t may sometimes seem that the pattern of settlements in the UK is a given. Things have always been as they are. Whilst improvement is always possible radical change is a pipe dream.

Yet there was a radical change at the end of the 19th Century, largely a reaction to the urban squalor of the industrial revolution. The Garden City Movement, combined with the birth of town planning, council house building and low cost home ownership, transformed British towns and cities. We moved away from the compact European model of settlements to the dispersed, low density American model.

As we reach the end of the century it is time to develop new urban models. The nightmare of the industrial city has faded to be replaced by a new nightmare. This can be seen most clearly in resource-hungry American cities, choking in car fumes and socially divided. As the suburbs expand, town centres and inner cities die. In Britain things are not so bad but the writing is on the wall. Over the last 100 years in our zeal to reform the city we have come close to smothering it.

To some this may not matter, they would write off the city as not relevant to modern life. Yet cause and effect become confused as urban squalor, crime and drug dealing become the new evils from which the middle classes flee. But these new urban evils are as much a result of this middle class flight as they are its cause. Urban areas abandoned to those without the means to escape become ghettos, further driving the cycle of decline.

The city is not an anachronism. Vibrant cultures and healthy economies depend on cities. Innovation in all fields of activity depends on human contact. It is in the city not the motorway service station or the suburban close that the creativity of human contact thrives. It is also in cities that walking and public transport become viable alternatives to the car and where a whole range of green alternatives such as commercial recycling, CHP and water restoration can find a market.

ers to SUN Dial not just in the UK but stretching to the United States and Europe. All share an interest in

## Model **NEIGHBOURHOODS**

The aim of the Sustainable Urban Neighbouhood Initiative is to help generate new models for urban development to rival the attraction of the suburbs. In previous issues we have discussed the principles of and justification for sustainable urban development. In this issue we suggest how they might work.

We cannot abandon the city. But we must recognise that its critics are right. People will not be attracted and cannot be forced back into the damaged urban areas which characterise many UK cities. We must repair the damage

It is in the city not the motorway service station or the suburban close that the creativity of human contact thrives

caused by decline and misguided planning, not by importing suburban values but by rediscovering Prince Charles' 'Timeless' urban principles.

All is not lost. Many places are already rediscovering the value of urban qualities. London is seeing an unprecedented revival and many provincial cities such as Manchester, Glasgow, Edinburgh and Leeds are thriving. British cities are becoming 'cool' and the young urbanites are returning. The engines of demographic change and environmental concern will reinforce this trend.

The Sustainable Urban *Neighbourhood* is a model for the type of urban development that these trends might create. However moving from agreement in principle to implementation on the ground is a long and difficult journey. In order to explore the idea further was are developing some practical examples, on paper at least, of how the SUN model might work. We are launching an initiative to design a number of model Sustainable Urban Neighbourhoods which can be used to explore issues such as energy efficiency, recycling, densities and walking distances. Inside this issue of SUN Dial is a study of a hypothetical urban neighbourhood in Manchester and we are currently seeking out further sites where the idea can be tested. We would welcome suggestions for sites that we could look at in this way.

urbea

Welcome to the FOURTH issue of SUN DIAL, the journal of the Sustainable Urban Neighbourhood Initiative

In this issue we move from the general to the specific. Having discussed the issues affecting urban areas in previous SUN Dials, in this issue we look at some practical examples. This includes proposals for a hypothetical sustainable urban neighbourhood in Manchester, a look at new development forms such as live/work schemes and advanced technology housing as well as a view from Los Angeles about the impact of cycling on neighbourhood planning.





MAN EMONSTRATION PROJECTS developed strategies and briefs for housing in a number of towns and cities, including Coventry, Swansea,

developing and exchanging knowledge about how to make settlements more sustainable and how to increase the numbers of people living in town. The SUN Initiative seeks to share knowledge and experience and to act as a think tank to encourage debate on urban issues. In the last 12 months almost a thousand people have contacted the initiative, called into the office or accessed our web site. We have compiled a resource base with over 1,500 articles, books and other publications available through a database as well as a set of 120 case studies. This information is being disseminated through these newsletters, an exhibition (available on request), a report which will soon be available of the seminars we held last year and a forthcoming book. The SUN Initiative is also closely linked to URBED's consultancy work. Through this we have recently

Blackburn and Cirencester. We are also advising the Housing Corpora tion on the guidelines to assess the social sustainability of housing investment

We want to hear from other local authorities or developers who might be interested in putting for ward sites for demonstration projects or sharing experience on projects that are underway. To discuss the possibilities, contact David Rudlin or Nicholas Falk at the SUN office.





