Beyond Eco-towns Applying the Lessons from Europe Report and Conclusions

PRP, URBED and Design for Homes







The Guinness

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Beyond Eco-towns Applying the Lessons from Europe Report and Conclusions

Written and researched by PRP Architects Ltd, URBED and Design for Homes

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Report and Conclusions

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Hammarby Sjöstad - even at higher densities the treatment of open space and urban landscape can provide a good quality of life for families

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1.0 Summary

The UK Government's concept of Eco-towns has aroused great interest, but has also generated considerable scepticism and opposition to particular proposals. Eco-towns should be exemplary places that help drive standards up. Hence it is essential that we do not repeat the mistakes of the past as happened with system built tower blocks, for example. Instead, we should be able to learn from places that have been building better and larger homes, at a much faster rate than the UK has yet achieved. PRP, URBED and Design for Homes have therefore joined forces to share our considerable experience of European developments and to look more closely at the process that lay behind them.

This report summarises the aims of the Eco-Towns initiative, sets out the conclusions we have drawn from similar developments in Europe which address the concerns about deliverability, economic viability, building new communities and creating a sense of place. From this we have been able to draw conclusions for the way ahead. The report builds upon our interim report produced in July 2008 which was presented at an event in Stockholm in mid July with a view to drawing out recommendations for applying the Eco-town principles successfully in the British context.

Since July we have undertaken a study tour to Amersfoort in The Netherlands. This has provided further information and provoked more detailed consideration of how the economics of development and infrastructure, as well as the management of the development process, needs to be reviewed and changed within the UK if we are to improve our performance to European levels.

We have subtly altered the title of our report to 'Beyond Eco-towns' because we feel that the implications of our findings need to be applied more widely and engrained in a wholly new approach to large scale sustainable development, much of which will inevitably take the form of regeneration or urban extensions rather than in stand-alone new communities. This is not to discount the valuable lessons that will come out of the ongoing Eco-town initiative.

The structure of this report follows that of the interim report but provides additional illustrations and material plus an updated conclusions section. However, it is inevitably still a short summary of our work. Further and more detailed information is available through contacting the lead persons in each of the three organisations. In particular, we have produced the following documents which are available from the PRP website - www.prparchitects.co.uk:

- Case studies of each of the six exemplars
- A more detailed case study of Amersfoort based on the August 2008 study visit
- A matrix of comparative key information for each of the six places
- A working paper entitled 'Beyond Eco-towns: The economic issues' by Dr Nicholas Falk (URBED).

Kronsberg was built as a demonstration project for EXPO 2000. It pioneered enhanced environmental performance, a balanced community and an exemplary landscape strategy



Key Lessons

Our visits have convinced us that there are some common approaches between all the schemes which lead to better results. If we are to apply the lessons from European experience to the British situation, we need a financial or business model that can support the extra costs of higher standards from the expected benefits or values achieved, and control or minimise risk over time. The Callcutt Review¹ called for an 'investor model' where returns are sought over a longer term than housebuilders tend to expect; and what we have seen in places like Vathorst in Amersfoort or Kronsberg in Hanover, is that model applied on a major scale. Such an approach is needed in the UK because even where public funds are being committed on a major scale, as in the Growth Areas of Milton Keynes for example, the funds provided by government are still only a small part of the total investment. The bulk has to come in one form or another from private investors in the short-term and from house buyers or social housing providers and their tenants over the longer-term. Consequently different approaches are required at three levels which presently are hurdles or stumbling blocks:

Sustained local leadership

The process of building a new community is inherently complex and long-term. The process therefore has to be led by influential local politicians and chief officers (supported by development agencies in some cases), with government encouragement and with active community engagement only once the basic parameters have been set. Our case studies demonstrate the importance of sustained and visionary local leadership:

- European local authorities have acquired the necessary technical and financial capacity (through multi-disciplinary teams, local development agencies, and in some cases public private partnerships with private developers). They are less dependent on housebuilders who want to dispose of houses quickly, and control the rate at which their land bank is developed.
- Local authorities provide the required balance between meeting social objectives and maximising returns for developer and landowner. By not ceding responsibility, but being flexible about phasing, the public sector ensures that developments are built to the standards originally envisaged, making trade-offs where necessary.
- The public sector negotiates with utilities, transport providers and other community facilities to ensure that a higher quality of infrastructure is provided early on before the bulk of residents have moved in.

Spatial planning

The UK is moving towards the Continental model of devolution to regional and sub-regional public agencies, and the idea of Multi-Area Agreements and of integrating economic and physical strategies



offers great promise. However, all the success stories demonstrate that new settlements have to be located close to growing urban conurbations so that they can share infrastructure and access to jobs and services in the early stages. They should also be places or neighbourhoods, with their own names, distinctive identities and community facilities.

- They are located where there is not only housing need (and hence the requirement to provide affordable homes), but also an expanding population either because it is an attractive place to live or due to its proximity to new work opportunities. This helps to achieve much faster build rates than in the UK, and associated economies by spreading the overheads.
- The settlements are also relatively compact, with densities that support good quality infrastructure and hence offer a better quality of life than existing suburbs. Saving energy has long been a priority for countries with colder winters and lacking the UK's coal and oil resources. Hence homes are generally better insulated, and triple glazing is common with greater use made of ambient solar and wind energy, and ground source heat pumps. Electricity can be used for space heating supplemented by local energy generation in the form of Combined Heat and Power (CHP), through district heating schemes, plus the use of renewables so that the scheme as a whole has the potential to be zero-carbon.
- They make good use of water to create places where people can live close to nature, and without risks of flooding (which in the Netherlands in particular has long been a priority and in Germany has become an increasing concern).

