco photographer concerned with the impact of human activity on the urban and natural environment. Originally from Denmark, he has spent his entire professional life in the US working for a variety of clients. Currently he's in the middle of a year-long project for the San Francisco Museum of Modern Art.

69°11′58″ N
51°07′08″W
Ilulissat Icefjord, 06.07.2003

Broken Line
Photographer Olaf Otto Becker
www.olafottobecker.de

"Photography is made with light. It needs light, and the initial subject for any photographer is the source of all photographic form – light. Olaf Otto Becker has spoken of his obsession with finding the right light, and the ultimate subject of his photographs – their first and last subject – is not rocks or ice floes or isolated timber houses, but light. In his introduction to The New West (1974), his pioneering book of photographs of the 'man-altered' landscape and an inspiration for much contemporary landscape photography, Robert Adams wrote the following, an aphorism one might remember when looking at the Greenland landscapes of Olaf Otto Becker: ' ... all land, no matter what has happened to it, has over it a grace, an absolutely persistent beauty.'"

From the essay "Take me to the frozen North – The Greenland Photographs of Olaf Otto Becker" by Gerry Badger

NEW GLORY FOR OLD SITES

PHOTO: KAIDO HAAGEN

By Thomas Lemken

A Central European uses around 17 tonnes of material every year for construction and housing – and a corresponding amount of energy to produce, transport and process it. Converting an old building generally takes only a third as much material as constructing a new building. However, exploiting the ecological potential of existing buildings to the full is going to take more than just lip service.[1]

Left **Huge amounts of building materials and energy are resting unused in Europe's old buildings and infrastructure. Normally, they do not become visible until a building is torn down or converted as in the case of this cellulose factory built in Tallinn in 1926.**

How to manage the declining and increasingly expensive resources of energy, raw materials and surface area is a key 21st century question essential to long-term environmentally sustainable development. Today we live in a globalised world, with human consumption driving energy and resource consumption. The level of global consumption is set primarily by the leading industrial nations, who – relative to their population – make a vastly disproportionate contribution to global economic performance. Developing and newly industrialised nations aspire to the resources intensive lifestyles of western industrialised nations – and copy them. Per capita resource consumption is very unevenly distributed globally. If the people of the developing countries continue to grow in number and their consumption approaches that of industrial countries, then in 2050 we will need seven times more resources than at present. To safeguard the services provided by them that are essential to us, we must reduce the material flows, i.e. dematerialise the economy[2].

CONSTRUCTION AND HOUSING AS AN AREA OF NEED

Ever since humanity became settled, housing has been an indispensable part of our culture. Our type of housing shows how our environmental influences and lifestyles, social structures and needs, working and consuming habits interact. Cities, buildings, open spaces and the shape of the landscape occupied and cultivated by human beings form the spatial shell for everyday life, for the society and culture of the human beings that live there. This shell is changed by building activity.

The construction and housing area of need includes all activities that satisfy individual construction and housing needs, e. g. the creation and use of housing, working and storage space and all upstream and downstream processes. Over the past decade, building investment and internal construction material production in Germany have declined sharply (from €250 billion in a year in 1996 to €200 billion in a year in 2005[3]). Approximately 75 % of the buildings needed in the year 2020 have already been built[4]. Europe-wide, the amount of building stock has risen rapidly in recent years. More than 70 % of buildings there were erected in the last 20 years[5].

According to demographic change prognoses, the specific need for housing space in future – in Germany for instance – will be very different for each locality. The population is declining, and the increasing percentage of senior citizens among the overall population will mean a particularly high need for suitable accommodation for the elderly[6]. Some communities can expect shrinkages, others can expect influxes. The per capita need for living space will also grow due to the increase in one-person households[7].

Of all economic sectors, construction has the highest mass flows and material turnovers. This is true of building from scratch as well as renovating and expanding existing structures. The way we build and live today requires about 30 % of our natural resource consumption (measured in kg of extracted material) per capita and per year[8]. In Germany, existing buildings and surrounding infrastructure (e. g. streets and squares) take up a large amount of resources (space, energy and raw materials)[9]. With a global material consumption rate of approx 52 t per person per year, around 17 t of materials is used annually for construction and housing alone[10]. This makes "construction and housing" easily the most material-intensive area of need[11].

CONVERTING EXISTING BUILDINGS – A PATH TO RESOURCE EFFICIENCY

The supply chain's point of greatest material input is the construction of a new building. Continued use or reuse of existing buildings saves most of this expenditure, making it one of the best potential resource-saving prospects. In the case of buildings constructed using "massive" procedures, additional material equal to about 50 % of resources expended on the building shell is expended over a use phase of approx. 80–100 years due to heating and periodical renovation and repairs[12]. Compared to a new building, approx 2/3 of the material used during the construction and use phases can be saved by using an existing building. This does not include further potential saving methods involving material-saving construction methods and suitable construction materials.

Today the main focus of housing construction activity is already on internal construction, i.e. in using existing buildings (50 % of added value[13]). Existing non-residential buildings and infrastructures are also very important for resource productivity.

Right **For a long time, the empty cellulose factory, with its limestone walls, towered grimly into the sky. From 2004 to 2006, it was converted by KOKO architects into offices and apartments, whereby six floors were added in the process.**

PHOTOS: KAIDO HAAGEN (1), ANDRUS KOREESAAR (2)

The priority accorded to building renovation varies across Europe. During the last years of the 20th century, the old EU member states significantly reduced existing residential buildings' energy consumption. Development in new member states lags behind this trend. In these states, the energy coefficients for residential houses are generally at least twice as high. In particular, the slab-construction apartment blocks from the 1960–1990 period have very high energy consumption rates. According to the report "Regular National Report on Housing Developments in European Countries" (2004) little data is available on the extent of accommodation renovations in European states. However, a Europe-wide increase in contracts for renovation of existing buildings and in demand for the corresponding (construction) proficiencies is on the horizon[14].

UNTAPPED POTENTIAL

In its sustainability scenario, the study "Nachhaltiges Bauen und Wohnen in Deutschland"[15] forecasts savings of up to a third of annual raw material demand in the 'construction and housing' area of need by 2025. This is to be made possible by, among other things, more efficient use of existing residential buildings, energy-optimised retrofitting, district heating, increased development of inner cities and housing estates, and increased use of renewable raw materials and recycled construction materials[16]. This would create a possible annual raw materials saving of approx. 89 million tonnes, primarily in the area of residential buildings. This does not include potential savings in infrastructure facilities. A study by Artur D. Little GmbH/Wuppertal Institut/Fraunhofer Institut für System – und Innovationsforschung[17] produced similar results. This study estimates the financial saving achieved by saving on materials at approx. €3.8 bn (based on a total material value of €12.5 bn in the structural engineering and interior construction sectors combined). The study assumes that approximately 30 % of this theoretical potential saving can be realised within the next ten years (this would be equal to €1.2 m)[18].

RESOURCE-EFFICIENCY AND OPTIMISING A BUILDING THROUGHOUT ITS LIFE CYCLE

Extensive overall analysis of residential buildings in Germany divided by building type and building age classes[19] makes it clear that few advances have been made in Germany in the last century in the use of resources. One reason for this is the increased requirements on building quality and comfort; another is, not surprisingly, the effect of the increased economic scope of those who commission buildings. The high numbers and rapid development of construction materials, products and systems on the market creates an appetite that shortens the period between renovations and increases the use of materials throughout a building's lifespan. The study mentioned above also shows that the buildings analysed consume around 4–6 tonnes of resources per m^2 of main floor space. Although a building has a comparatively long useful life, consumption on this scale will eventually lead to construction material supply problems. Without significantly increasing resource efficiency, sustainable building and habitation will prove difficult to implement. Optimised building with minimised use of resources (material, energy, space) across the whole life cycle of a building, therefore, also means meeting the occupants' requirements for high-quality and comfortable accommodation.

For buildings built or converted in the future, costs will continue to play a central role beyond the actual building stage. It can be assumed that, in the future, technologies leading to significant cost reductions during erection, operation, preservation and also disposal of a building will become established still more quickly. A change of perspective from being purely oriented on investment costs (erection) to calculating the overall cost taking account of investment, operation and preservation is already taking place. A comprehensive cost calculation evaluates costs over a building's whole life cycle, including disposal costs (utilisation of construction waste, waste disposal). In this context, the aim of material and energy efficiency measures is to reduce natural resource consumption in the long run by decreasing resource input. Ideally, a building or renovation plan includes all the different phases of a building's lifespan and is aimed at selecting the best solution in terms of material and energy efficiency from a variety of construction methods in building from scratch and in renovation. This avoids natural resource (material or energy) consumption saved in one life cycle phase being shifted to another life cycle phase, or increased materials being used in order to save energy.

WHAT MUST BE DONE?

Specific measures are required to realise the resource potential of existing buildings. There is a particular need for action in targeted support for existing building renovation, increased housing density and brownfield activation. This includes:

- promoting increased inner-city development
- revitalising inner-city areas, particularly city centres (reducing exodus from towns)
- promoting increased mixed use, using new forms of compact construction for residential and commercial use
- extra taxation on use of new sites[20]

It is also important to create structures that encourage investment in maintenance of existing buildings and enable resource-efficiency to be taken into account during building and renovation planning. Among other things, adjustment of tenancy and taxation laws should be mentioned in this context, as well as the ability of building owners to levy an 'eco-surcharge' on newly renovated accommodation in order to pass on at least some of the investment costs to the tenants at the same level of all-inclusive rent.

The first step towards supporting integrated construction planning would be making available inexpensive planning tools with standardised building element catalogues (with ecological and economic parameters). Further training for planners and architects would effectively complement this. Integrating a separate service, "Gebäudeerfassung" (gathering data on buildings) into the Honorarordnung für Architekten und Ingenieure (HOAI), or official scale of fees, would create a field for planning in an extended sense. Admittedly requirements and test criteria would have to be developed for a higher evaluation system for existing buildings. Aspects of resource conservation/efficiency and recycling should also be incorporated.

However, the further development of existing instruments is also an important step towards resource productivity. This includes, for instance, fully transferring the EU Construction Directive in individual EU states as well as introducing a building energy passport, which could then be expanded to become a resource passport for buildings.