0161 226 5078 tel: 0161 226 7307 fax: e mail: Sun@urbed.co.uk web site:

http://www.urbed.co.uk/sun/

#### urbed 🌮

#### Area of BI workspace over B2 workshop units

- One of the problems with much urban development is that it does not make provision for small scale manufacturing yet this is often more appropriate to the skills of urban communities than office based employment. This scheme explores how workshops might be accommodated in an urban area without disamenity to surrounding uses.

**Live/work accommodation** - Units which can be jointly used for living and business (see article on page 6).

# The second secon

hat might the sustainable urban neighbourhood of the future look like? To illustrate the principles that we are exploring through the SUN Initiative this plan was commissioned from Manchester based designers Build for Change.

The illustration is based on the Hulme district of Manchester but we should stress that these are **not** proposals for the area, much of which is currently subject to development proposals. We have instead used the area as an example of the sort of area where a sustainable urban neighbourhood would be appropriate. This could be a site created by the redevelopment of a large council estate, as in Hulme, or might be brownfield land formerly in industrial use. We have taken the area as it exists today and developed illustrative proposals based on the SUN principles. The result is a dense mixed use area based on a framework of traditional streets.

The area covers 112 acres and includes some 2,000 housing units and up to 450,000 sqft of commercial space plus a 75,000 sqft supermarket. The area could accommodate a population of up to 4,000. A wide range of uses have been incorporated into the plan including different types of housing, a supermarket and local shops as well as B1 and B2 commercial space. Also incorporated in the plan are a range of existing buildings to replicate the circumstances that would exist in most urban areas. Indeed the Homes for Change building (see SUN Dial Issue 2) can be seen in the centre of the plan and the recently completed Hulme Arch on the eastern edge. We would however stress again that these are not plans for Hulme but an archetypal plan of the sort of sustainable urban neighbourhood which might be appropriate in many towns and cities across the UK.

The plan has been used to investigate a range of issues affecting the sustainable urban neighbourhood such as gross and net density and its affect on walkability. We have also started to model energy use, the potential for combined heat and power and waste recycling. The results of this exercise are described by Nick Dodd and David Rudlin on page 4.

> Illustration by Jonathan Polley of Build for Change

**Public facilities** - Public facilities such as a health centre, library, pub, an existing church and local shops are located at the junction of the two high streets as an important activity node served by public transport.

Quality space - We have sought to create a high quality urban environment with well proportioned buildings and attractive streets, squares and parks. This public realm is human in scale but urban in nature and designed to promote A rich mix of uses - It contains a diversity of uses, buildings and tenures accommodated within a common street pattern. This reduces commuting and car travel to facilities as well as fostering activity and greater security throughout the day and a more balanced community.

Integration and permeability - A framework of streets to provide a degree of permeability, giving a choice of routes and making the area feel safer. Successful urban areas avoid the development of housing and workspace as defined



interaction and to accommodate the diversity of urban life.

A framework of streets and squares - The area is based on a clear network of streets and public squares designed to serve both as routes and as public places supervised by the occupants of surrounding buildings.



- A critical mass of activity The area includes sufficient density of activities and buildings to create activity throughout the day, to provide people to animate streets and public places and to sustain shops and other public facilities.
- Minimal environmental harm - The development would be sustainable both in terms of its environmental impact and its ability to adapt to future changes. This includes good public transport, waste recycling, combined heat and power, well insulated housing, urban ecology, water saving and sustainable materials.
- estates but rather mix them up and blur the boundaries between them.
- A Sense of Place Landmarks, vistas and focal points are used along with the incorporation of existing features and buildings, or imaginative landscaping and public art, to give the area a unique character and memorability.
- A feeling of stewardship The aim is to promote a sense of responsibility from residents and workers and to encourage them to play their part in the upkeep of the area and to intervene and report crime and other antisocial behaviour.