Creative development finance

The hardest task of all is ensuring that there is sufficient funding to join up the physical and social infrastructure, and ensure that it leads rather than follows housing growth. European municipalities play a leading part in commissioning the masterplan so that they achieve consensus, avoid duplication, and reduce the risk to private sector participants. Public financial institutions then supply long-term debt finance at low rates of interest for installing infrastructure, to be repaid from land sales, rather than relying on a 'lottery' of grants or government patronage. Greater planning certainty reduces development risk. As a consequence private investors and housebuilders have a lower cost base, and with less risk capital committed require lower levels of return.

• There is major investment up front in high quality public transport in the new communities, such as light rail and cycle ways. This means that targets for reducing energy or car use are stretching but realistic. The targets are related to what is already being achieved locally, against national targets.



- In Amersfoort the Local Authority were attracted by the masterplanner's deeper, more cultural approach to the plans for Kattenbroek, communicated here through artistic expression
- 2 Vauban sufficient priority for the spaces between buildings where good use of landscape creates places where people can live closer to nature
- 3 Adamstown Railway Station creative investment enabled the provision of major infrastructure to be delivered with the first phases of development
- Large sites are broken into smaller parcels (typically around a hectare) and serviced plots are then sold to a wide range of private developers, housing associations and cooperatives at a price that reflects the value of what is built. This enables the initial investment in land assembly, planning and basic infrastructure to be recovered from private investors.
- The proportion of social housing is between a third and a fifth, and designed so that it does not become 'residualised', for example by providing ongoing community development and neighbourhood management. In addition, there is a provision for a broader range of subsidised housing through cooperatives and housing associations so that most residents are likely to be in work, and able to pay their way. A much larger private rented market enables communities to grow much more rapidly so that development is not dependent on having to sell another house or secure a mortgage for the first time.
- Infrastructure is not funded by housebuilders. Access is funded through long-term finance (available at lower rates through publicly owned financial institutions), which makes the whole delivery process much simpler and less risky. Other elements of the infrastructure, such as energy supply and water are provided by private companies who bid for the contract and then take their profit through long term contracts.
- Experience has been built up (and shared) in designing and building more sustainably through a host of local component providers, and through factory-built sub-assemblies (not hand-made on site).



Source: Ontwikkelingsbedrijf Vathorst Beheer bv, Amersfoort



2.0 Introduction

The starting point for this study was the UK Government's proposal to promote up to ten Eco-towns across England. These exemplar small new towns of 5,000 to 20,000 new homes are expected to deliver on a number of objectives which at first sight appear extremely challenging. They must achieve an absolute increase in housing numbers, create more affordable homes, achieve superb standards of design and sustainability and above all, not add significantly to public expenditure. This initiative also comes at a time when there is a sharp downturn in the private housing market in the UK.

At the time of writing the final selection of the locations for these Eco-towns is yet to be made and the precise criteria are still being drawn up. However, in other parts of Europe, such projects do already exist and are delivering sustainable homes and communities, in places which are delightful to live in and to visit. Moreover, they are being built and occupied at a speed which is unheard of in the UK. How has this been achieved when we seem to find it so difficult? We regard the current slow-down in housing as an opportunity to stand back and look at not only the results but the processes behind the European models. We also want to look beyond the immediate initiative and explore how such models might become mainstream, and not just unique beacons of excellence when the inevitable recovery happens.

The authors have developed extensive knowledge and experience of successful, large scale European housing developments through travelling to them (in some cases, many times) and meeting the people who have made them happen. We have also used the development of this report as an opportunity for 'action learning' with our sponsors and other key industry figures who have accompanied us on visits to Germany, Sweden and The Netherlands and have contributed their thoughts and reactions to this report. Although not generally labelled as Eco-towns, the places each exhibit many, if not all, of the characteristics suggested by the Department of Communities and Local Government (CLG) in its prospectusⁱⁱ for new Eco-towns, including:

- High environmental standards
- Sustainable transport
- Design quality
- Community involvement

- Employment opportunities
- Healthy living
- Efficient land use

We have pooled our knowledge and have attempted to extract some key lessons which could inform the development of the new Eco-towns (as well as other schemes that aim to achieve higher standards). We have been as interested in the ways in which the projects have been conceived, executed and financed, as in their physical form. We believe that some of the biggest differences and reasons for success lay in those areas which transcend urban design and planning, and stray into local political structures and methods of finance, procurement and management.



We selected six places for our study that are widely considered as exemplary:

Adamstown (1) near Dublin, Ireland, a private initiative in a rural area (and therefore the most similar to many of the proposed Eco-towns);

Amersfoort (2) a small historic city in The Netherlands, with its three new suburbs: Kattenbroek, Nieuwland and Vathorst;

Freiburg (3) Germany, with its two new urban extensions: Vauban and Rieselfeld;

HafenCity (4) in Hamburg, Germany, the redevelopment of a port area close to the city centre;

Kronsberg (5) in Hanover, Germany, designed as part of the EXPO 2000 international exhibition;

Hammarby Sjöstad (6) an urban extension of Stockholm, Sweden, and once promoted as the site for an Olympics bid.

