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!
Since the beginning of modernism, people want two main things from the dwelling in which they live: more and more space and more and more daylight. How these wishes can be fulfilled by conversions, extension buildings and the addition of new floors and what the unusual challenges are that they present to architects is examined by Huber-tus Adam in his article.

According to nearly all the criteria of sustainability, the modernisation of old buildings is preferable to the erection of new ones: it requires less material, less energy and, often, less space as well. It is therefore all the more important to gain political acceptance of programs for the modification of old buildings to make them energy efficient and to make such modification economically interesting. Thomas Lemken explains what the corresponding incentive systems and information campaigns could look like.

These three cities all had a great past. Do they also have a future? Daylight & Architecture took a look round in Liverpool, Rotterdam and New York and tried to find out when a process of urban renewal was underway—and what role the renovation of old buildings was playing in such renewal.

Three conversions bring new light into old walls: Pfeifer Kuhn Architekten have given St. Augustine church in Heilbronn a new interior polycarbonate shell, Stürm Wolf Architekten have raised the roof of the armory of Rapperswil-Jona to create a ‘whale’s belly’ and, thanks to the conversion plans of Steven Holl, the philosophical faculty of New York University has been given a new ‘backbone of light’.

At the beginning of November in Venice, the winners of the International VELUX Award 2008 were announced. Daylight & Architecture talked to them and learned a lot about the innumerable facets of daylight with which young architects are concernning themselves today.

Critics have already described the new roof extension by MVRDV in the centre of Rotterdam as a ‘visual irritant’. The sky-blue ‘village on the roof’ is attached to the house of the wigmaker Sjoerd Didden and provides his two sons with new living space. Buildings, terrace, parapets and furnishings are covered with a uniform blue polyurethane coating.

Around 75% of the existing buildings that will be needed in 2020 already exist today. Nevertheless, legislators are focusing their attention on prestigious new building under the slogan CO2 neutrality. Comprehensive modification of old buildings to make them more energy efficient, however, is to be welcomed, explains David Strong in his article.
The things that make architecture tick: events, competitions and selected new developments from the world of daylighting.

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.

Photo by Ruedi Walti
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 suitable for an industrial building or a tent. The conversion of St. Augustine’s church 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 Herkomer as a saddle 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 walkable; 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 “glistening 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.

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 facades of the two-story building are interrupted by partly cross-barred windows surrounded by broad white trim. 14 large doors in the entrance facade open on to the front yard, slowing the building’s prominent use for decades it served as a store for military equipment, then as a workshop for local craftsmen. 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 same purpose and effect on the interior of this intervention are shown most clearly on the armoury’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 building, engaging in a dialogue with it. The other context 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, so that gently curved lines are created on vertical and horizontal surfaces. A continuous, 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 skylight 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.

Philosopher’s Light

Ludwig Wittgenstein’s ‘Bemerkungen über die Farben’ (Remarks on Colour), one of the famous philosophers’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-story 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 it was precisely what Stephen Holl assigned to redesign it, dit: 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 barriers 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.
MANKIND AND ARCHITECTURE
Mankind as the focal point of architecture: interior views of a corresponding relationship.

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-build homes in the UK have to be ‘zero-carbon’, with their CO₂ 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 2009.

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 2006. 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 UK 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 2070 % of the UK’s 2050 building stock has already been built. The vast majority of the buildings we will still be using in 2070 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 CO₂ 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.
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 Buildings 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 CRM 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 improve-ment 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 EPCs 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.
Fort Dunlop, Birmingham, Great Britain

Architects: shedkm architects, Liverpool
Location: Fort Parkway, Birmingham
Useful area: 32,000 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.

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.
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 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 local/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 maximise. While bolting 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 generating 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 wall 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 predictions 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.
DAYLIGHTING
The natural gift of daylight put to practice in architecture

RE-USE OR NEW BEGINNING
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 heterogeneous 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 reconstructed as a quite different city, based on Renaissance and Early Baroque principles of bold hierarchisation, grand axes and perfectionism to rebuild their homes on their own, 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 called for a ‘new beginning’ that would do away with the traditional city of streets and squares. The heavy demolition 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 symbols and signifiers that the option of tearing them down was made impossible to replace them with new structures. In the 1930s, Le Corbusier had also called for wide-open spaces so that the plan was rejected by all, not to be considered by some, and given the ultimate and essential expression of the modernist image, and the European cities as expressing a culture that now late began.