**Urban park** - There is a tension in urban areas between the desire to create large amounts of open space and the need to maintain densities. Whilst urban communities will often fiercely resist development on land which has been landscaped, the reality is that these areas are a drain on resources, often a target for fly tipping and can be dangerous at night. A better solution is the more intensively used and overlooked

urban park linked to a network of green spaces, including back gardens and green roofs, to support a range or urban flora and fauna.

Student housing Student populations are increasing rapidly in many urban areas and represent an important source of demand for new urban housing.

Urban edges - An important principle of the sustainable urban neighbourhood is permeability to maximise the number of links between and through areas. This however is not always possible where neighbourhoods abut a railway or motorway as illustrated here. The solution is to treat the barrier as you would a river bank with the equivalent of an embankment street so that local traffic can circulate without conflict with the main road traffic.



of life and they can be very difficult to accommodate in urban areas. The Crown Street redevelopment team in Glasgow planned to develop a back of pavement supermarket with parking on the roof but have experienced resistance from operators. Another option is to wrap housing and other uses around the supermarket or to build on the roof. This has been done by Peabody in association with a Tesco supermarket in Hammersmith. The plan shows a similar solution with a landscaped car park to the rear.

Combined heat and power plant and recycling point - The recycling point has been located on the edge of the area so that it can be accessed by lorries. The CHP plant is located away from housing because of the noise generated and to alay public concern about emissions. It is also linked to to the recycling point to allow it to be powered by a waste incinerator. This would be linked to a district heating and a power distribution system serving the area.



Shopping high street and market square Many inner city shopping areas have declined as trade has been diverted to supermarkets. This can even happen around inner city supermarkets as shoppers travel to the supermarket by car and never leave its territory. By linking an urban supermarket to an outdoor market shoppers are offered a wider range of goods and can support a range of small shops.





Existing buildings - Any redevelopment of an existing area will

need to work with a variety of

existing builings. Some like the

old instutute illustrated here on

as landmarks. Others like the

the high street can be refurbished

school and old people's home to

the rear are of less architectural

quality and as single storey build-

ings contribute little to the urban

fabric. These have been framed

by more substantial buildings

to create a boulevard with the

lower buildings in the centre.

















bus route







High streets - Many important routes through

urban areas were closed off in the 1960's or turned into formless dual carriageways. Here the high street has been recreated with existing landmark buildings supplemented by four and five storey development to recreate the character of an important street.

Educational facilities - Like business and retail uses there is a tendancy to develop educational facilities on campus. This illustrates how a university department of a college extension could be integrated into an urban area.

Dense mixed use development One of the principles of urban areas is that the grain of development should increase around activity nodes. This means a greater density of mixed use buildings and decrease in block size,



Leisure and recreation facilities An attempt has been made to integrate leisure facilities into the local shopping centre. The main building is therefore brought to the back of pavement on the high street with outdoor activities to the rear.

Bus routes - The bus routes are based on existing routes running through the area selected for this exercise. The white circles are 160m in diameter representing a 2 minute walk time (in a straight line). This illustrates that all buildings in the area will be within five minutes walk of a bus stop on one of these routes.

# the sustainable urban neighbourhood

ould the high density mixed use urban neighbourhood represent a sustainable means of regenerating the urban fabric of our cities? The Sustainable Urban Neighbourhood is based on the assumption that neighbourhoods are more sustainable environmentally and socially when they include a mix of uses and are built to high densities, so contributing to the vitality and walkability of urban areas.

If we are to prevent further urban sprawl encroaching on remaining greenfield sites, the so called '100 mile city'<sup>1</sup>, we must look to more compact urban forms, the redevelopment of brownfield sites and the reuse of buildings. This is the thrust of European and UK policy which has been actively promoting more 'compact' towns and cities<sup>2</sup>. Planning Policy Guidance (PPG) 13 highlighted the interdependence of transport, landuse and energy use. At least 70% of energy usage is affected at some point by planning decisions with key influences including built form, layout and density<sup>3</sup>. PPG 13's main thrust is to shift locational policy towards the concentration of activities with better and more integrated public transport provision.