Due to the already high regulation density, imposing additional conditions would be less successful than strengthened compliance control (for instance regarding energy efficiency regulations) and targeted support for integral planning. A general framework must be agreed by all parties that helps to avoid construction defects while promoting individual firms' competitiveness. Stakeholder dialogues and supporting measures (programmes supporting preventative maintenance, brochures for end-users on resource-efficient living and home improvement etc.) would directly contribute to this. Targeted further training programmes in schools, vocational schools and higher education, for those involved in home-improvement stores and dealing in construction materials are also important. Marketing campaigns for building and living in existing buildings (e. g. with young families as a target group) could be used to make construction using existing buildings more attractive and at the same time increase the knowledge of users (for instance about the needed change in ventilation practices after energy-optimised retrofits).

Thomas Lemken is a scientific coordinator and project director at the Wuppertal Institut für Klima, Umwelt, Energie GmbH. The main focus of his work is on environmental and resource management, the instruments of environmental politics, energy and communal environmental politics. Since 2005 he has been Managing Director of the sustainability education initiative "KURS 21 e.V."

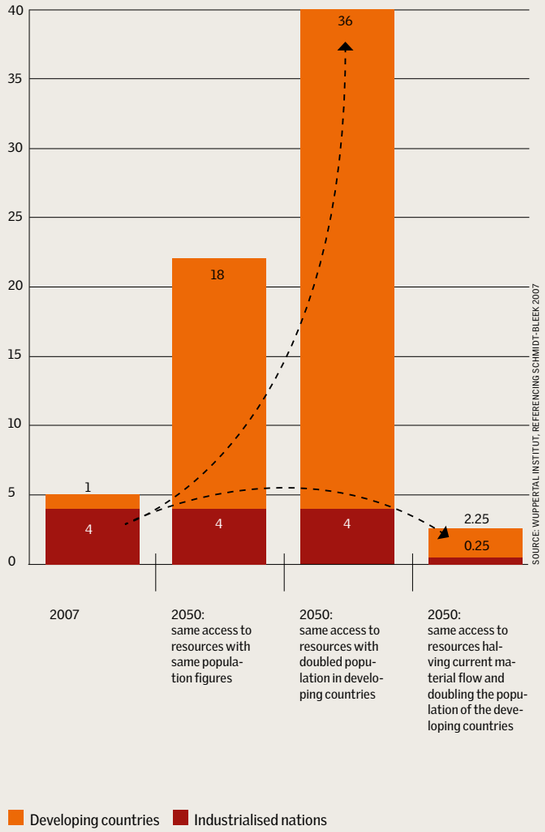
PHOTOS: ANDRIUS KRESA AR

Left **In the area of renovations, increasing energy efficiency is not the sole objective; living quality is also important for a project's acceptance and durability. Attractive architecture, even in apparently inhospitable locations as here in Tallinn, can make an important contribution to this.**

Notes

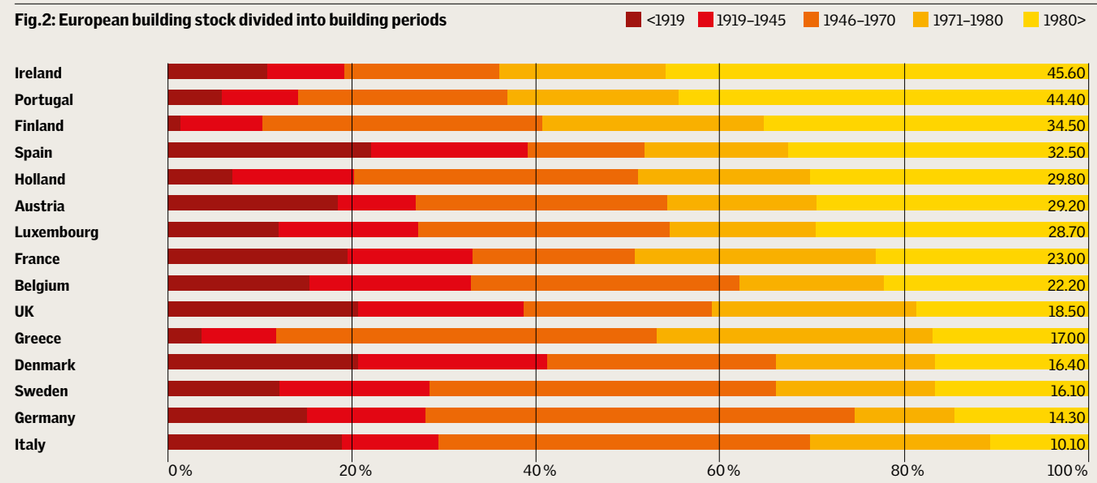
1. This article is based on the leading dialogue process "Verbesserung der Rohstoffproduktivität und Ressourcenschonung", initiated by the Wuppertal Institut and commissioned by the Umweltbundesamt. More information can be found at ressourcen-produktivitaet.de.
2. Schmidt-Bleek (2007): Nutzen wir die Erde richtig?, S. Fischer Verlag, Frankfurt am Main.
3. Bundesamt für Bauwesen und Raumordnung (BBR) (Hrsg.) (2006): "Bericht zur Lage und Perspektive der Bauwirtschaft 2006". From: www.bbr.bund.de. Publications found here.
4. See Fachinformationszentrum Karlsruhe [Ed.] (2002) et al: "Altbau. Fit für die Zukunft". Basis Energie 11. BINE Informationsdienst. In: www.bine.info/pdf/publikation/BILD1102.pdf; accessed on14.10.2008.
5. www.epa-ed.org
6. Schader-Stiftung (2005): "Prognosen der Wohnraumnachfrage bis 2030 in Ost und West"; from: www.schader-stiftung.de/wohn_wandel/851.php; accessed on 14.10.2008.
7. Bundesverband deutscher Wohnungs- und Immobilienunternehmen e. V. (GdW) [Ed.] (2006): "Bauen und Wohnen im Lebenszyklus" Documentation of symposium on 17. January 2006 in Essen. GdW Information 116.
8. Bringezu, S. (2004): Erdlandung. Navigation zu den Ressourcen der Zukunft. Stuttgart /Leipzig.
9. Final report of the Enquête commission "Schutz des Menschen und der Umwelt", loc. cit.
10. Bringezu, S. (2004): Erdlandung, loc. cit.
11. Bringezu, S.; R. Behrensmeier et al. (1998): "Material Flow accounts indicating environmental pressure from economic sectors. Environmental Accounting in Theory and Practice." Uno, K.; Bartelmus, P.; Dodrecht, P. Kluwer Academic Publishers: Boston, London.
12. Wallbaum, H.; Herzog, C. (2001): "Am Anfang war der Mensch". In: Politische Ökologie 19 (71), 33-36.
13. Jörissen, J., Coenen, R., Stelzer, V. (2005): Zukunftsfähiges Wohnen und Bauen. Herausforderungen. Defizite, Strategien. Edition sigma, Berlin.
14. Russig, V. (2006): "Bauwirtschaft auf moderatem Wachstumskurs". Selected results of Euroconstruct winter conference 2005, in: ifo Schnelldienst 3/2006.
15. See http://www.umweltdaten.de/publikationen/fpdf-k/k2600.pdf
16. Umweltbundesamt (UBA) (2004): "Nachhaltiges Bauen und Wohnen in Deutschland. Stoffflussbezogene Bausteine für ein nationales Konzept der nachhaltigen Entwicklung – Verknüpfung des Bereiches Bauen und Wohnen mit dem komplementären Bereich 'Öffentliche Infrastruktur'". UBA texts 1/2004.
17. Arthur D. Little GmbH (ADL), Wuppertal Institut, Fraunhofer Institut für System und Innovationsforschung (ISI) (2005): "Studie zur Konzeption eines Programms für die Steigerung der Materialeffizienz in Mittelständischen Unternehmen". Final report.
18. ibid.
19. mipsHAUS-Institut. As yet unpublished. See www.mipshaus.de
20. Arthur D. Little GmbH (ADL), Wuppertal Institut, Fraunhofer Institut für System und Innovationsforschung (ISI) (2005), loc. cit.

Fig. 1: Access to global material flows



Per capita access to global material flows, a basis for material prosperity, is at present unequally distributed between "south and north". If the population of the developing countries doubles and consumption is equalised, then based on the present material-intensity of Western economies, seven times the amount of resources will be needed by the year 2050. To contribute to stabilising the ecosphere, on the other hand, calls for present global consumption to be halved. This would require dematerialising Western economies by an approximate factor of 16.

Fig.2: European building stock divided into building periods



SOURCE: NATIONAL AGENCY FOR ENTERPRISES AND HOUSING: HOUSING STATISTICS IN THE EUROPEAN UNION 2003. DENMARK 2003

Fig. 3: Structure and development of old building renovation in Europe 2005 divided into performance categories

	Extensive modernising		Partial retention and improvement of built infrastructure		Selective renovation	
	Percentage	Trend	Percentage	Trend	Percentage	Trend
Germany	20	↗	30	↗	50	↗
Finland	10–15	↗	35–40	↑	45–50	↑
France	10–15	↗	35–40	↗	50	→
United Kingdom	40–50	↗	30–40	↗	15–25	→
Italy	20	→	30	→	50	↗
Netherlands	15	↗	35	↗	50	↗
Portugal	10	↗	25	↗	65	→
Sweden	<15	→	30–40	↗	40–60	↗
Slovakia	10–15	↗	15–25	↗	50–60	↗
Spain	15–20	↗	25–35	↗	50–60	→
Czech Republic	15	↗	30	↗	55	↑
Hungary	15–20	↘	55–75	↑	15–20	→

SOURCE: EUROCONSTRUCT/IFO INSTITUT FÜR WIRTSCHAFTSFORSCHUNG (BARCELONA CONFERENCE, 2005), IN: IFO SCHNELLDIENST 3/2006

MORE SPACE, MORE LIGHT

By Hubertus Adam

Modern architectural trends since the early 20th century have seen the desire for light and well-lit accommodation become widely established. In the case of conversions, this often involves increasing the residence's quality by using incident light to best advantage rather than simply expanding the living space.