If we agreed that globalisation and the transition from the industrial society to the information society require great adaptability and mobility, it is interesting to note how this was forward di did appreciate his ideas - they just did not have a venue.

Le Corbusier versus traditionism

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-Denis, he realized that the plan was rejected by all, not to be considered by some, and given the ultimate and essential expression of the modernist image, and the European cities as expressing a culture that now late began.

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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 1960s and powerful societal dynamics creating powerful social changes, Archigram's question was the city that would then have to be movable in order to adapt to these changes.

But for Archigram this is a constant body that relocates. A somewhat unanswerable question of this, and one that would not have been approved by 1960s, would be to say that here we have a vision of a soci-
LIVERPOOL: THE NEW RISE OF A FALLEN GIANT

When Britain was an industrial superpower, Liverpool was its international superport. Situated at the mouth of the River Mersey in northwest England, it was the gateway through which raw materials flowed into the country’s factories and textile mills. From 1241 on down, docks, manufactories, and warehouses were exported all over the world. Prosperity achieved a peak around 1910, 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 catastrophe in the twentieth. The collapse of British manufacturing, the loss of Empire and the rise of European competitors, and an equally unprecedented decline in the 20th. in its name and serves as a focus for the city’s universities. Its hand some terraced houses were saved from decline in the 1980s through a conservation programme operated by English Heritage and the City Council. In the last fifteen years have also seen a massive commercial gentrification.

The main regeneration project of the 1990s was the restoration of the dockside Albert Dock, the city’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 commercial and cultural life. The early eighteenth Century Bluecoat Chambers – home

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provision. Further massive injec tions of public money followed, including the latest – and largest – project in the city. Liverpool One shopping area, has been funded by private investor Grosvenor.

An oversupply of building stock? Adaptable reuse of older buildings has played a key part in this transformation. There is strong enthusiasm for Liverpool’s historic architecture, but long years of economic decline have taken their toll on the city’s fabric. Thin, and the sheer number of listed (desatably protected buildings), – of which Liverpool is said to have more than any other proven example in the UK. – has caused conse -vation and refurbishment a severe challenge. A number of exceptional projects have been carried out in recent years, including the Neoclassical Williamsons 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 1990s was the restoration of the dockside Albert Dock, the city’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 commercial and cultural life. The early eighteenth Century Bluecoat Chambers – home

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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 home¬less persons sheltered. But in ridding itself of its old social problems the metropolis has created new ones: it is merely society’s vulnerable people but also people from the lower middle-class who have difficulty in finding affordable housing.

Chelsea: the revitalisation of the ‘High Line’

The revitalisation of the more western neighbourhood of Chelsea has taken a particularly ambitious course: only within a few years the multi-purposing district in south Chelsea, once the Leica headquarters of former ‘trendy’ address for new fashion and above 20th 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 preserve it and founded the association ‘Friends of the High Line’. The idea of transforming the High Line into a public park soon prompted impressive supporters such as pop star David Bowie and fashion designer Diana von Furstenberg. They were able to win over the new city government under Mayor Michael Bloomberg. Redeveloping the area 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 was the German firm of landscape architects ‘Wetland kompetenz’ which was contracted to design the surrounding area that an mishap would include residential and office buildings and be finished up by the year 2013. A design for the High Line commissioned by the city – a collaboration between landscape architects Field Operations and the architects Diller Scofidio & Renfro – envisages 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 designations has opened up a number of ambitious projects, some with well-known architects such as Jean Nouvel and Frank O. Gehry but also buildings by newcomers such as Snøhetta and Lindy Roy. As a few industrial buildings have remained along the High Line, almost all projects are new buildings intended as luxurious condominiums. The 26-storey Chelsea Arts Tower, completed one year ago, and the office building by Frank Gehry for the Arc/One Corporation, which has been completed, are few of the exceptions. GC 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 literally standing on the High Line itself. The Whitney Museum of American Art in its new building, a project of Renzo Piano to serve as an anchor for the park project. Immediately next to the Whitney Museum, what is to become the tallest building in Chelsea, a 58 floor tower of the luxury hotel ‘W’. The hotel is mainly known for its luxurious interiors; in New York it is neither merely society’s vulnerable people but also persons sheltered. But in ridding itself of its old social problems the metropolis has created new ones: it is merely society’s vulnerable people but also people from the lower middle-class who have difficulty in finding affordable housing.