But what are the implications of building at a higher density? There has been a significant backlash against these ideas most notably from writers like Michael Breheny and Peter Hall<sup>4</sup>. Indeed Peter Hall in a Guardian article entitled *Who* says we have to slum it? suggested that Government policy to direct new housing into existing cities was a policy 'that did not work even in Stalin's Russia'. Their main concerns are that compact development will lead to 'town cramming' and that cities have become such dirty congested and dangerous places that people can not be forced to live in them. They have also questioned the benefits, suggesting that it is impossible to increase densities to the level required for even a small reduction of energy use. These arguments turn on circumstances at the most local level. What sort of urban areas are created if we increase densities? What are the walking distances to facilities and to public transport? How viable is waste recycling and combined heat and power? These are questions that we are seeking to answer through hypothetical neighbourhoods like the one illustrated on the previous page.

Areas and densities			
AREAS	Acres	Ha.	
Neighbourhood area	112	45	
Developed area (excluding roads)	69	28	
Area developed for housing	49	20	
DENSITIES			
Assumed plot densities (units/acre)	12	25	50
Housing yield	588	1,225	2,450
Concer heuring deveities (units (sous)	E	11	22

#### Density

One of the main bones of contention about urban development is density which, to its critics, is synonymous with overcrowding and town cramming. As the UK Strategy for Sustainable Development suggests, intensification should be a 'dynamic process, but the limits and thresholds must be understood... for the city to be sustainable'2. The neighbourhood illustrated on the previous page seeks to test these limits. It is based on densities of between 25 and 50 units per acre (75-150 bedspaces per acre). These densities are measured to the centre line of the surrounding streets and therefore equate to the standard measure used by most local authorities. Indeed the densities are broadly comparable to the standard set in the Hulme Guide to Development<sup>5</sup> which includes a density guideline of 35 units per acre.

The plan explores the implications of building at these densities. It is clear that 25 units to the acre can be achieved with a mix of terraced housing and flats (Site C). However the higher densities require the predominant use of flats as in sites A and B. It should also be noted that these sites also include a range of other uses. The potential housing yield of the area has been calculated using these two density levels so that at 25 units per acre the neighbourhood would accommodate 1,225 units and at 50 units per acre (i.e. mostly flats) it would accommodate 2,450 units. These densities have been achieved by building to the back of pavement and reducing car parking (by making use of on street parking) as suggested by the UK Strategy for Sustainable Development. It shows that densities of this level are consistent with a high quality residential environment albeit not the sort of suburban environment that has come to be seen as the norm in recent years.

However plot densities have little meaning when considering issues such as walkability. We have therefore looked at the gross residential density of the neighbourhood. The area covered by the plan is 112 acres so that the gross densities across the area would be between 11 and 22 units/acre. This contrasts with garden city densities of 12 units to the acre which would create a gross density of 5 units to the acre. This illustrates the difference between net and gross densities and the danger of using the former to assess urban land capacity and the viability of services such as public transport and recycling. We have therefore used these gross density figures to assess a number of sustainability issues across the neighbourhood.

It is also important to take into account employment uses since three of the sites that we looked at include significant commercial floorspace reducing the net residential density. Density guidelines generally don't take into account non-residential uses and so are difficult to apply to mixed use schemes. Yet the density of people working in an area is just as significant when considering the viability of public transport and the vitality of areas. We have therefore estimated the number of people employed in the area. This is illustrated on table 1 which shows a total of 525,000sqft of employment floorspace, a workforce population of 1,400 and employment densities of 12.5 workers per acre follow suit. Even where restrictions are not imposed the sheer congestion of city streets will create its own disincentive. It is already the case that only 17% of people working in London travel to work by car<sup>7</sup>.