Left **Dealing with old buildings often requires a great deal of stamina. Over a period of 20 years, Swiss architect Boa Baumann converted a semi-dilapidated country house in Piemont into a place to live and work for the drummer Fritz Hauser.**

"Light, air and sun", that battle-cry of Modernist architecture, has made lasting changes to housing. From the earliest civilisations until well into the modern era, a dwelling's main function was to protect the occupants: from wind and weather, from intruders and enemies. In such a solid shell, the necessary openings were the weak spots. They were therefore minimised. That sheet glass was expensive and could only be produced in limited size was all the more reason for this. Larger-scale expanses of glass would be used only where functionality was less important than an imposing appearance, for instance in Gothic cathedrals and baroque castles. Simple homes, on the other hand, had few windows.

Modernism responded to the call to open up homes from reformist ideology of the period around 1900. Faced with overpopulated and polluted cities with squalid tenements, the reform movement agitated for a natural way of life. Architects of the twenties translated hygiene discourse theories into construction terms with light, white apartments – creating an extremely consistent look for modern housing. This new attitude towards life was a rejection not only of the atrocious standards of housing for workers, but also of the turn-of-the-century upper middle class drawing room, kept in perpetual twilight by heavy curtains and dark furniture, and now frowned on as stuffy.

'Befreites Wohnen' ('Liberated Living') was the title given in 1929 by Sigfried Giedion, one of the most influential propagandists of the Neues Bauen, to a manifesto in pamphlet form. According to this manifesto, a beautiful house was "one that is in harmony with our sense of living. This requires light, air, movement, openness."

The horizontal window and the continuous bands of windows – which were not least a reaction to lower room heights – as well as exterior spaces are among the most important characteristics of Neues Bauen. Balconies, which up until the early 1870s were largely intended for display, now became open-air rooms for the purpose of recreation and revitalisation.

PHOTO: ANDREAS FAHRNI

BUILDINGS OF THE RECONSTRUCTION IN NEED OF RENOVATION: LARGE POST-WAR HOUSING COMPLEXES

This new living environment was represented in its ideal form by the villas of Mies van der Rohe or Le Corbusier. They firmly etched the Neues Bauen aesthetic into the consciousness of posterity. However, the theories were only of limited relevance to the real modern architectural challenge – creating subsistence-level accommodation. After the Second World War, the functional construction sector followed on from the plain apartments of the pre-war years. Today, the large housing estates of the fifties, sixties and seventies often represent a problem – whether in the West or in the former Communist East. They are not suited to today's energy standards or to the requirements generally expected of flats today. Demolition is often considered as a possible solution, but there are alternatives. Four years ago, the architects Anne Lacaton and Jean Philippe compiled a study commissioned by the French Ministry for Culture on how to deal with large housing estates. This study claimed that their low density and unobstructed view of the surrounding landscape has a potential that makes transformation a better prospect that demolition. Lacaton and Vassal currently use a 17-storey tower block near the Boulevard Périphérique on the outskirts of Paris to demonstrate what a modern renovation might look like.

On the exterior, all flats are given a conservatory and a balcony zone, increasing depth by more than three metres. The new spatial zones surround the building like scaffolding. The existing exterior walls are replaced with glass frontages with sliding doors. This creates extremely generous outdoor spaces with a graduated system of sun protection and shade.

A lack of outdoor living space is also a key failing of existing slab-construction buildings in the former GDR. A few years ago, the architect, who lives in Frankfurt/Main, implemented a daring project utilising the slabs' assembly and disassembly system in an original way in Leinefeld in Thuringia. By eliminating every other stairwell and demolishing the topmost storey, a row of slab-construction blocks was converted into eight four-storey town villas. Balconies and large windows gave the flats an entirely different character: the original uniform sequence of single windows gave way to a series of rooms with different sized windows.

PLUG-INS AND ROOF EXTENSIONS: HOW NEW LIVING SPACE IS CREATED

The principle of adapting existing buildings to today's requirements rather than demolishing them is steadily growing in importance in the age of sustainable construction. Architects

PHOTOS: RUPERT STEINER

In 2003, Delugan_Meissl from Vienna placed their residential building "Ray 1" on the roof of an inconspicuous office building from the 1960s. The sculpture-like building is made of glass and aluminium and rests on a steel skeleton mounted on the exterior walls of the old building.

PHOTOS: BLAURAUM ARCHITEKTEN, CHRISTIAN SCHAULIN, GIOVANNI CASTELL

blauraum architeken from Hamburg converted an unprepossessing commercial building from the year 1974 into a block of 15 apartments. The building was fitted out with new building technology and was given a new wood-panelled facade with protruding "boxes" that can be individually used by the occupants in different ways.

have long been dismissive of such construction projects, as they were considered to have low prestige. This time is past. Today there are numerous examples of very diverse ways of combining old and new.

One topic which will be significant in the future is the conversion of business premises into residential buildings. A pioneer project was recently implemented by the Holzer Kobler Architekturen firm in the Giesshübel district in Zurich. The architects, who floated and found an investor for the conversion project for an administrative building of the retail chain Globus themselves, favoured a hybrid mixed use with business premises on the ground floor, offices on the first floor and apartments in the two full storeys above and in the roof space.

The facade, dating from 1956, remained largely unchanged. The showcase-like frames, each with three vertical rectangular windows, staggered between storeys, create a new level in front of the facade, interrupting the already present window bands. Living in the apartments is like living in a loft. Anyone wishing for a traditionally structured room will encounter lighting problems due to the building's depth. The absence of outdoor space is compensated for using the roof. Occupants on the lower storeys can also rent a roof garden.

The blauraum architecture group adopted a different strategy in Hamburg-Harvestehude. In 2005, a four-storey office block was converted to accommodate 15 owner-occupied apartments. The outer skin, made of synthetic resin tiles with natural wood laminate, looks homely and almost totally conceals the architecturally banal commercial building. But the building's real speciality is the cubes suspended from the external facade. Measuring eight square metres each, they accommodate the functions that could not be contained in the existing ground plans, such as a vestibule, a sauna, a loggia or a bath. With their windows sideways on to the facade, these outward extensions also help to make the apartments more airy in terms of natural light occurrence.

It should be said that sometimes architectural interventions in existing buildings are restricted to the roof areas. For residential buildings as well as others, there is often the potential to increase the density, to add additional storeys or extensions. The roof extension in the Falkestrasse (1983–88) in Vienna by Coop Himmelb(l)au, a key work for deconstructivism, has become iconic. In the last few years, two younger Viennese firms have taken on the same assignment. In 2002/2003 Delugan Meissl installed a flowing spatial landscape with Alucobond cladding on a 1960s office building in the Austrian capital's fourth district.

This aluminium-glass creation, oscillating between futurism and minimalism, houses a flowing residential landscape which interacts with its environment on several levels thanks to the glass frontages and terraces. Almost all articles of furniture are fixtures, making the whole object appear to be an enormous piece of furniture. In the Klostergasse, the firm lakonis architekten, also based in Vienna, succeeded in integrating several apartments into the roof space. Two tiers of terraces and a herb garden serve as outdoor space for these roomy new living areas, which can only be seen from street level due to two aluminium points projecting over the roof edge.

A spectacular roof extension has recently been built on a bunker north of the Friedrichstrasse station in Berlin. This relic from the Second World War, which served as a location for techno parties after reunification, was converted by the architecture firm Realarchitektur for the art collection of Christian Boros. The residential structure for the collector and his family, which is glazed all round and sits on the roof like a penthouse, creates the strongest contrast imaginable with the artificially lit gallery rooms behind the metre-thick concrete walls. Having traversed the cleft sawn into the three metre thick roof of the bunker, visitors finds themselves in a light-flooded apartment.

The roof extension for the family of the wigmaker Didden in Rotterdam, the first project to be carried out by MVRDV in its home city, has a markedly less conventional appearance. The parents' and two children's bedrooms appear to be "primitive huts" – archetypal buildings – and are reached via steps from the habitable loft space in the storey below. As well as the miniature houses, benches, showers and trees can be found on the roof level. Gaps in the parapet reveal a view of the city. All elements are coated with blue polyurethane. The 'Didden Village' is a big play area, an artificial heaven.