Each of these is large in scale, some city centre and more urban, others peripheral and suburban, and innovative in environmental terms. Each has reached a sufficient stage of completion to be able to assess success in terms of being substantial new places, which are popular with their residents, and where infrastructure is keeping pace with development. They are not unique, and we could have included several other examples which members of our team have visited, such as Bo1 in the former shipyards of Malmö in Sweden and Kirchsteigfeld, an extension of Potsdam, Germany.

Name	Location	Planned no. of homes	Construction Status (2008)
Adamstown	Dublin, Ireland	10,000	10% complete
Vathorst, Nieuwland, and Kattenbroek	Amersfoort, NL	11,000	25% complete
Rieselfeld & Vauban	Freiburg, S Germany	5,000	75% complete
HafenCity	Hamburg, Germany	5,500 plus commercial	25% complete
Kronsberg	Hanover, Germany	6,000	50% complete
Hammarby Sjöstad	Stockholm, Sweden	11,000	75% complete

Case studies











- 1 Adamstown
- 2 Amersfoort 3 Freiburg 4 HafenCity

- 5 Kronsberg 6 Hammarby Sjöstad

4.0 Why Europe?

We are aware of the argument that good precedents can be found in the UK without the need to travel to mainland Europe. Some go further and suggest that European models rely on different political and cultural factors which are not replicable in this country. To some extent, we agree. The UK has, at various times in its history, led the world in the design of sustainable residential communities, for example:

- 19th Century philanthropic settlements such as Bournville or Port Sunlight;
- Early 20th Century garden cities such as Letchworth and Hampstead Garden Suburb;
- Post war new towns such Milton Keynes;
- Ingress Park near Dartford.

These examples all relied on a number of coinciding factors for their success, such as low cost land, visionary leadership, exemplary masterplans, homes close to jobs, and an ongoing neighbourhood management programme. Indeed, they could all be the product of very special circumstances that are hard to replicate on any scale. For example, Milton Keynes not only benefited from public investment of over £700 million, which has left a legacy of grid roads and public parks, but also was helped by the many people who escaped slum conditions in London to get jobs and homes together.

In recent years, similarly successful large scale examples have been hard to find in the UK and in particular, completed schemes with contented communities. The reasons for this are complex but at root we believe there has been a disconnection between the planning process and the means of delivery. We have an abundance of guidance and exhortation at central government level,ⁱⁱⁱ which is directed towards a mainly sceptical house building industry. At a local level, we have a planning system which is largely to do with development control, and little to do with the vision and aspirations of the local community. In places where people are trying to bring the two together, such as in Ashford Kent, they find themselves under-resourced and consequently slow moving. We believe that our European examples have managed to achieve more collaborative ways of working, which are more efficient and have yielded better results, more quickly.

The main reason for looking to Europe for inspiration is that in recent decades, countries like Germany, The Netherlands and Sweden have far outstripped the UK in the number, size and quality of the housing they have built every year. In The Netherlands, for example, the ten year VINEX programme increased the stock of houses by 7.5%. European countries have also had to deal with the decline of manufacturing industry, often in situations that are comparable with those found in the UK, certainly in the southern half of the country. Many of the cities are dealing with issues of integrating people from different backgrounds. Distinctive neighbourhoods in Vathorst, Amersfoort where we found the closest parallels with the UK market and some key innovations in the delivery process for us to learn from



New settlements, in places like Kronsberg, have attracted residents from many countries. There is also research evidence from MORI and others^{iv} to suggest that, in general, people are happier in Continental Europe, and the children markedly so.

Major New Settlements in The Netherlands

In The Netherlands under the VINEX Programme 455,000 new homes were built over the period 1996 – 2005 in 90 new settlements, of which 285,000 were on greenfield sites or urban extensions of major towns and cities.



Source: Han Lörzeing (Netherlands Institute for Spatial Research)

5.0 Our Methodology

Each of our examples has been visited by one or more of our team over the past year. In some cases, we have organised study tours involving a wide cross section of the UK housing industry and our sponsors. There is also a lot of available published material on most of the schemes. Amersfoort, Freiburg and Hammarby Sjöstad formed case studies in research undertaken by ERBEDU and URBED for the Academy for Sustainable Communities.^v We have collated this material and have produced a comparative study of each under six broad themes, which we have collected together under the six Cs^{vi}:

Connectivity

How was the scheme related to the wider area? How were linkages with the wider area achieved? How was it laid out and how were the internal connections established? How was the car accommodated?

Community

What was the social context of the development? Were there clear objectives and a target market? What was the mix of housing? What other facilities were provided? How was the community engaged with the process and the project?

Climate Proofing

What standards were set for reducing the consumption of energy, water, waste and quality land? What methods were used to achieve the targets? What types of construction methods were used? How was information and support provided to the community?

Character

What was the physical context, urban extension or stand alone? What form did the masterplan take? Were there design codes and if so what did they control? What were the landscape features? What impression did the scheme make in terms of 'look and feel'?