Most urban car journeys are of short duration and do not enter city centres. This suggests that they cross urban neighbourhoods to reach facilities located outside the central area<sup>8</sup>. The experience of new towns such as Milton Keynes has shown that low density development encourages car use. Increasing the residential density could therefore discourage car usage for these shorter journeys. Models of the impact of public transport and traffic restraint measures seem to indicate only a limited impact on overall traffic volumes across urban districts, as demonstrated by studies of the Metrolink development in Manchester. These findings illustrate that the volume of cross town traffic is inextricably linked to the urban layout and the accessibility of facilities9. It is widely accepted that to promote public transport, development needs to be concentrated in a string of compact centres along public transport routes. This concept is common to the Town and Country Planning Association's vision of new towns, the American Pedestrian Pocket and the Urban Village.

These concepts are based on the viability of public transport and the walkability of urban areas both of which impact on urban form. The maximum distance that people are prepared to walk is 2,000m although the optimum is 800m (a comfortable 10 minute walk)<sup>10</sup>. Indeed in shopping areas developers use 400m as the distance that people will walk with shopping. This means that to promote walking, distances within the neighbourhood need to be short. The example neighbourhood is approximately 1000m by 740m so that even with the main shops located at one end walkability is maintained. The second criteria is public transport. The Local Government Management Board's sustainable settlements guide suggests net densities of 100 persons per hectare, 40 to 50 units per hectare, are necessary to support a good bus service. Net densities of 50-74 units per hectare are required to support a tram service<sup>11</sup>. Garden city densities would be achieve around 50 persons per hectare (30 units per hectare net) where as the layout shows densities of between 25-50 units per acre (62-124 units to the hectare). To this should be added the workforce densities showing that the neighbourhood comfortably exceeds optimal densities for bus services and would be able to support a tram service.

Gross housing densities (units/acre) 5 11 22 Gross housing densities (units/ha) 13 27 54 Gross housing densities (persons/ha) 22 46 92 Assuming av. 1.7 persons/h'shold

EXAMPLE SITES	Units	Workspace sqft	Area ac.	ha.	Density (units/ac)	Density (units/ha)
Site A	110	0	2.8	1.13	39	97
Site B	75	15,000	1.5	0.61	50	123
Site C	115	13,000	4.4	1.78	26	65
Site D	250	47,000	10.2	4.13	25	61

#### Employment

	Floor area sqft	jobs/sqft	total jobs	
Retail	187,500	400	469	Includes 75,000sqft Supermarket
B2	112,500	500	225	
B8	67,500	800	84	
B1	157,500	250	630	
TOTAL	525,000	1,408		
Density	12.5 worker	s/acre 31 worl	kers/hectare	

#### (31 workers per hectare).

#### Urban Transport

The most common justification for mixing uses and building to higher densities is the reduction of car use and the promotion of walking, cycling and public transport. Whilst commentators have questioned research<sup>6</sup> which suggests that people living and working in dense urban areas make less use of their car it stands to reason that car use will not be reduced unless the alternative of walking, cycling or using the bus exists. It seems likely that we have not yet made car use sufficiently unattractive to affect a significant modal change. Yet any reasonable view of future projections of car use must conclude that greater restrictions and disincentives on car use are inevitable. Cities like Edinburgh are already planning road pricing, car pooling and car free developments (see insert box) and it is only a matter of time before other cities

#### Energy use

We have also used the neighbourhood to model energy use, the results of which are set out on table 2. Whilst buildings can be made energy efficient wherever they are built there are some inherent advantages of building within dense urban areas. The main advantage is that urban terraces and flats have fewer external heat loss walls so that the heat loss for any given level of insulation is lower. They are also more likely to be sheltered by surrounding buildings. However against this should be set the possibility that they will be overshadowed and the fact that they are unlikely to optimise their aspect to maximise passive solar gain.

However the real advantages in terms of energy efficiency and emissions come with the introduction of Combined Heat and Power systems (see SUN Dial 2). We have therefore assumed that the neighbourhood will include a district heating system. This is likely to be more viable in dense urban areas which reduce the distances over which heat and power mains extend, minimising thermodynamic losses and infrastructure costs. The mix of uses will also help to smooth out the demand profile over the day. Because there is just the one heat source for the area, a district heating system is more efficient than individual boilers in each building, particularly given technological improvements in heat metering.