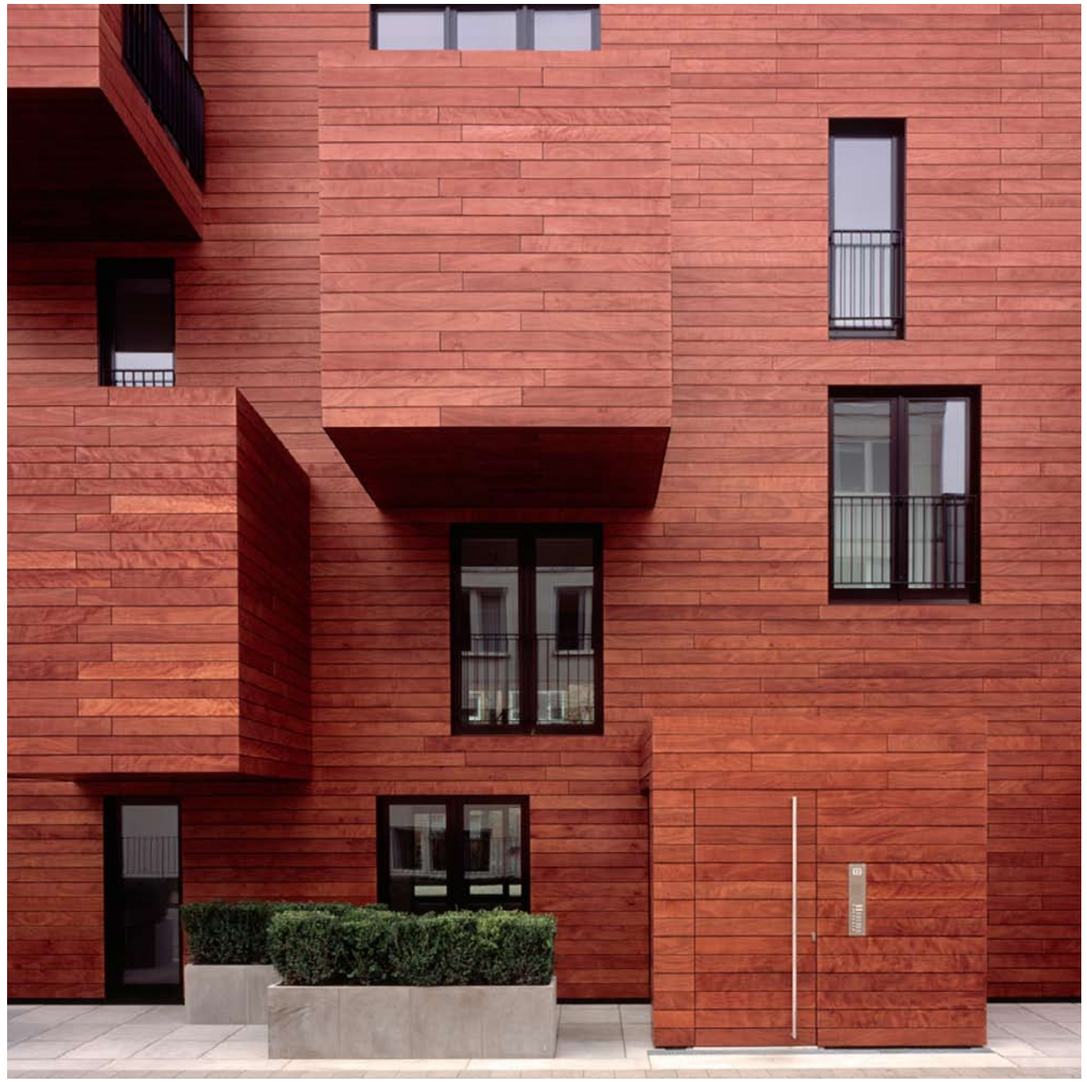


PHOTO: ANDREAS FAHRNI

PHOTOS: CHRISTOPH KRANEBURG

ENCASED AND PUT IN A SHOWCASE: THE ONION METHOD OF EXPANSION

Stacking, layering and compacting are recurring strategies for the Dutch avant-gardists MVRDV. For instance, there is the conversion of two huge seed silos in Copenhagen Harbour into apartments. The huge concrete cylinders serve as a support structure for the radially oriented, glazed apartments depending from their exterior. They are accessed via passages and lifts in the interior. The most impressive elements are the huge atrium spaces within the former silos, which are now roofed over with glass domes.

The Danish architect Dorte Mandrup took on a similar assignment. She transformed a water tower dating from 1955 outside Copenhagen into a youth hostel. The individual room cells, connected to the centre, were inserted between the existing struts supporting the tank in 'plug-in' fashion. Large windows on the exterior, some angled or projecting like display cases, allow light to penetrate into the depths of the space.

However, conversion and expansion are after all also relevant for smaller residential buildings. In Oberursel in Taunus, a holiday home dating from the beginning of the 20th century was encased in a cube by the Frankfurt architect Meixner Schlüter Wendt. Part of the space between the old and new walls is used to enlarge existing rooms – as if on the model of an extrusion – and part of it remains as enclosing space. In any case, a bright intermediate layer is created which is fully glazed at the front, effectively drawing attention to the radical coming together of old and new.

For his house for the drummer Fritz Hauser at Costigliole d'Asti in Piemont, the Bern architect Boa Baumann adopted a more discreet strategy. Hauser had acquired an unprepossessing, semi-dilapidated house and stable building among the vineyards, which Bauman converted and gave a brick skin with cross-shaped holes. This is a traditional element of barns in the region. This open filter masonry gives a diffuse light. In summer it acts as sun protection. The living room has a view of the landscape via a large panoramic window. The house, whose first floor has features of a stage, is both a living and working place. According to Fritz Hauser, drummers are usually banished to the cellar. At last he can work in the light.

Above **The old re-interpreted: The window openings of the country house belonging to Fritz Hauser in Piemont were sealed on the outside with filter masonry made of old bricks that keeps the light diffuse and the interior climate constant in summer.**

Left **Meixner Schlüter Wendt Architekten created a "house in a showcase" in Oberursel. The residential building from the 1930s was actually supposed to make way for a new larger building but, instead, the architects decided in favour of a literally "all-round" conversion. An accompanying effect was that the building was adapted to modern energy requirements as a result.**

Hubertus Adam studied art history and archaeology and works as an architecture critic and publicist. He has been editor of the Zurich-based magazine "archithese" since 1998. Numerous books, articles in books and magazines and architecture reviews for the "Neue Zürcher Zeitung".

LIGHT FOR CHIMNEYS

Chimney Pot Place in Salford

By Oliver Lowenstein
Photography: Torben Eskerod

One element of earlier times has almost completely disappeared from modern, energy-efficient residential buildings: the chimney, formerly a symbol of sheltering domesticity. In the remodeled terraced houses in the north English 'Chimney Pot Park' they have been replaced by distinctive light wells designed to bring daylight deep into the interior of the buildings.

Page 60–61 **Only the cubature and the restored brickwork facade of "Chimney Pot Park" were retained when the buildings were renovated. The "light chimneys" on the roofs and the floor plan inside are new.**

Right **Between the rows of houses where there used to be sheds and vegetable gardens, a planted communal terrace serves as an extension to the dwellings.**

The last twenty years have been a period of massive change across the swathe of northern English cities that were once the heart of Britain's Industrial Revolution – the port city of Liverpool (this year Europe's City of Culture), its immediate neighbouring competitor, Manchester, the various Yorkshire mill-towns such as Leeds and Bradford and England's Rurhrgebiet steel-town, Sheffield. By the 1980s, all these cities were experiencing serious economic decline. The industries that were the source of their nineteenth century economic success and social sustenance, and that continued to sustain them through the first half of the twentieth century, had gone. As early victims of globalisations these cities – like many comparable industrial regions across Europe – saw core industries relocate to more competitive parts of the globe. The downturn in fortunes not only brought unemployment to hundreds of thousands but also led to thousands of hectares of industrial buildings falling empty and the beginning of a downward spiral of gradual disrepair and decay.

Throughout the '80s, most professionals in the building sector – from Government and city authorities, to planners and developers – appeared to have no clear strategies of what to do with these symbols of modern urban wasteland. In the last fifteen years, however, and particularly since Tony Blair's new Labour project came to power, large sums of money have been poured into these cities, much in the form of public-private partnerships aimed at renewing the building fabric of these once proud metropolises. Some have proclaimed this as an urban renaissance, while others are more sceptical. What is evident is the amount of new building that has been going on over the last decade.

The renaissance of industrial cities

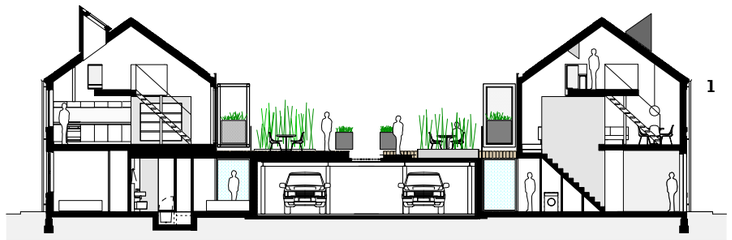
One of the companies most associated with spearheading these changes has been the Liverpool development and regeneration specialists, Urban Splash. In the last fifteen years, they have become one of the highest profile developers in Britain, specialising in revitalising older industrial buildings across the run-down urban fabric of Britain's cities. It is a palpable over-exaggeration to say, as a few articles have claimed, that Urban Splash's founder, Tom Bloxham, a politics and history graduate from the University of Manchester, single-handedly kick-started the regeneration of these Northern cities by re-imagining the defunct industrial sheds, warehouses and factories recast as trendy venues for loft living. But Bloxham's company has been very successful in demonstrating how to breathe new life into such previously moribund urban fabric. Where other developers only saw unusable bricks and mortar, with no hope for new commercial rejuvenation, the Urban Splash team were instrumental in re-inventing old inner-city warehouses as design-led and fashionable loft conversion spaces for professionals and then selling these as hip and happening life-style choices. Working with well-regarded architects, including one of their original Liverpool partner's shedkm, in recent years the company has expanded into London, the Midlands and the South West.

While cities in the north-west have been full of empty industrial buildings, if you take a journey north it is hard not to notice that the cities, towns and outlying villages are also full of small terraced housing, tightly packed in row upon row formation, the ubiquitous red marking them out as being built from English industrial revolution's most archetypal material – brick. This is where much of the work-forces of the cities industries lived, and despite the coming and going of sixties brutalist high-rise, the proliferation of estates and suburbs spilling over the edges of many towns, the nineteenth century brick terrace remains a mainstay of the North's urban fabric. Again, with these terraced buildings often at the limits of their normal lifetimes, the question of what to do with such building stock has been repeatedly on the lips of many. Now in a sideways move, Urban Splash, working with shedkm, has attempted to provide an answer to that question – just a short distance from the city that Bloxham began his career in.

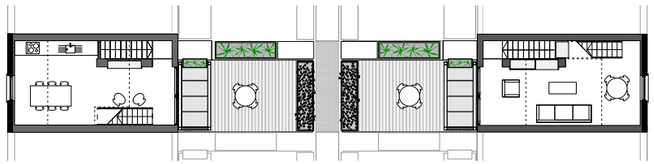
A redevelopment model for England's terraced housing

Salford, part of Greater Manchester and just a mile or so from its city centre, is one of the best-known fixtures on the North's regeneration map. With high unemployment and some of the poorest city districts in the country, the 37 sq mile authority has been the recipient of ongoing regeneration for several decades. This has resulted in some landmarks, including Salford's Manchester Docks boasting Liebeskind's Imperial War Museum, the Lowry Arts Centre and various other high profile attractions. A short journey on Manchester's tramway – another regeneration sign – over the Manchester Ship Canal, through the new high-rise and warehouse loft living, and after crossing one of those invisible building-type boundaries you find yourself in a distinctly low-rise part of Salford, the Langworthy district. It is here that Urban Splash and shedkm have joined forces again to try their hand at a rebuild experiment in the dense low-rise of an interlocking set of terraced streets. Chimney Pot Park consists of a 400-house terraced grid, and with its proximity to the tramway it provides a thought-provoking and alternative exemplar of compact, high-density city living to the high-rises that dot the inner-city skyline. Originally slated for replacement with a conventional estate in 2000, local petitioned both Salford local authority and their local MP and Government minister, Hazel Blears, to see if there could be another way to develop the disused housing. Initially, Blears' efforts were unsuccessful. However, she happened to speak with James Weston, one of shedkm's directors. Intrigued, he went to see the site and apparently began imagining the possibilities of a terrace-build for the twenty first century. The architectural challenge appealed to him and Weston began talking with Urban Splash and persuaded them that a contemporary terrace makeover could work. With Salford City Council, English Partnerships, and the North West Regional Authority, £26 million was raised, and work began on site in December 2004. Since that time, it has been Weston's dogged commitment that, according to project architect Martyn Thomas, has seen Chimney Pot Park through to completion.