The High Line Building is a luxury hotel, designed for promoting Dumbo.

The revitalisation of the area was not on good terms with Walen¬sis 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 per¬mitted the conversion of buildings to housing. So in 1998 and later even allowed a few new buildings to be put up.

Today Dumbo is an elegant neigh¬bourhood with fashionable restaurants and boutiques selling designer furni¬ture. And Walensis is now far from being only the developer in the neigh¬bourhood. But she can still claim that he was more or less personally re¬sponsible for promoting Dumbo.

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A city centre renaissance?

As the ideal 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. In the city centre, the fires that raged during the nights of bombing are still clearly visible.

A city centre renaissance?

Since the ideal 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-identification 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 lackiness 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 the small church, the oldest buildings in the inner city originate from the post-modernist 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 Beursplein has been extended by the addition of two residential towers and the base building restored by Van Tilburg, Beding, Van Boeij Architects. In contrast, the planned housing complex Bjorkamra, designed by Wael Arnts, 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. Three 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 Bakkers. Last year, at the owner’s request, the local authority commissioned the architects 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 pipelines.

Apartments to give away: the Walliblok 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 building projects. 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 demimonde town of Hoogeveld, where 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 already setting a precedent. Spangen is a district in the west of 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 night life 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. At 75 apartments in a block, the so-called Walliblok, 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. They threatened to evict those who came from creative professions – at most, 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 area in the centre of the block. The owners invested between €70,000 and €200,000 in their new homes.

With the success of Walliblok, similar projects in the Charlois and Feijenoord districts, far away from Kop van Zuid, are now also being planned. “Création d’espaces” 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, safer and meet the needs of the Rotterdam housing market better than some large-scale new building projects. To be precise, 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.”
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.
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 icebergs 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
REFLECTIONS

Different points of view: ideas beyond those of everyday architecture.

NEW GLORY FOR OLD SITES

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

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 indispensible 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 20054). Approximately 75% of the buildings needed in the year 2020 have already been built.2 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 years5. 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.7 Some communities can expect shrinkages, others can expect influxes.

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 repairs21. 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 value12). Existing non-residential buildings and infrastructures are also very important for resource productivity.
The priority accorded to building renovation varies across Europe. During the last years of the 20th century, the old 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 renovation in European states. However, a Europe-wide increase in contracts for renovation of existing buildings and in demand for the corresponding (construction) professions is on the horizon.

Untapped potential

In its sustainability scenario, the study “Nachhaltiges Bauen und Wohnen in Deutschland” 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. This would create a possible annual raw material savings of approx. 8.9 million tonnes, primarily in the area of residential buildings. This does not include potential savings in infrastructure facilities. A study by Arrut D. Little GmbH/ Wuppertal Institut/Fraunhofer Institut für System- und Innovationsforschung produced similar results. This study estimated the financial savings achieved by saving on materials at approx. €1.2 m per year (based on a total material value of €1.2 m). This would lead to an increase in efficiency of structural engineering and interior construction sectors combined. The study assumes that approximately 70% of this theoretical potential saving can be realised within the next ten years (this would be equal to €1.2 m).

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 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 m² 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 (retraction) 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 mix-use, using new forms of compact construction for residential and commercial use
- extra taxation on use of new sites

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 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, “Gebäudereinigung” (gathering data on buildings) into the Honorarordnung für Architekten und Ingenieure (HöA), 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 support offers (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 retrofitting).

Thomas Lemmens is a scientific coordinator and project director at the Wuppertal Institut für Klima, Umwelt, Energie GmbH. The main focus of this 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.”
Notes

1. This article is based on the leading dialogue process “Verbraucheransprache Rohstoffaufklinker und Ressourcen- kommen”, initiated by the Wuppertal Institute and commissioned by the Umweltbundesamt. More information can be found at ressourcen-produktivitaet.de.


5. www.spa-ed.org


9. loc. cit.