However greater savings can be made by linking the district heating to a CHP system. This would use gas to generate electricity and heat increasing operating efficiencies to 80-90% so reducing bills to local residents and busiin Sheffield and is planned in a number of other cities including Manchester. We have calculated the weight and calorific value of the waste generated by the housing in the area. This would only contribute a small percentage of the district heating requirement. However it may be possible to link the plant into a wider waste collection system again as has been done in Sheffield. Waste incineration does carry the risk of further pollution and potentially dioxin emissions. It would therefore need to be carefully controlled and subject to local consultation.

These are just a number of the issues to be tested on the hypothetical neighbourhoods being developed by the SUN Initiative. We will be undertaking further work and looking at other areas over the coming months. However the initial findings do suggest that the ideas are practical and can create significant environmental benefits.

- 100 Mile City D. Sudjic Andre Deutsch London 1992
  - Green Paper on the Urban Environment - Commission of the European Communities 1990, Sustainable Development - The UK Strategy - DOE January 1994.
- **PPG 13 a guide to better practice** - Department of the Environment - HMSO, London. March 1994.

3.

4.

- Various publications however a good summary of the arguements can be found in the report of the TCPA Enquiry 'The people - Where will they go?' Summarised in Town & Country Planning July August 1996
- Vol 6. Guardian article 5th Feb 1997. Hulme Guide to Development - Manchester City Council June 1994
- Original research by Newman and Kenwor thy in the United States and ECOTEC in the UK, critique by Michael Breheny in The Compact City and Transport Energy

Lifergy-use and	CHP ASSess	Sillenc	_		
HOUSING	25 units/ac	net	50 i	nits/ac net	
Units	1,225		2,4	50.0	
Jnit demand (KWh)	7 093		7 0	02	
2. Water heating	3,417		3.4	17	
3. Power	1,472		1,4	72	
Total demand (MWh)					
1. Space heating	8,677		17,3	54 71	
3. Power	1,803		3.6	07	
Workspace	Workspace		Supe	ermarket	
Demand (MWh)	41,500		/,1	20	
Power	2,531		4,7	74	
	Heat		3,9	42 1,140	
Totals for workspace	and supermarke	t. (MWh	)		
Power	7,306				
leat	5,083				
OTAL for housing an	d commercial (N	1Wh)			
Power	9.109		10.9	13	
Heat	17,945	17,945		07	
1CG	1.97			2.82	
	25 units/ac	net		50 units/ac	net
CHP Generator options	CI engine	Gas t	urbine	CI engine	Gas turbine
CO <sub>2</sub> (t)					
Emissions	6,804	6,6	03	11,042	10,801
	4,550	5,2	00	5,900	0,225
Emissions	70		11	86	15
Savings	-50		9	- 59	11
S0 <sub>2</sub> (t)					
Emissions	3		2	9	8
Savings	90		91	107	109
VASTE					
Units	1,225	2		,450	
Population	2,100	4		,200	
Naste (Kg)	/35,000		1,470	,000	
Jseful heat (MWh)	1,102	2.		,205	
% Heat load	6.14		7.16		

#### Edinburgh gets tough on the car

Many cities have laid claim to environmental credentials over recent years. However the City of Edinburgh is now showing the way with radical measures to reduce car use and gives an insight into the sort of policies which are likely to become commonplace in the future. The aims of the city's radical policies are to ease congestion, reduce car dependency and cut air pollution.

A road pricing scheme encompassing the whole city could be in place by the year 2000. This will create a cordon around the city's outskirts where motorists will have to pay  $\pounds$ 2 to enter the city. The idea is that this serves the dual function of reducing traffic volumes and raising revenue for public transport investment. With relatively few entry roads and little through traffic, the city is considered an ideal location for such a scheme.

Edinburgh is also setting up a car sharing scheme. A taxi style booking system will be operated with communally owned cars located in reserved spaces. A clubcard will be used for fuel and a contract agreed for maintenance and insurance. This will give people inexpensive access to a car without actually having to own one although the hope is that they will think more about car use and make greater use of alternative forms of transport. 300 towns in Europe currently operate such schemes with Berlin offering a leading example where there are now 3,000 members of car sharing clubs.