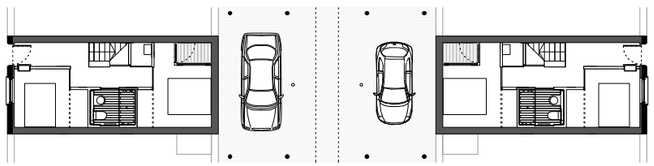
Four years on and Chimney Pot Park feels self-contained and separate from the housing it abuts onto. The streets are clean and electronically controlled bollards allow those with the right smart code to drive in and out. Where before graffiti and wildlife edged through the cracks in the concrete, a sense of the designers having visited is keenly apparent. The terrace facade's red



1



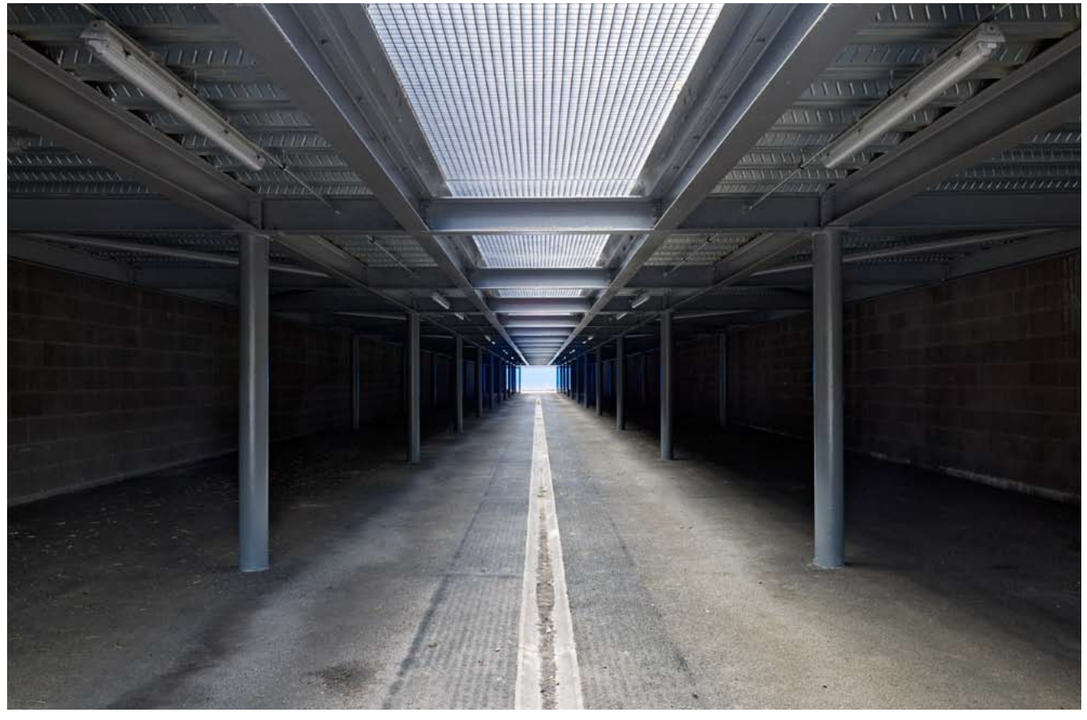
2



3

1. Cross-section
2. Ground plan of 1st floor
3. Ground plan of ground floor

Right **The same perspective – on the first floor and on the ground floor. Above, plant tubs divide up the wood-covered communal terrace to provide the occupants with a minimum of privacy. Below, car ports protected against the weather were placed.**



brick has been freshly scrubbed, the brickwork is framed amidst a contemporary colour psychology – that of modernist grey, white and black. New tiles make up the grey roofing while the rear walls have been rendered, again in white. There is a feel of the modern, but also of the neighbourhood's Victorian past, providing another gloss on the retro-Victoriana that has become increasingly evident in different guises across Britain in recent years.

Every square centimeter has been put to use

Stepping into the remaining showroom you are immediately confronted with further psychological tricks mixed with technical gamesmanship. How is it the architects have re-proportioned the space to provide the sense that this small terraced house can feel so much, or at least significantly, larger than you anticipate? They are, after all, working with exactly the same volumes of the original terraces, even if today sq metreage of the different units ranges from 62 to 100 sq metres. To an extent, this is down to the psychology of space; centimetres have been shaved off wherever possible – such as sunken baths in each bathroom. The larger strategy, however, has been to turn the room use upside-down, with kitchen and living room dropped into the first floor upstairs volume, while the bedrooms are on the ground floor. This is a variation of what is known in Britain as 'two-up, two-down' – four-room terraced houses, the dominant industrial housing for inner city districts prior to the arrival of estates, suburbs and high-rise. Here the two ground floor bedrooms are compact, and as Martyn Thomas says, are meant "for sleeping, rather than living, in". shedkm designed two unit types; those with first floor kitchen and dining area, with an extra mezzanine space hung across the opened garret/loft space, in effect adding an extra room. And secondly, a larger open living and work space, with a smaller kitchen built into the mezzanine. Thomas agrees that opening up the attic space has been the key to providing both the real and perceived extra space the units have. From here, first floor glass windows open onto the shared communal deck/garden, another exercise in space optimisation. Historically, terraced housing included a back yard, providing for any number of uses. shedkm have done away with the yards, roofing them over and joining them to the opposite terrace. This has allowed for the communal first floor garden of herbs, plants and wooden slats decking. On a hot summer's day, this looks as if it could well be an attractive public-private space to relax in, although whether it completely substitutes for a garden remains an open question. Underneath, in place of the yards, are garage spaces.

Chimneys into light wells

The chimney pots are no longer chimneys at all, but have been ingeniously put to a more contemporary use, what in Britain is called the 'right to light' with lightwells fitted, letting in natural light to otherwise dark ground floor bedrooms. Thomas describes these as off-the-shelf light wells that have been used in "a way that's a little bit more exciting than usual". Outside, the faux chimney-stacks are one of the most distinctive features of the whole terraced site – they are head-turning in their oddity, adding to the twenty-first century hybrid Victoriana

Left **All the houses have a new mezzanine area directly under the roof. In some apartments, it is used as a living room and, in others, as the kitchen.**

Right **The "light chimneys" endow the houses with their striking silhouette and make formal reference to the chimney stacks of the fossil age. The roof windows are inclined towards the other roof surfaces.**

of the estate. Who knows, perhaps one day the terraces will be called Lightwell Park.

So far, those who have moved in appear to have speak only praise of this contemporary version of terrace living. It seems Urban Splash has successfully transferred its brand of loft living to the terraces. Apart from that, Chimney Pot Park's grid of terraces sit on exactly the same footprint as the original houses, providing a new example of high-density urban living. Thomas is in agreement that the estate, if that is what it is to be called, has much potential in terms of English compact city issues. Chimney Pot Park provides densification, as well as low-rise and significant eco-footprint reductions through being rebuild rather new build. This, in spite of the fact that only the terraces' retaining walls remain from the original buildings, and that these have been steel framed, Along with a number of architectural and housing awards, Chimney Pot Park received an "excellent" rating in its Ecohomes assessment, partly because of its palette of materials. And certainly the project brings brick, so central a part of North England's industrial tradition, back into its element. Even if it is more of a starting point than a last word in high density eco-living, Chimney Pot Park provides the north of England with a new model of re-build to work with, develop further and, literally, build on.

Oliver Lowenstein runs the cultural review Fourth Door Review, www.fourthdoor.co.uk

Facts

Type of buildings:	349 terraced houses
Client:	Urban Splash, Manchester, UK
Architects:	shedkm Architects, Liverpool, UK
Location:	Chimney Pot Park, Langworthy, Salford, UK

686 LIGHTS OF TOMORROW

PATH STATION, SHADOW ANALYSIS OF PLATFORM AREA 7 SEP – 8:30 AM

PATH STATION, SHADOW ANALYSIS OF PLATFORM AREA 21 JUNE – 8:30 AM

PATH STATION, SHADOW ANALYSIS OF PLATFORM AREA 21 SEP – 5:30 PM

PATH STATION, SHADOW ANALYSIS OF PLATFORM AREA 21 JUNE – 5:30 PM

Is there a growing interest in daylight among young architects? It seems so – at least if you consider the results of this year's International VELUX Award for Students of Architecture. More projects than ever – 686 in total – were submitted for the award, which the chairman of the jury, Hani Rashid, called "an incredible outpouring of ideas". Before the prizes were awarded on 7 November in Venice, Daylight&Architecture spoke to the three prizewinners about their projects.

FACTS

Award:
International VELUX Award for Students of Architecture

Theme:
Lights of Tomorrow

Number of submitted projects:
686 – all projects are available at www.velux.com/iva

Jury members:
Hani Rashid (chairman; Asymptote Architecture, New York, USA) Enrique Browne (Enrique Browne & Associates, Santiago de Chile, Chile) Eva Jiricna (Eva Jiricna Architects, London, UK) Huat Lim (ZIgDesign, Kuala Lumpur, Malaysia) Francis Nordemann (Ecole d'Architecture de Paris Belleville, Paris, France) Michel Langrand, General Manager, VELUX France (France)

Jury session:
25/26 June 2008 in Turin

Award ceremony:
7 November 2008 in Venice

Total prize sum:
€30,000

1st prize:
Reilly O'Neil Hogan
Cornell University (USA):
"Embodied Ephemerality:
Light-Form Architecture"

2nd prize:
Ruan Hao and Xiong Xing
Tsinghua University (China)
"Interface-Repairing Light Festival"

3rd prize:
Dean MacGregor
Universidade Lusíada de Lisboa (Portugal)
"Light Has a Body"

1ST PRIZE

Reilly O'Neil Hogan
Cornell University (USA):
"Embodied Ephemerality:
Light-Form Architecture"

In his project, Reilly O'Neil Hogan explores how to challenge the daily city routines by getting off the subway at the wrong station: "The moment you miss your usual stop and are forced to drift from your routine, you perceive the city with new eyes. The intent of the project is to invert this phenomenon, so one has the joy of experiencing a place of daily passage that unexpectedly transforms itself through time".