10. 18.50
11. 15–20

12. 20   30  50
13. 10–15

14. 35–40  15–25

15. 45–50
16. 10  25  65


18. ibid.

19. mipshAUS-Institut. See www.mipshaus.de


Per capita access to global material flows, a bias for material prosperity, is not present equally distributed between “south and north”. If the population of the developing countries doubles and consumption is equalized, then based on the present material-intensity of Western economies, some 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 demonstrating Western economies by an approximate factor of 1/3.

Notes to Figs. 1, 2, and 3

Fig. 1: Access to global material flows

Fig. 2: European building stock divided into building periods

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

Extensive modernising Partial renovation and improvement of built infrastructure Selective renovation

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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 architectures, even in apparently inhospitable locations as here in Tallinn, can make an important contribution to this.
Taking a closer look: how daylighting is brought into buildings

More Light, More Space,

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

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 Bauern 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 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 than 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 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...
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 Architekten 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 plenty of potential to increase the density, to add additional storeys or extensions. The roof extension in the Falkestrasse (1983–88) in Vienna by Coop Himmelblau, 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 left sawn into the three metre thick roof of the bunker, visitors finds themselves in a light-filled 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.

In 2003, Delugan Meissl from Vienna placed their residential building “Ray II” 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.
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”.

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

Stacking, layering and compacting are recurring strategies for the Dutch avant-gardists mvdv. 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 atriunm 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.
VELUX Insight

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LIGHT FOR CHIMNEYS

Chimney Pot Place in Salford
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.

The last twenty years have been a period of massive change across the swathe of north-ern 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 thou-sands of hectares of industrial buildings falling empty and the beginning of a downward spiral of gradual disrepair and decay. Throughout the 1980s, 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 partner-ships aimed at renewing the building fab-ric 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 high-est profile developers in Britain, specialising in revitalising older industrial buildings across the run-down urban fabric of Brit-ain’s cities. It is a palpable over-exaggera-tion 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-hand-edly 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 fab-ric. Where other developers only saw unas-sailable 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 profes-sionals 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 indus-trics lived, and despite the coming and going of sixties brutalist high-rise, the prolifera-tion of estates and suburbs spilling over the edges of many towns, the nineteenth cen- tury brick terrace remains a mainstay of the North’s urban fabric. Again, with these ter-raced buildings often at the limits of their normal lifetimes, the question of what to do with such building stock has been repetitively 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 regen-eration map. With high unemployment and some of the poorest city districts in the coun-try, the 37 sq mile authority has been the recipient of ongoing regeneration for sev-eral decades. This has resulted in some land-marks, including Salford’s Manchester Docks boasting Liebeskind’s Imperial War Museum, the Lowry’s Arts Centre and various other high profile attractions. A short journey on Manchester’s tramway – another regenera-tion 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 experi-ment 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 pro-vides a thought-provoking and alternative exemplar of compact, high-density city liv-ing 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 imagin-ing the possibilities of a terraced build for the twenty first century. The architectural chal-lenge appealed to him and Weston began talking with Urban Splash and persuaded them that a contemporary terrace make-over 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 archi-tect 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 bi-fold doors 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 façade’s red
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 centimetre 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 hanging 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 lightwells 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 Victorian

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.
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.

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 Eco-homes 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 FourthDoor Review, www.fourthdoor.co.uk

Facts

<table>
<thead>
<tr>
<th>Type of Buildings</th>
<th>349 terraced houses</th>
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<tbody>
<tr>
<td>Client</td>
<td>Urban Splash, Manchester, UK</td>
</tr>
<tr>
<td>Architects</td>
<td>shedkm Architects, Liverpool, UK</td>
</tr>
<tr>
<td>Location</td>
<td>Chimney Pot Park, Langworthy, Salford, UK</td>
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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 VELOX 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 VELOX Award for Students of Architecture

**Theme** Lights of Tomorrow

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

**Number of submitted projects:**
- 686 – all projects are available at www.velux.com/iva
- 7 November 2008 in Turin
- Jury session: 25–26 June 2008 in Turin
- Award ceremony: 7 November 2008 in Venice
- Total prize sum: €30,000

**1st Prize**
- Rolly O’Neil Hogan
- Cornell University (USA): “Embodied Ephemerality: Light-Form Architecture”

In his project, Rolly O’Neil Hogan explores how to bring daylight and sunlight into people’s daily 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 spaces of daily passage that unexpectedly transform 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 articulate 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 increase 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 metropolises—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 this project, Dean and 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 a large mass of water in transparent glass tanks that capture daylight from above and emit it to the interior.