Collaboration

Where did the leadership and vision come from? Were special structures or legislative arrangements used? How was the planning process organised? How was the project procured and delivered?

Cash Flow

How was the initial planning funded? How was the scheme funded? Was infrastructure funded separately from the housing? Was there subsidy from central government or the local authority? How were higher standards afforded?

We have also collated data sheets on key facts, such as size, density, timing and, where available, cost. Our analysis has enabled us to draw a number of conclusions about the common features in terms of both product and process, which have made these schemes successful, and that could have implications for the future development of Eco-towns in England. We believe there are wider lessons for the UK planning system and the way housing is procured more generally. This applies particularly to implementing the Code for Sustainable Homes, and achieving successful mixed communities with a high proportion of affordable homes.

6.0 Messages from European Experience

6.1 Connectivity

Eco-towns should be closely linked to thriving urban conurbations.

None of the projects we looked at is a stand-alone settlement. All are either urban extensions, or are at least reasonably close to a major conurbation and have excellent public transport, cycle routes and footpaths leading to an urban centre. In The Netherlands, the Government's VINEX programme set a specific location requirement that all the new housing areas should be extensions of conurbations of at least a population of 100,000 people. Proximity to a main railway line (Freiburg, Amersfoort, Adamstown) also reinforces connectivity.

These 'connected' places are able to share their economic, social and transport infrastructure from day one. However, there is often a need to reinforce those connections with new investment, such as a tram link (Kronsberg, Hammarby and Freiburg), a new railway station (Amersfoort and Adamstown) or underground station (HafenCity).

Most Eco-towns are close to cities that are growing (and hence share infrastructure and access to jobs and services, which does not all have to be funded by new developments). Major new settlements are located where there is not only housing need (and hence the need to provide affordable homes), but close to places where there is strong demand as attractive places to live. This, along with the multiplicity of designers and builders, helps to achieve much faster growth rates than in the UK, thus making them more economic to build.

With house buyers commuting ever further to work, 'containment' or self-sufficiency is no longer viable, but rising travel costs will support the development of new homes in sub-regions where there are plenty of well-paid jobs, such as in parts of the Eastern Region of the UK. Also, house buyers require new homes to offer much more than the 'second hand' product. According to research from Savills, they favour established locations with good schools, and will not pay much of a premium for eco-features. Hence, relatively few locations are likely to satisfy the basic requirements needed to 'make the numbers add up' without huge investment in new transport systems.

Our study tour to Kronsberg (built for Hanover EXPO) and HafenCity, which is the largest regeneration project in Europe, discovered that the development process was clearly spelt out in site specific manuals that had benefited from community engagement. Schemes were designed to change behaviour and minimise car dependence. In all cases high quality transport infrastructure from the start helped in building up a community very rapidly. The much greater quality of the public realm and transport systems encourage people to leave their cars behind for most short trips. While the experience of Freiburg is probably the most advanced in Europe in changing behaviour, similar approaches were being used in all the case studies, and the key point is the use of bikes and walking for shorter trips.

- 1 Vauban and Rieselfeld are districts on the edge of Freiburg, and the existing tram system had only to be extended to bring good 'connectivity' to the new development
- 2 Amersfoort safe walking and cycle routes through the site reduce car dependency





Table showing the profile of peoples travel patterns in Freiburg (%).

	Cars	Public Transport	Bikes
1976	60	22	18
1989	48	25	27
1999	43	28	29
2010	34	33	33

Source: Freiburg City Council 2008

6.2 Community

Eco-towns should have a balanced population, with a mix of housing that reflects demand in the wider area, and a community closely engaged in building up the social infrastructure.

All of our projects were in areas of high housing demand. That demand came from across the range of housing cost levels and tenures. Indeed, tenure is rather less of an issue in most other European countries, where there is a wider range of options available and no particular stigma attached to renting. We were particularly struck by the fact that build-out and occupation rates are much faster than in the UK, allowing communities to form and mature over a relatively short time. For example, in Kronsberg, it has been possible to complete 1,000 homes a year and in Hammarby, over 800, whereas in Britain, volume housebuilders are only able to sell one house a week from an individual site, an issue that the Callcutt Reviewⁱ thought required further investigation.

There is a much larger private rented market and intermediate innovations, like cooperative housing, which reduces the development risk and enables communities to grow much more rapidly (hence allowing households to try out an area before committing themselves to purchasing a house).

Moreover, we noted that in most cases, the projects had been received well by the existing community. The reasons for this were to do with the way the municipality had gone about promoting the idea, and the ways that it had involved and engaged with the community. There was less sense of a top-down approach, which was imposing an unwanted new burden on an overloaded infrastructure. Rather, the whole community was deciding what kind of place it wanted to be, and what kind of homes were needed to make growth sustainable in the fullest sense of the term. Local politicians provide leadership over several decades, as in both Freiburg and Amersfoort.



Shops and restaurants were encouraged to move in early by low or rent free periods and the use of temporary spaces. For example, a church in Rieselfeld started off in an empty shop. Schools were provided or re-provided on site to coincide with the early phases, and were designed to be flexible.