A specific location – the PATH Station in Lower Manhattan – is chosen to explore this idea through the careful projection of sunlight into the underground space of the commuter during the peak hours of 8am to 9am and from 5pm to 6pm.

The jury stated "the project promotes the idea of bringing daylight and sunlight into people's daily routines in the subway, where daylight experiences usually are non-existent. The conceptual idea is very articulated and the project is accomplished and very efficient in scale."

2ND PRIZE

Ruan Hao / Xiong Xing
Tsinghua University (China)
"Interface-Repairing Light Festival"

The formation of a city – with its distribution of buildings, their height and the distances between them – has a considerable impact on the available sunlight. Many spaces in densely-built cities are literally 'left in the dark' for most of the day.

Ruan Hao and Xiong Xing challenge this problem by suggesting a one-day sunlight festival for the city of New York. Their project consists of mirror installations on selected daylit facades that variably redirect sunlight to the shaded parts of the adjacent streets and buildings. With the project, the authors want to raise the awareness of the importance of sunlight, both in design and in daily life, to architects and people in the cities.

The two architects describe their project: "As a result of urbanisation, we have witnessed the decades-long transformation of high-density cities, in which more than half of the city surface is building facades. The transformation of a city's sunlight interface has always generated negative dark areas. We created an installation designed to decrease these areas of shadow by means of reflection through an opposite facade."

According to the jury, "this is a project full of poetry and the approach pushes the traditional metropolis – as anti-advertising – and with a focus on democratic light, where the city shares lightness and darkness."

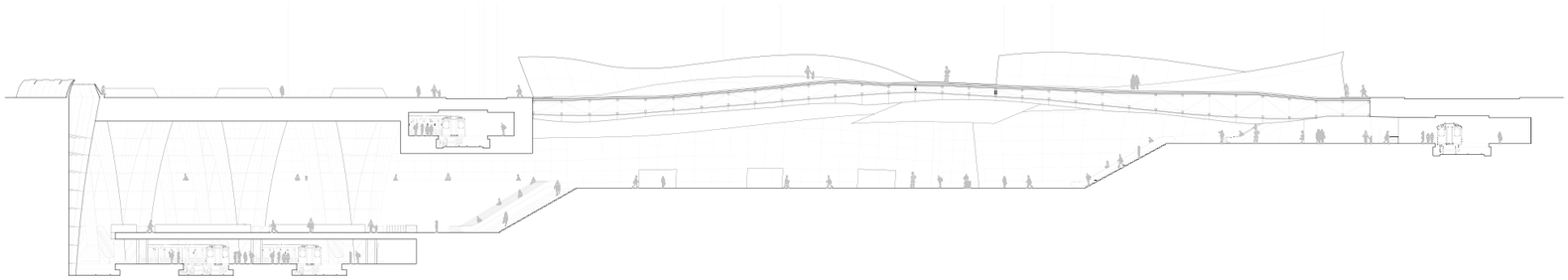
3RD PRIZE

Dean MacGregor
Universidade Lusíada de Lisboa (Portugal)
"Light Has a Body"

Large underground spaces – be they subway stations, exhibition areas or concert halls – are often conceived as places without daylight, relying solely on artificial lighting to make them inhabitable. In his project, Dean Carlo MacGregor conceives a playful means of naturally lightening these spaces up. The only link between 'the inside' and 'the outside' world above – in this case, a city square – is large masses of water in transparent glass tanks that capture daylight from above and emit it to the interior.

Dean MacGregor says of his project: "I wanted to show that light can be seen as a physical dimension. You can see and feel light. But contemporary architecture is about how you open a window and how light enters in a certain way. I wanted to transform this invisible thing that everyone recognises into a mass of light. To do that, I used the water. This stops the light for an instant and refracts it to the interior of the space – and creates a body of light."

The jury was intrigued "by the fragile, straightforward and playful idea – probably inspired by looking at the play of light in a wine glass; here transformed into the larger scale of a museum. On this scale, the vessels – used as condensers of light – will have a powerful influence on the space due to liquid movement and colour variation, and the sunlight is transmitted to the floor by the glass columns. The project is a celebration of light and it has its merits in vision and in sublime poetry by marking light phenomena and mystery."



The winning design of Reilly O'Neal Hogan makes it possible for commuters in New York's subway system to experience the variations in daylight. At peak hours every day, sunlight is deflected downwards by a reflector, where it is projected onto translucent surfaces.

MAIN CONCOURSE 21 JUNE – 5:30 PM

MAIN CONCOURSE 21 SEP – 5:30 PM

MAIN CONCOURSE 21 JUNE – 5:30 PM

Reilly O'Neal Hogan: "I want to understand the importance of light in defining the quality of space"

D&A: Your project for the International VELUX Award was the conversion of a subway station in downtown Manhattan. What raised your interest in this specific place and what is the situation there at the moment?

ROH: Directly adjacent to the former site of the World Trade Center and the future site of the World Trade Center Memorial, the PATH station will become a place that over 35,000 commuters will pass through each day. These commuters, be they bakers or sandwich shop clerks, will experience this station twice daily for many years. Although not the 9–11 Memorial, the design for the station presents an opportunity to honour the memory of those lost that day by elevating the everyday experience of the place. I saw the station as an opportunity to use the ephemeral power of light to bring moments of joy to people's daily lives. Whereas the memorial is a destination, a place to visit, the train station is the opposite: it is a transitional space honouring the hallowed nature of the site by heightening the experience of the commuter who lives or works in Lower Manhattan.
Currently there is a temporary station that allows people to reach the lower tracks of the PATH train and connect to the subway. It lies at the edge of ground zero, a fenced off gaping hole in Lower Manhattan, awaiting the construction of the memorial and surrounding towers. In reality, a new transit hub designed by Santiago Calatrava will replace the existing temporary station.

D&A: Using daylight, you have given a former non-place (or Junkspace, as Rem Koolhaas would have called it) a "sense of place". What were the principal architectural means of this transformation?

ROH: The goal of the project was to suggest an architecture that continues to engage the audience, i.e. the commuter, time and time again as the place becomes more and more familiar. Through a heightened sensitivity to moments of light, shadow, and the changes of the seasons, could one design an interior place that represents itself through time?
The principal concept of this architecture was a reconsideration of the relationship between light and the interior. Moments of light are captured and amplified by refraction, a transformative relationship between light, a device, and the surface of the interior. The concept of an opening, rather than operating as a bracket as in the Sky Spaces of James Turell, becomes a refraction between light from the exterior and its projection on the interior. Through this concept of refraction, I worked to dematerialise traditional boundaries of space (wall, ceiling, column) by allowing them to become conductors of reflected light from above. Refraction introduces an intentional distortion between the exterior environment and the viewer – light is shaped and redirected via a reflector and projected onto a translucent surface, wrapping the interior with embodied light. A potentially monotonous daily experience of the subway where the commuter is disengaged with no relationship to the station now becomes a highly aesthetic experience that changes with the weather, the daily path of the sun and the seasons.

D&A: What methods and tools did you use to simulate and assess daylighting during the design process?

ROH: Computer simulations proved to be highly cumbersome when dealing with caustic light (light reflected or refracted by a metallic or glass surface onto another surface), and rapid experimentation was difficult. So I worked almost entirely through physical models. The physical model has the added benefit of engaging actual materials and their properties, albeit only an approximation of their full scale counterparts, to achieve effects of reflected light on the interior, which could be easily documented through video or photography.
Using a powerful direct stage light to simulate the sun angles and a small video camera embedded in the models with a live feed to a laptop, it was possible to carefully angle and shape the reflectors to optimise the interior effect for each design time. The column, wall, and initial concourse studies were conducted with this method. The models were then tested and photographed in actual sunlight. The final concourse study was first modelled digitally, using the four sun angles to design the ceiling's reflectors and glass, and then modelled physically to test and photograph.
Changes in sun angles could be quickly simulated and documented by adjusting the light in relation to a sundial on the surface of the model. This was documented through a series of photographs. This was an invaluable method for working with these effects, allowing for rapid experimentation and the ability to judge how effects would be perceived on the interior.

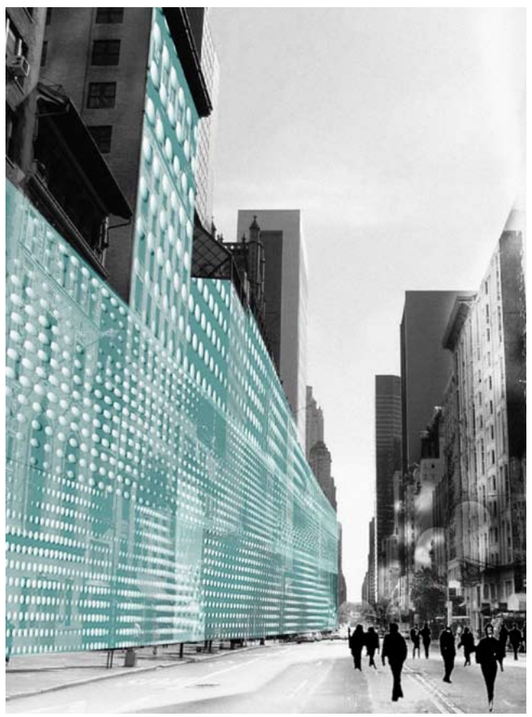
D&A: What role does lighting design, especially daylighting design play in the teaching agenda at your university?

ROH: In my experience, designing with light does not play a central

SHADOW ANALYSIS OF MAIN CONCOURSE

Below **New York in an unusual light: In their design, Ruan Hao ind Xiong Xing propose a one-day daylight festival for the metropolis on the Hudson river. Large reflectors mounted on the facades of high-rise buildings are intended to divert daylight into the normally shadowed ravine-like streets.**

Right **Water tanks that capture light – This was the concept formulated by Dean MacGregor in his submission to the competition. The tanks stand in an open square and disperse daylight downwards below ground where there is an exhibition or concert hall.**



role at the school. When it does, it is primarily a technical, performance-based pursuit. My interest in light is more of a qualitative pursuit, understanding the importance of light in defining the quality of space and the experience of the occupant. Designing through light has been my personal interest, rather than one taught through the school's curriculum, and I have carried it through a number of studio projects at Cornell. Now that I have the opportunity to help teach first-year design studio as a Teaching Associate, I have often raised light as a central design consideration. By emphasising the importance of light to the quality of space, it is my hope that the students will continue to develop a sensibility to light in their design work in the future.