Edinburgh is also home to the UK's first car free housing development (pictured below). To be developed by Canmore Housing Association. The scheme, which is being built on disused rail land, will consist of 121 flats which will provide 'energy efficient homes in a car free environment'. People wanting to buy or rent flats will have to sign an agreement not to own a car and, like the city car share scheme, the estate will have its own pool of cars for hire. The land that would have been used for parking will be used for terraced gardens, allotments and reed beds for grey water recycling. The site is developed to a density of around 50 units to the acre, compatible with the high density option on the

nesses. We have calculated the total energy requirements of the area of 9,109 - 10,913 MWh for electricity and 17,945 - 30,807 MWh for space and water heating (depending on the density of the area). The CHP plant would then be sized to meet the electricity requirement. This would require additional boiler capacity to meet winter heat loads. The table illustrates the likely effect on emissions of this type of system. This is based on two alternative systems, gas turbine and a compression-ignition engine (CI Engine). The table shows potential reduction in emissions of round 40% for CO<sub>2</sub> and the virtual elimination of SO<sub>2</sub> emissions. However with the CI Engine there would be an increase in NO<sub>v</sub> emissions which would need to be addressed with pollution control measures on the CHP plant.

This system could then be linked to a waste incinerator so that a proportion of the heat is generated from waste. This already happens



5

THE SUSTAINABLE URBAN NEIGHBOURHOOD

 urbed?
 Live/work by Peabody in Docklands

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available
 sciation that we are available

 sciation that we are available

The only true live/work scheme by a housing association that we are aware of is the Westferry scheme being developed by the Peabody Trust on the St.Vincent site near Canary Wharf. This is part of a wider development by Peabody and is aimed at promoting local economic development, particularly in the cultural industries. The courtyard scheme which will go on site within a few months. There are 9 BI units on the ground floor below 27 live/work units on the three upper floors. The live/work units have a floor area of 800sqft and 18 are open plan. These units have heating, a shower and a basic kitchen but will otherwise need to be fitted out by incoming tenants and will be let on standard business leases. 9 of the units are being fitted out by Peabody and will be let on assured shorthold tenancies with a

licence to occupy the workspace. In this way Peabody, a registered charity, is the legal occupier so that the units are not subject to business rates. These will be used as incubator units on the understanding that residents/businesses will move on after 3 years. It is anticipated that 60% of the unit floor area will be used for business with 40% used for living. All of the units will be let at cost rents (rather than market rents). They are largely funded by Peabody with cross subsidies from sales elsewhere on the site although the land has been gifted by LDDC (£375,000 equivalent grant).

Contact: Lef Teris The Peabody Trust 45 Westminster Bridge Road, London, SEI 7JB tel:0171 928 7811 - fax:0171 620 1243

eople have always worked from home and with the growth of teleworking this is becoming more common as people use information technology to avoid the long commute to work. However the average teleworker is generally happy tapping away on his or her computer in a spare bedroom. But what about other types of work that is not possible from the spare bedroom or kitchen table? Why not build somewhere designed both for living and working? This type of development is called live/ work and is just starting to gain a foothold in the UK market. Sometimes called atelier units, these combine workspace and living accommodation behind the same front door.

There are established models for this type of development. The traditional corner shop includes a commercial unit on the ground floor linked to residential accommodation above. Similarly the original New York loft was a place where people, often artists, both lived and worked. Indeed the recent interest in live/work in the UK is closely linked to the growth of loft developments. As part of the SUN Initiative we recently undertook a review of live/work accommodation in Hackney and discovered a large number of private schemes, often in converted industrial buildings. Indeed so prevalent has live/work become in this part of London that the London Borough of Hackney has adopted Supplementary Planning Guidance covering this type of development.

Away from the private sector live/work is less common, however a few developments are starting to emerge. We review below proposals in Liverpool, Hackney and London Docklands. All of these seek to use live/work as a tool for economic regeneration by promoting cultural industries. Indeed artists and other individuals working in creative industries are seen as the main market for this type of development. Whilst this may perpetuate the myth of the artist's garret, market research undertaken by URBED in Hackney suggests that there is indeed a strong demand from artists. They are often young and unable to afford separate premises to live and work. They also work irregular hours and some activities, such as the firing of pottery require constant attention. As a result many artists work from home and find the bespoke live/work unit more appropriate than the restrictions of the domestic environment.