The proportion of social housing is kept to below a fifth, and designed so that it does not become 'residualised', for example, by providing ongoing community development and neighbourhood management. Volunteering is promoted and community development forms part of the delivery team.

Sector	Owner occupation	Private rental	Social rental	Year
UK	70	10	20	2001/2
Sweden	55	24	21	1997
Netherlands	53	12	35	1998
Germany	41	49	6	2001

Table showing housing tenure in European countries (%) for the most recent year available.

Source: International Trends in Housing Tenure and Mortgage Finance (November 2004), Commissioned by the Council of Mortgage Lenders, Professor Christine Whitehead and Dr Kathleen Scanlon (London School of Economics)

6.3 Climate Proofing

Eco-towns should have clear targets for saving natural resources in terms of energy, water, waste and good land.

None of our projects claimed to be zero-carbon but all of them (with the exception of Adamstown) had ambitious targets for improvements in environmental performance over comparable schemes in their locality, in terms of their use of energy and in developing or using green technology (50% all round environmental improvement in the case of Hammarby, 60% reduction of CO₂ emissions in Kronsberg). In Freiburg, the projects were within a region already pioneering use of solar energy on a large scale. By this time German schemes had the added advantage of a favourable, nationally set, feed-in tariff for surplus electricity so local people were keen to invest in solar panels. In both Germany and The Netherlands wind turbines are common place and use is being made of ground-source heat pumps in Vathorst on a large scale.

Buildings were generally simple in terms of their form and construction, relying on high standards of insulation and good levels of air tightness, and allowing use to be made of industrialised methods of construction with rapid build out rates. This helped establish a low energy, functioning community early





- Kronsberg the municipality had the long term well being of the residents in mind: here one of a series of community rooms each serving circa 200 dwellings
- 2 The cultural centre in Rieselfeld is one of many community facilities at the heart of the district. Note the civic pride expressed through its double height facade
- 3 Vauban gas CHP plant. With circa 28% CO₂ saving through local energy generation alone, it was no surprise to find district systems a universal solution
- 4 Hammarby Innovative waste strategy gives cleaner streetscape and can lead to alternative sources of energy

on, which was essential for both sustaining the upfront communal facilities and infrastructure as well as for marketing the future phases (achieving robust values). All of the schemes make substantial use of local energy generation as in the form of gas CHP. This alone can reduce C0₂ emissions by circa 30% by saving transmission losses and reusing waste heat. It is considered the single most effective means of cutting CO₂. In some cases, such as Adamstown, CHP is now being incorporated in later phases.

All schemes encouraged a modal shift from car usage to public transport, cycling and walking. The methods varied but in general it was through making the alternatives attractive, enjoyable, convenient and safe. In the case of Vauban in Freiburg, residents were given a very direct financial incentive not to own a car or require a parking space.

Saving energy has long been a priority for countries that lacked the UK's coal and oil resources (and hence homes are better insulated, and often heated through local energy generation and CHP). Utilities compete for contracts to supply new communities. As the need to replace our outworn generating stations and drainage systems becomes more urgent, so utilities may be encouraged to apply practices that are normal in Continental cities, particularly as many utilities are now foreign owned.



The Hammarby Model



In Hammarby, the so called 'Hammarby Model' had been developed through collaboration between the local authority cleansing department, water company and energy company, thereby creating a virtuous circle of turning waste products into energy or returning them to the environment in a useful and harmless form. The Water Cycle shows how to turn a problem into an opportunity.

6.4 Character

Eco-towns should have a strong identity, and offer a choice of attractive places to live in a green and pleasant setting, which helps them to grow relatively fast.

In every case, our examples passed the 'would I really like to live here' test. They felt pleasant, safe and comfortable places to walk around, with high quality streets and open spaces. Cafés and small shops enlivened the street scene and encouraged social interaction.

Most of the examples were at low to medium density (30-50/ha net) which enabled family housing to be provided, either as terraced houses or small walk up blocks of flats or maisonettes. Even at Hammarby, where all the accommodation is in apartment form, there are a high proportion of families with young children. This was partly because of the large size of the individual homes but also because of the child friendly nature of the layout and the provision of schools and nurseries from day one.

In most cases, the architectural treatment was relatively simple and restrained, often enlivened with colour and with planting draping over balconies. Where eco-technology was being used, it did not unduly impinge on the architecture (though the incorporation of solar panels into the roofs of blocks of housing, as in part of Vauban and Rieselfeld in Freiburg creates places that look distinctive).

It was noticeable that in many cases the designers had set out to create a very distinctive and specific identity. In Hammarby, this related very directly to the scale and grain of the city centre of Stockholm, re-interpreted in a modern idiom. In Amersfoort, the three separate developments chose to 'brand' themselves in different ways based on themes such as water or woodland. In Vathorst the marketing tag is 'A world of difference' reflecting the very varied architecture of the development.

In all cases the spaces between the buildings were as important as the buildings themselves and had been designed with great care and attention to detail. Natural landscape features had often been retained, for instance a mature oak woodland in Hammarby or old farm buildings and cart tracks in Vathorst. In many cases water had been used as a focus, whether it is an existing water body, newly created one or using sustainable urban drainage (SUDS) as landscape features.