Ruan Hao and Xiong Xing: "Do we design a design, or do we design for better life?"

D&A: In your project for the International VELUX Award you suggest a temporary "daylight festival" to lighten up street spaces in densely built city areas like Manhattan by large mirror surfaces on building facades. Was this idea based on your personal experience with hyper-dense metropolises?

RH/XX: From our living experience in several metropolises worldwide, we noticed the impact sunlight has on the urban form. We have experienced the negative aspects in the shadow areas, especially in areas like Manhattan. Also accidentally, we noticed some areas in which a building facade lightens those negative shaded areas by means of reflecting materials, even if these were not specifically applied to the facades for this purpose.
Thus we decided to study those 'unconscious' areas between buildings, in the hope of turning the reflection of daylight into a positive and applicable method that could benefit the entire city.
This study would have never been possible without the experience we gained from digitally calculating potential solar radiation hours in each academic and professional project, due to the zoning code in Beijing. This experience eventually turned into a method for the modelling and estimation of the solar situation. As a result, we expanded our focus to the urban scope and its density.

D&A: What made you suggest a temporary daylight event, rather than a permanent installation?

RH/XX: When considering how to maximise the value of this design, we kept the balance between its architectural and social value. Rather than making a permanent installation, which is a second step as we see it, it is more important initially to make a first attempt to raise the awareness of sunlight as the indispensable life resource. The temporary installation in such distinct forms will transfigure the city image and articulate sunlight's impact vividly.
As mentioned, whether the installation should be permanent or temporary is not mutually exclusive. Changing existing conditions permanently to improve the solar situation is only possible if the prerequisites are solved through temporary experiments in advance. Then there are obstacles like the concomitant heat radiation, and particular conditions in sultry days, that make designing a permanent installation more complex. None the less we would like to consider the opportunity of researching a permanent installation – if we are financially permitted – with a great number of experiments.

D&A: Your project brings to mind the 'healing' qualities of light, both in terms of physical health and psychological well-being. Were these qualities part of your teaching curriculum at all, and do you feel that there is a sufficient awareness of them among young architects?

RH/XX: Despite the particular courses on (electric) architectural lighting, sunlight has remained one of the crucial parts of our architectural education throughout the years. However, personally we feel that the aesthetic value of lighting outweighs a little too much its environmental value in our curriculum. Looking back at how we were taught to utilise sunlight to make dramatic shadows and sculpting architecture spaces, we couldn't help but wonder, do we design a design, or do we design for better life?
In general, many young architects in China design for urbanisation. Under an inevitable situation of massive construction and rapid development, quality of life in our country has lost some of its priority. However, we are happy to notice that more and more students have joined us in the aspiration of expanding the function of light and search for more creative and effective use of sunlight as an indispensable natural gift.

D&A: Have you learnt anything from your project about how dense cities should be designed in order to allow more light into the streets? If so, what?

RH/XX: The complex and intricate issue of lighting in urban scale is far beyond a facade installation. Rather, it penetrates into all levels, from primary urban planning to the specific architectural design and even to our lifestyle in urban environments. Lighting is not the sole factor in planning a city, though an important one. A city whose surfaces receive sufficient light might not be comfortable in terms of the street scale, let alone being efficient for urban infrastructure. Thus the installation serves as a compensation, rather than an essential strategy in urban planning. One thing we did learn when it comes to light in the city is that architectural design is almost never restrained to a building itself. Architects should take the lighting conditions in the surrounding environment into consideration when designing buildings. We believe our streets will have better lighting conditions when interaction between buildings takes place.

Dean MacGregor: "My project has to be perceived as a living sculpture that is guided by what the exterior provides."

D&A: In your project, you suggest lighting up underground spaces via huge water tanks that capture daylight from the outside and disperse it within the otherwise dark interior space. Are there any observations from 'real life' that inspired you to carry out this project?

DM: There is a real life experience that I could relate to my project, in that it confronts our senses and reaches out to the 'other side' of architecture. It was projected by a Hungarian architect, Carlos Mardel, and built during the 18th century in the centre of Lisbon as a building used to contain and distribute water through the aqueduct for the city. In this building, known as Mãe d´Água das Amoreiras, 5,500m³ of water are kept inside a stone construction, and the water reveals itself as a living element inside the building. In this space, light has the capacity to cast shadows and lend a meaning to what Peter Zumthor refers to as 'atmosphere', and its importance in architecture.
D&A: What experiments and simulations did you do to assess how daylight is actually transmitted by glass and water?

DM: None, besides the final concept. I could, though, relate to some real life examples, for example of glass brick walls or ice structures and the brightness that they emit when they are penetrated by light. From the beginning I knew that rendering wasn't an option for this project. Therefore photography soon took over from the superficial attempt to represent light through the computer. It had to establish a connection between what had been real – the model – and what it could stand for in a snapshot. In this case, there was a great deal of mystery as to what the result would be. Although we sometimes tend to believe that we can control the result of a design process, it often leads to great disappointment, and in other situations to surprising satisfaction, exceeding our expectations.

D&A: What kinds of uses can you imagine for your concept, what kinds of spaces would you suggest to light up with it?

DM: The concept creates an ambience with a great deal of intensity, a well-known depth that architecture has in its purest state of matter and light. One has to explore the potential of a building for various types of uses by means of different lighting conditions. Otherwise architecture fails and becomes solely a matter of formality and function.
My project has to be perceived as a living sculpture that is guided by what the exterior provides. From my perspective, these types of spaces should be periodically used for different purposes. A concert hall, for example, would be a pleasant experience because the lighting situation would vary dramatically because of the sound vibration inside the tanks. This could even be experienced on the city square, through the different water movements during the performance. The underground space could also serve for artists to create a diverse number of installations, or it could be the ideal place for a city spa. Basically, any new use should be moulded on the character of the project, and use its potential to overwhelm the spectator.

MY PRIVATE SKY
DIDDEN VILLAGE IN ROTTERDAM

Most topping up on roofs is done for two reasons: a need for additional space and the desire to live or work high above the city rooftops, closer to heaven than to other people. Didden Village in Rotterdam, which incidentally was the first project carried out by the MVRDV architecture practice in its own city, was no exception to this.

Beatrijsstraat is a fairly quiet residential street not far from Rotterdam's central station. It is lined with early 20th century, two or three-storey residential houses with brick facades. The bombardment of May 1940, which destroyed large parts of Rotterdam's inner city, left this area more or less unscathed.

Didden Village is not far from the end of the street. From there, it can hardly be missed. The attic storey of the house below is extended by a sky-blue parapet. Behind it two gables of the same colour can be seen. The client is the theatrical wig maker Sjoerd Didden, who occupies the three-storey brick building with his family of four. The two lower storeys house the studio used by the owner and his colleagues. The family previously lived on the second floor in an open loft-type space. This gradually became too small. This led to Winy Maas of MVRDV, an acquaintance of the Diddens, fulfilling their long-held wish for a roof extension. Unlike many similar projects, the Didden Village does not simply offer its owners additional living and sleeping space. It actually functions like a real small village, with alleys and courtyards equipped with benches, tables and a pool. Shoulder-high parapets create the necessary air of privacy. The architects gave all surfaces except the windows and skylights a light blue polyurethane coating, which made the place show up from a distance. It is already seen in the town as a symbol of the Didden wig making business.

According to the architects, "the addition can be seen as a prototype for a further densification of the old and existing city. It adds a roof life to the city." The potential offered by existing flat roofs in Rotterdam has previously been pointed out by others – not least Korteknie Stuhlmacher Architekten with their Parasite Las Palmas on top of an old warehouse. For the time being, it is unclear how soon such intentionally provocative pilot projects will lead to a wider use of fallow "land resources with a view". In any case, this intervention has proved worthwhile for Sjoerd Didden and for Rotterdam: the wig maker did not have to pay for an additional piece of land, and the city was saved from having to build on more inner-city land.

PHOTOS (P. 74–77): ROB 'T HART FOTOGRAFIE

Page 75 **Benches and plant tubs supplement the sunny roof landscape which has privacy walls and presents itself completely in blue. The sons of the clients live in the three little houses.**

Below **Explosion axonometry. Two new cylindrical staircases connect the roof building with the living areas one floor below.**

Right **A greater colour contrast between the building on the roof and the surrounding brickwork architecture would have been absolutely inconceivable. Even the frames of the roof windows were painted sky-blue.**

Right page **Large windows let daylight into the apartment and the studio of wig maker Didden. Matching these, there are horizontal slots in the wall surrounding Didden Village which make the roof building look less massive and allow the occupants to look down onto the street.**

Facts

Type of building	Rooftop extension
Client	Didden family, Rotterdam, Holland
Architect	MVRDV, Rotterdam, Holland
Location	Beatrijsstraat 71, Rotterdam, Holland
Completion	2006

BOOKS

REVIEWS
For further reading:
recent books
presented by D&A.

ARCHITECTURE OF CHANGE

Editors: Kristin and Lukas Feireiss
Verlag Die Gestalten
ISBN 978-3-89955-211-9

In their book Architecture of Change, Kristin and Lukas Feireiss attempt to take stock of everything that can be called sustainable architecture today. This is interesting because sustainability is as multi-faceted as it is elastic as a concept. So the book contains a varied medley of about 40 projects and social initiatives that have already been realised or are at the planning stage. The selection ranges from new buildings by well-known architects in this field via the so-called 1 % Solution, where architects commit themselves to devote one per cent of their working time to public welfare purposes, or to infrastructural projects such as a cable railway intended for future access to the San Agustín Favela quarter in Caracas.

The book was triggered by last year's Zumtobel Group Award for Sustainability and Humanity in the Built Environment, a prize financed by the lighting manufacturer for which these same 40 projects were submitted. How jurors were able to compare projects as different as the above-mentioned 1 % Solution and Morphosis' San Francisco Federal Building (which finally won the prize) will probably ultimately remain their secret. The editors were not able to structure the contents really convincingly in the book either. "Star architecture" and eco-projects that were as well-known as they were well-meant alternate with visions of the future that have hardly been published hitherto, projects with a social and essentially ecological focus are all mixed up together. And yet the attentive reader will keep coming across details and ideas that have real potential for the future and explode inflexible intellectual schemes.