Dean MacGregor says of this 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 the 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 reflects it to the interior of the space—the body of light.”

The jury was intrigued “by the fragility, 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 subtle poetry by marking light phenomena and mystery.”
Shadows Analysis of Commute Times

08:30 AM -- 5:30 PM - 09-21 & 06-21

The commuter who lives or works in this specific place and what is the situation there at the moment?

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 Turrell, 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, where it is projected onto a translucent surface, wrapping the interior. This was documented through video or photography.

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 future 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. Where was the memorial in 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 for junkspace, as Rem Koolhaas would have called it, a “sense of place”. What were the principal architectural means of this transformation?

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.

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

ROH: Using 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...
Below: New York in an unusual light. In their design, Ruan Hao and Xiong Xing propose a daylight festival for the metropolis on the Hudson river. Large reflectors mounted on huge 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 for urban infrastructure designed by Dean MacGregor in his submission to the competition. The tanks stand in an open park, embedded in a large semicircular concrete structure. As daylight infiltrates the aqueuct for a city, the area is illuminated by the water within the glass tanks. The installation will light 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 studios as a Teaching Associate, I have often raised light as a central design consideration. By emphasizing 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 or large open spaces on building facades. Was this idea based on your personal experience with hyper-density metropolises?

RH/XX: From our living experiences in several metropolitan worldwide, we noticed the impact sunlight has on the urban forms. 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 lighten 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 calculated potential solar radiation hours in each academic and professional project. The temporary installation which we have considered has not been 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 identity.

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

RH/XX: When considering how to maximize the value of the 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 seems important initially to make a first attempt to raise the awareness of sunlight as the indispensable life resource. The temporary installation, which we have considered, will transform 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 sunny days, that make designing a permanent installation more complex. None the less we would like to consider the opportunity of researching such a permanent installation – if we are financially permitted – with a large 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 utilize 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 architects in China design for urbanization. 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 citie can be designed in order to allow more light into the streets? If so, what?

RH/XX: The complex and intrinsic 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 it is 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. Architectures 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: While looking back at how we were taught to understand and utilize the potential of a building, 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?

DM: The concept creates an ambiance with a great deal of intimacy, a well-known depth that architecture has inherited from 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: (i) to create a diverse number of installations, or it could be the ideal place for a city spa. Basically, any new use should be modeled on the character of the project, and utilize its potential to overwhelm the spectator.
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. This client is the theatrical wig maker Sjoerd Didden, who occupies the three-storey brick building with his family of four. The lower two 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 stick out 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 fellow “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.
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 slits 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

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Rooftop extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client</td>
<td>Didden family, Rotterdam, Holland</td>
</tr>
<tr>
<td>Architect</td>
<td>MVRDV, Rotterdam, Holland</td>
</tr>
<tr>
<td>Location</td>
<td>Beatrijsstraat 71, Rotterdam, Holland</td>
</tr>
<tr>
<td>Completion</td>
<td>2006</td>
</tr>
</tbody>
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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.
ARCHITECTURE OF CHANGE

Editors: Kristin and Lukas Feireiss
Verlag Die Gestalt
ISBN 978-3-99555-211-9

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 elusive. 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 to the so-called "6% Solution", where architects commit themselves to devote one per cent of their working time to public welfare purposes, or are at the planning stage. The section on new buildings by well-known architects in this field is particularly sharp and often with no further comment, which they have garnished with pictures, often with no further comment, which they have garnished with pictures.

The book was triggered by last year’s Zolitzjak Award for Sustainability and Humanity in the Built Environment, a prize financed by the lighting manufacturer for those that it offers public welfare projects. So far, few projects were able to compare projects as different as the above-mentioned 1% Solution and Morphosis’ San Francisco Federal Building (which finally won the competition) will probably ultimately redefine their scope. The editors were not able to structure the contents really convincingly in the book, which lies in the cities, sustainability must be called sustainable architecture.

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