- 1 Flood risk due to climate change all habitable rooms in HafenCity have been elevated to 7.5m above sea level
- 2 Rieselfeld simple building forms animated by balconies, shading and plants, with the spaces between designed so that children grow up well
- 3 HafenCity the scale of streets and variety of buildings with integrated mixed use all help create a pleasing urban character
- 4 Adamstown has benefited from better sales than conventional developments during the downturn due to confidence of purchasers about community infrastructure being in place





Because of the way the developments were phased and because of faster build rates, they appeared to become established and mature more quickly than UK examples. Essential pieces of infrastructure such as shops and schools and public transport were provided early on.

6.5 Collaboration

Eco-towns should enjoy local authority support and are developed by agencies with a long-term interest, and with active civic leadership.

In all of our projects, the local municipality had taken a leading role in setting the project on the right course and in making sure that quality was maintained through to the end. In some cases, this was made easier by the fact that the municipality already owned or had purchased the land (Hammarby, Freiburg). But in other places (Amersfoort, Kronsberg, HafenCity), the local authority had intervened with private owners to ensure the land would be combined and planned in the way that benefited the local community by pooling sites. The process of getting all the public stakeholders to work together seems much easier, in part because more decisions over resourcing are taken at a local or sub-regional level, rather than relying on uncertain national funding programmes.

Often, the projects had been started by one or more visionary leaders but, perhaps even more importantly, the local authority had some financial capacity and had retained or acquired the skills to manage and direct the project itself. The private sector was invariably involved but within a framework that was strongly controlled and directed towards the vision that had been set. It is probably no coincidence that many of the builders and investors are relatively local.

Special structures and relationships were often needed but these were invariably still linked to the local authority and were subject to control by the community. In Vauban, Freiburg, a forum involving the community was key to ensuring that the social structures were developed hand in hand with the physical infrastructure (and the quality of the landscaped open spaces comes from the way it is procured and managed by the people living around it). In Kronsberg, a special local agency (KUKA) is tasked to deliver the low carbon initiatives, and helps deal with the challenge that many of the occupants come from abroad, and need to have things explained.

The process has been led by local authorities who want to strengthen their communities, with government encouragement and active local involvement (hence reducing the risks associated with putting masterplans together). Local authorities have acquired the necessary technical and financial



- 1 Nieuwland, Amersfoort all the case studies used local features in the landscape and a variety of building design to create unique and distinctive character
- 2 Kronsberg 3000 new homes within a comprehensive civic plan for landscape design, social amenity and low energy. The Local Authority established the land value, and developers were chosen on merit
- 3 Hammarby by retaining more control of land value and design standards not only are the buildings, but also the public realm of exemplary quality
- 4 Hammarby why is it that the Greenwich Millennium Village delivered 600 homes in the space of 6 years, while Hammarby built this number in one year?



capacity through multi-disciplinary teams, local development agencies, and in some cases, public private partnerships with private development companies (hence avoiding unrealistic standards and disputes).

HafenCity and Kronsberg show that it is possible for the local authority to set exacting standards for new developments provided the location is right. In Vauban and Rieselfeld in Freiburg, the municipality has provided leadership over nearly two decades, under the same Head of Planning, and with the active support of the Mayor. Project managers have stayed with the job which means real continuity. Contracts with private consultants have been used to supplement the city's development expertise. Private firms of masterplanners have also been used. The principles are summarised in the Bebauungsplan, which for Vauban is a large one page document.

6.6 Cash Flow

Infrastructure is generally funded and provided from the beginning and separately from the house building budget. There is a wider range of 'entry' opportunities for people to move in.

We were particularly impressed by the way that cash flow was handled. Most of the projects seemed to have been built and occupied over a relatively short time, and with most of the infrastructure in place from day one. This seemed to rely largely on a combination of financial arrangements that were markedly different from those in the UK, and which together greatly reduced the risks involved in development.

Initial planning was carried out with extensive consultation and using public finance and resources to do the necessary work. Transport and environmental infrastructure were frequently funded up front, either by the local authority or by utility companies, using low cost, long term finance with the investment recovered over a longer period. Land was assembled by the public sector, and was paid for as sites were sold or homes were occupied.

Large sites were not generally handed over to one large developer. Within the controlled masterplan and design code, fully serviced parcels were offered to a variety of developers, housing companies, housing associations and co-ownership organisations. By disposing of sites in parcels of around a hectare (or say 50 units), many builders were able to operate at once, thus providing a much greater choice for potential residents. Large sites were broken into manageable parcels, and serviced plots were sold to a wide range of housing associations and cooperatives with overall design guidelines (thus recovering initial investment in land assembly, planning and basic infrastructure). In Freiburg, HafenCity and some Dutch schemes,



bids were selected on the basis of quality, with the price determined as a proportion of the expected sales value. In Hammarby, site values were agreed after designs were complete and sale values established. Experience has been built up (and shared) in designing and building more sustainably through a host of local component providers. Homes were generally made up of factory built sub-assemblies (not hand-made on site and vulnerable to shortages of skilled labour), although we have also found this is not universal and has not been a pre-requisite for achieving high environmental performance.

The tenure arrangements were much more varied and flexible, which allowed people to rent, buy or co-own according to their individual circumstances, and to move between those arrangements as those circumstances changed. Thus building work could proceed rapidly without undue market risk and not subject to whether households could obtain a mortgage or sell their existing property. Where social or subsidised housing was included, this was generally kept to 25% or less of the total development, with the exception of Kronsberg.