Unfortunately the same cannot be said of the textual contributions to the book. The editors have brought together texts by some of the most eminent guiding intellectual forces in the fields of economics and ecology: Klaus Töpfer, Saskia Sassen, William McDonough and Ken Yeang, to name only a few. But there is a lot of old and familiar material in their contributions: the future of sustainability lies in the cities, sustainability must move from being a niche-based to a mass phenomenon, ethics and aesthetics are converging increasingly. All this is as correct as it is lacking in concreteness. Ultimately Architecture of Change reflects one quality of architecture that is also a dilemma: architecture does not depend on measurable factors alone, but also on emotions, subjective perception and a large number of unwritten rules. And on top of all that, it is becoming increasingly complex. So who would be prepared to judge whether the projects presented here actually are as sustainable as their creators say they are? Is someone measuring the actual energy requirements or asking users about their experiences? You will look in vain for empirical insights of this kind in Architecture of Change, as you would in most similar publications. But anyone not expecting any such answers here will still find that this book provides a representative survey of all the fields in which architects are working on a better future.

BLÜHENDE LANDSCHAFTEN

Authors: Christian Wolter,
Ulrich Schneider
Kehrer Verlag
ISBN 978-3-939583-90-5

Christian Wolter, born in 1968 and the 2007 winner of the European Prize for Architectural Photography, presents an unusual photographic project in this book. The volume owes its title to a quotation that has become legendary (in Germany) from the former chancellor Helmut Kohl, who promised his fellow-countrymen on 1 July 1991 that he intended to transform East Germany into "blossoming landscapes". As is well known, mass unemployment followed, rather than a job miracle; the short-lived gold-digger mood soon gave way to an economic standstill.

But Christian Wolter was not interested in recording the decline of East Germany. The places he found could be in any other European country. His pictures, distanced and sometimes strangely uninvolved, tell stories of what happens when major projects literally run out of steam: spoil heaps tower up against a backdrop of untouched nature, tree stumps are a reminder of a regional airport that was never realised and the remains of pavilions quietly rusting away are left over from Expo 2000 in Hanover. Wolter photographed them head on, without people, usually in landscape format and often under grey skies – his pictures, even though they are photographed in colour, continue the Bernd and Hilla Becher tradition. The failures depicted here are not always total and final; often Wolter simply shows intermediate stages in a long process of change. Occasionally he also records the remarkable U-turns that development projects can make: a chip factory costing 275 million in Frankfurt an der Oder stood empty for years, until a solar cell manufacturer took it over instead. And it is well known that airships are not serviced in the largest column-free hall structure in the world, but day and weekend trippers enjoy the delights of a tropical water park.

And public projects do not get off lightly either: Wolter shows a future high-speed rail track that will probably not be finished until the second half of the century at the current rate of construction, and an abandoned open-cast lignite mine that was first planted with trees and then flooded. But despite its theme of failure, Wolter's Blossoming Landscapes does not only deal in sadness: in retrospect, the megalomania manifested in large numbers of projects seems almost amusing. Of course this only works for as long as the idea of their consequent economic and ecological costs is ignored.

Perhaps the most important insight from Wolter's book is that the projects could probably be photographed again in 50 years time – in other places, but with the same results. The fact is that ultimately Blossoming Landscapes are nothing more then the sometimes inevitable and sometimes wilfully induced frictional losses that all our striving for growth and progress brings with it.

ROOFTOP ARCHITECTURE

Authors: Ed Melet,
Eric Vreedenburgh
NAi Publishers
ISBN 90-5662-362-1

Man, especially European man, is an expansive creature. As this is the case, he has kept exploring new ways in recent decades of creating new space to live and work in: estates on the outskirts of town, satellite towns and new uses for industrial waste land. It is presumably no coincidence that two architects from Holland – Europe's most densely populated and indubitably most pragmatic territorial state in terms of architecture – have written a book about building on existing roofs. Ed Melet and Eric Vreedenburgh have not gone about it very systematically. They developed their book around a four-part essay, which they have garnished with pictures, often with no further comment, and short 'satellite texts' in the manner of encyclopaedia topics.

The introductory essay, however, is both structured and meaningful in content, as well as conveying a clear message: 'building on the roof' is seen as a great opportunity in this book. It is always evaluated with an eye on the aims the authors define as open to realization for the European city: a good social and functional mix, environment-friendly compactness and the possibility of 'spontaneous interaction' – whatever the reader might imagine this to be. So in places the text comes close to being dogmatic – for example when it suggests that mere topping up (topic: 'more of the same') is less worthwhile than genuine new rooftop construction. According to the authors, the latter could always add at least one new function or other to the existing city. But they scarcely ask whether it does so in reality.

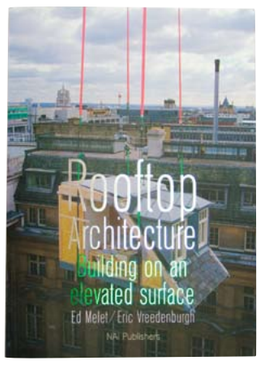
Even so, Rooftop Architecture is an attempt that deserves to be taken seriously to show the potential that the roofs of our cities offer for new construction. Admittedly the idea is not entirely new: in their research into ideas for 'city topping up' the authors come across El Lissitzky's Cloud Iron, the Hundertwasserhaus in Vienna (why actually?), penthouses in Manhattan and many other less familiar examples, some even as a result of anonymous owners' urge to make things. And the legal and constructional aspects of topping up and rooftop construction are not left out either. This still does not make the book a practical manual, but that is not what the authors were trying to write anyway. Their stated aim was to draw attention to a kind of architecture that is already practised intensively in some places – in Rotterdam and Vienna, for example – but is still a long way from making a real breakthrough. But one thing they have done successfully: Rooftop Architecture contains precisely the right mixture of pragmatic and utopian but always unique projects, and also subtle texts that are short enough to be easy to enjoy – and all this makes the reader want to keep picking the book up again.

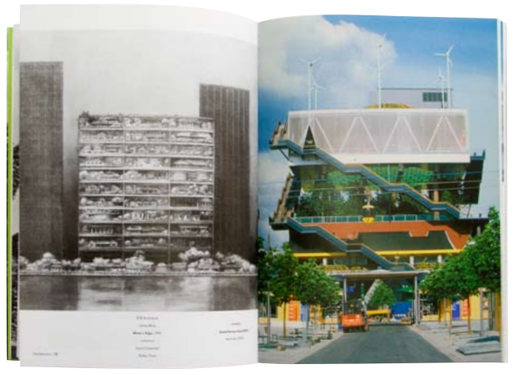
OLAF OTTO BECKER: BROKEN LINE

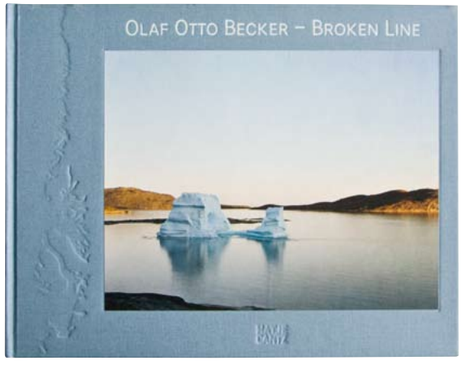
Hatje Cantz Verlag
ISBN 978-3-7757-1972-8

The German photographer Olaf Otto Becker spent three summers – in 2003, 2004 and 2005 – touring Greenland's west coast. He travelled 4000 kilometres in a rubber dinghy, usually at walking pace because, as we learn from his book, this was the only way to displace the drift ice safely. The book "Broken Line" shows the outcome of this photographic journey. The title refers to the Greenland coast, a section of which is printed on the book's ice-blue cloth cover. This coast is both the jagged edge where icebergs break off prior to their southward journey, and – due not least to the power of the ice – it is furrowed by countless valleys and fjords. Becker used his camera to record the breaks in this line: scree fields, rounded weatherworn skerries, granite-grey and rust-red cliffs with a thin growth of lichen and moss, and, above all, icebergs of up to 60 kilometres in length, many a gleaming light blue, others smudged with grey from contact with the rock below, or white and jagged. Becker uses a plate camera – a slow, almost meditative working method vastly different from today's quick digital snaps, but which produces impressively sharp images.

Becker's pictures appear timeless. In reality, of course, they are anything but. Greenland's icebound wilderness, as we are continually reminded by climate campaigners' alarming pictures, is one of the most rapidly changing landscapes on earth. And yet Becker wisely avoids clichés of the "nature on one side, evil humanity on the other" type. His pictures in this book reflect the statistical distribution of Greenland's landscape: large amounts of ice and rock and few traces of humanity. Here and there, weather-beaten wooden huts, and still more their occupants' possessions ranged around them, give an insight into the inhabitants' way of life. Here, someone has left a drum kit complete with amplifier and loudspeakers out on his rickety wooden terrace; there, a slaughtered sled dog hangs on a balcony waiting to be skinned. Snowmobiles, but also three-wheelers and mountain bikes suggest that Greenlanders are used to travelling long distances. In this book, Becker shows us a single interior of a Greenland house. In the midst of the ice desert, this house with its stereo and computer, but also all kinds of bric-a-brac, from a porcelain polar bear to a plastic bouquet of tropical flowers, appears remarkably bourgeois – and also shows how similar the insides of our homes are worldwide in comparison with natural habitats. Above the dresser hangs an almost garishly kitsch painting of a lake with pine trees and pointed mountains peaks. As Olaf Otto Becker discovered during his travels, it shows the Königssee in Upper Bavaria.







DAYLIGHT & ARCHITECTURE
MAGAZINE BY VELUX
WINTER 2008 ISSUE 10

Publisher
Michael K. Rasmussen

VELUX Editorial team
Per Arnold Andersen
Christine Bjørnager
Lone Feifer
Lotte Kragelund
Torben Thyregod

Gesellschaft für Knowhow-Transfer Editor
Jakob Schoof

Translation and re-write
Tony Wedgwood

Photo editors
Torben Eskerod
Adam Mørk

Art direction & design
Stockholm Design Lab ®
Per Carlsson
Nina Granath
Björn Kusoffsky
www.stockholmdesignlab.se

Cover and inside cover photography
Henrik Kam

Website
www.velux.com/da

E-mail
da@velux.com

Print run
65,000 copies

ISSN 1901-0982