The net result is much greater efficiency or return on investment, not just because of the 'learning curve' and higher growth rates, but also because each of the stakeholders sticks to what they are best at rather than trying to get the private sector to take all the risks. Thus utilities compete to install and provide advanced energy systems. Indeed, as the manual produced for Kronsberg says, 'lt should not cost any more to the developer'.

The municipality has played a leading role in three planned extensions to Amersfoort. Local authorities in the Netherlands can raise low cost capital for development projects through the Bank Nermeenten (BNG) that specialises in serving the public sector. Funds are used to assemble land and commission the basic infrastructure. In Amersfoort the local authority has set up a joint venture company with major developers for its largest scheme Vathorst through which land is pooled. The company raised a loan of €750 million at 5% repayable over 15 years. Serviced plots are sold to housebuilders, including housing associations, who build for sale as well as rent, typically in units of 80 or so homes, which are largely in terraces.

Hammarby Sjöstad's rapid build-out rates are some ten times faster than in Greenwich Millennium Village, which is in a similar location. This highlights the importance of a strong masterplan that avoids over-dependence on the private sector and sales rates. The scheme is for 11,000 dwellings in an area of 200 hectares, with a tram extension providing the central spine to the 'fishbone' layout. While it took six years before the masterplan was submitted and approved, infrastructure went in earlier; the first phase was completed four years later, and five years after that the scheme was half way complete, a rate of some 550 homes a year or ten a week. All homes are linked to the municipality's district heating system, and there is a high quality 'water cycle' that recovers waste heat, and other useful products from sewage.

7.0 Conclusions and Key Recommendations

We believe there are significant lessons from our study which point to a more collaborative set of processes that could be applied not just to the emerging Eco-towns, but to any large new housing led community development. These lessons are as much to do with how projects are procured and managed as the physical design. All the case studies, and previous British experience, particularly with post-war New Towns, lead to six main conclusions and a number of other more detailed points, which we have summarised under our six Cs so that they could form the basis of a check-list or charter.

General Principles

- **Vision** The UK can avoid making further mistakes by learning from Europe and earlier British experience with new communities, particularly as far as the location and mix of uses and tenures is concerned.
- **Planning** A properly funded and comprehensive masterplan in spatial, social and economic terms must provide the long-term direction needed to give investors confidence, along with enough flexibility to allow for changing circumstances.
- **Resourcing** Ways of funding social and physical infrastructure in advance of development must be found.
- **Implementation** There has to be a driving force for the life of the project that will secure the commitment of communities and investors alike, and realise the agreed vision in terms of quality and well-being.

Recommendations (the six Cs)

1. Connectivity - building in the right places

Successful new communities in Europe are closely linked to thriving urban conurbations. As a guideline this means a choice of jobs within half an hour's travel by good public transport, plus primacy for walking and cycling within the new settlement.

- a. Choose the right locations which have ready access to jobs, education and services.
- b. Draw on the strengths of existing conurbations and add to them, rather than draw resources away from them.
- c. Build on or add to committed infrastructure such as rail and bus routes rather than starting from scratch.
- d. Work within the framework of Regional Spatial Strategies and Local Development Frameworks.



- Freiburg Vauban the more the municipality are involved and have control, the more the needs of the community as a whole will be met
- 2 Kronsberg has mandatory enhanced building standards to help achieve a saving of 60% CO₂ on 1995 levels. Also subsidies are available to encourage voluntary uptake of Passivhaus Standards



2. Community - working with, and for, the local community

They should have a balanced population, with a mix of housing that reflects demand in the wider area, and the community is closely engaged in building up the social infrastructure. This means that social housing for rent should not account for more than 20 - 30% of the total, with other forms of intermediate housing accounting for the balance of affordable housing. Also it should be indistinguishable to look at, so there is no stigma attached.

- a. Once government has set the broad parameters, allow local responses to be developed with the local authority playing a key leadership role.
- b. Where necessary, supplement and strengthen local authority skills by use of expert agencies (EP/HCA etc).
- c. Allow sufficient programme time for stakeholder and community engagement.
- d. Support neighbourhood development through planning the social infrastructure, such as health, education and meeting places, in parallel with the spatial masterplan.
- e. Achieve a balanced range of tenures and house types with the ability to move easily from one to the other.
- f. Develop long term strategies for community development and management which encourage behavioural change.

3. Climate Proofing – implementing proven ways of saving natural resources

Our European exemplars all had clear targets for saving natural resources in terms of energy, water, waste and good land. In practice, this means avoiding building on good farming land, and using the new settlement to help improve the image and appeal of the wider area. None of the case studies was trying to achieve zero carbon buildings, but all were aiming at doing significantly better than national standards.

- a. Focus on simple, future proof and robust strategies for housing which conserve energy through super insulation and controlled ventilation.
- Implement local strategies for energy, water and waste which are front funded by energy service companies (ESCO's), and multi-utility service companies (MUSCO's), such as Combined Heat and Power.
- c. Minimise waste and maximise efficiency by using modern methods of construction and locally sourced materials that offer a cost effective solution to being carbon-neutral.
- d. Make public transport, walking and cycling options the most attractive options through design and financial incentives.
- e. Provide local guidance and support on technical and lifestyle issues.



4. Character - creating comfortable and appealing places

Successful European settlements have a strong identity, and offer a choice of attractive places to live in a green and pleasant setting, which helps them to grow relatively fast. In practice, they were the work of a large number of designers and developers catering for different markets, but linked together by a very high quality public realm. Theming and branding can help appeal to wider markets than new housing in the UK currently reaches.

- a. Design for all sections of the community but with particular emphasis on homes that are family friendly and human in scale.
- b. Develop a high quality public realm which responds to and uses local landscape character.
- c. Provide useable outdoor space for all, at the level of the home, the neighbourhood block and the wider area.
- d. Encourage variety through using a number of good designers.

5. Collaboration - making the most of scarce resources

The processes for planning and implementation are key. New communities enjoy local authority support and are developed by agencies with a long-term interest and with active civic leadership. Though the relationships varied, there was none of the adversarial and legalistic approach to development that has marred many recent developments in England.

- a. Maximise the use of scarce resources by developing collaborative ways of working between neighbouring authorities.
- b. Build expert, multi-disciplinary teams within local authorities and between public and private sectors that work together on site.
- c. Set up accountable local delivery vehicles that can build consensus, pool expertise, achieve continuity and join up services and infrastructure.
- d. Develop strong masterplans and design criteria which are adaptable over time but which are resistant to dumbing down.

- 1 A new school in Rieselfeld ensuring all essential community infrastructure is in place early, a key to the early success of a community
- 2 Vauban, Freiburg a tight knit community has evolved, and through its success, inspired further development nearby
- 3 HafenCity model of masterplan. All the schemes used models to assist design, communication and sales throughout the project
- 4 More choice in Kronsberg over 45 developers provided a wide range of tenure model and housing type





6. Cash Flow - developing new business models for infrastructure and housing

Infrastructure is generally funded and provided from the outset and funded separately from the housebuilding budget using relatively low cost public finance. There is a wider range of 'entry' opportunities for people to move in due to the importance of private rented housing.

- a. Reimburse land owners out of sales proceeds.
- b. Share the cost of the masterplan to reduce risks.
- c. Investigate better options for long-term infrastructure funding.
- d. Exploit projects that are far advanced or where infrastructure is on the way.
- e. Market serviced sites to a multiplicity of builders with presales agreements, including different forms of tenures to speed occupation and cut costs.
- f. Provide a Community Infrastructure Fund that simplifies Section 106 contributions through a charge related to development value.

8.0 References

- i. The Callcutt Review of Housebuilding Delivery (22 November 2007) by the former Chief Executive of Crest Nicholson and English Partnerships looked at the business model used for new housing. The rate of sales on individual sites was surprisingly low (typically only one a week) suggesting that volume house-builders may prefer to avoid competition. The report recommended that more land should be made available for small builders and that institutional investors should become involved, not just volume housebuilders, through an 'investor model'.
- ii. **Eco-towns Prospectus** published by Communities and Local Government (July 2007). Based on the Town and Country Planning Association work.
- iii. Faced with disappointingly low rates of house building, and widespread unaffordability, the government commissioned a host of studies into why Britain has not built more, several of which have made comparisons with Europe, but without probing into the underlying differences:
 - Eco-towns: Living a Greener Future published by Communities and Local Government (April 2008) as a consultation paper
 - The Egan Review on skills for Sustainable Communities (19 April 2004) by a former motor industry leader
 pointed out that while local authorities should be leading the process, they lacked both the leadership and project
 management skills to do so. Importantly the Review showed that building Sustainable Communities involves far
 more than just housing. There are eight spokes in the Egan 'wheel', which form the basis for a series of programmes
 to provide training and advice, which the Regional Centres of Excellence and the Academy for Sustainable
 Communities among others have sought to provide.
 - The Barker Review of Housing Supply (17 March 2004) by a Bank of England economist put the blame for house price inflation on production rates lagging behind household formation. The ponderous British planning system leads to builders profiting from planning permissions rather than their efficiency in building what customers want. The Review recommended using the uplift in land values to help finance related infrastructure. One result should be the Community Infrastructure Levy.
 - Ends and Means: The Future Roles of Social Housing in England (February 2007) CASE report 34. An important report into social housing by Professor John Hills who is Director of the Centre for Analysing Spatial Exclusion at the London School of Economics, highlighted the problem of 'residualisation' whereby most social housing tenants today are workless. This has led on to reviews of the benefits system, and to the idea of encouraging investment in private renting.
 - International Trends in Housing Tenure and Mortgage Finance by Professor Christine Whitehead and Dr Kathleen Scanlon (LSE), Council of Mortgage Lenders commission (November 2004).
- iv. First European Quality of Life Survey: Life Satisfaction Happiness and a Sense of Belonging (2006). Böhnke, Petra, European Foundation for the Improvement of Living and Working Conditions.
- v. **Eco-towns: Learning from Best Practice** to be published by the The Academy for Sustainable Communities (2008) produced by ERBEDU and URBED.
- vi. Cambridgeshire Quality Charter for Growth www.cambridgeshirehorizons.co.uk/qualitycharter

9.0 Credits

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