Forget for a moment mixed use development. Whilst the debate continues about whether it is possible, viable or even desirable to mix uses vertically within buildings a few intrepid developers are going one step further - they are mixing uses within live/work units

## Bringing work home

growing interest of associations in urban regeneration and economic development. However housing association grants cannot be used for workspace and are not used in either of the schemes to fund the residential element of the live/work unit. The third scheme is being developed by a workspace developer approaching the issue from the other end of the spectrum. However there are again problems since many workspace grants, particularly from Europe cannot be used for housing. In a mixed use scheme the costs of different parts of the development can be separated for grant purposes. However the nature of live/work means that the split of uses is flexible and will vary depending on the occupants. This becomes very difficult for grant funders, the main exception being English Partnerships which has a remit to fund both housing and workspace.



London Fields - The heart of a creative community

As part of the SUN Initiative we have recently completed a study for the London Borough of Hackney in London Fields. The twin aims of the study were to advise on the letting of 26 live/work units recently completed by the council in partnership with Greater London Enterprises. The second was to advise on the second phase of the scheme which involved the demolition of a group of houses squatted by local artists. The Phase I live/work units (pictured above) are essentially good quality industrial units with planning consent for residential use on a first floor mezzanine. Following our recommendations a grants package has been introduced to help incoming tenants to fit out the living areas. Demand for the units has been strong, particularly from cultural industries. Our recommendations for phase II, which have also been agreed, were to develop a more intensive scheme of live/work units and artists studios allowing the retention of 21 of the 29 houses. The squatters have since established a co-operative to refurbish these houses, also for live/work, as the heart of an arts community.

Contact: David Morrissey Hackney Environmental Services 161-189 City Road, London, ECIV INR tel:0171 418 8042 - fax:0171 418 8100

#### Live/work by Maritime in Liverpool?

Maritime Housing Association in Liverpool have become increasingly interested in mixed use development and were suggested to us by the Housing Corporation as one of the few associations undertaking live/work schemes. They have undertaken a number of schemes which mix living and



working targeted at cultural industries. Important as these schemes are, the uses are separated so that they are not true live/work schemes. However one of the planned developments on Lord Nelson Street, next to Lime Street Station, may develop into a live/work scheme. This involves the conversion of a derelict listed terrace of Georgian houses. 21 one bed flats will be created on the upper floors with the basement converted to 9 artists' studios which can be used for live/ work. The scheme is being undertaken with a local developer and the studios will be managed by an organisation called Arthouse which Maritime Housing Association has helped to establish. The total costs are £1,137,601 and it has been funded with a long term loan of £542,601 and grants from the Housing Corporation and **English Partnerships.** 

The problem of live/work development tends to be that it fits uneasily into current funding regimes. Two of the schemes described below are being developed by housing associations. This reflects the Live/work may not be the future of urban housing. It is however a good example of the type of innovation entering urban development as demographic and economic change creates demand for new types of housing and workspace. It illustrates that loft living need not be restricted to the urban nouveau riche and could play an important role in economic development and environmental sustainability.

Contact: James Hill Maritime Housing Association Corn Exchange Buildings, Fenwick Street, Liverpool, L2 7QH tel: 0151 236 3275 - fax: 0151 255 0669 e mail: 101660.2700@compuserve.com

6

### urbed 🕊

e have, in this country, two primary typologies for urban housing: the terraced house and the block of flats. Each has its own shortcomings not least of which for the users is the problem of shared common areas.

The Advanced Technology House (ATH) concept takes as its starting point the notion that every home should ideally have its own landholding and its own entrance off a street. It reduces the size, and thus the cost of this tenure, by reducing the home to a fundamental unit of space - the single room - and exploits the possibilities offered by the latest technology to stack this single cell in a wide variety of urban forms. This provides the high density of development associated with flats but with the occupants' presence on a true, public street. Maintaining this direct relationship to the street is an essential feature of the ATH type and acknowledges the importance of the patterns of human exchanges and the extent to which built form can enable or constrain these patterns.

Because the house is only one room deep, it can be arranged both in a 'side-by-side and a 'back-to-back' configuration - a type formerly found difficult to make habitable but now possible to high standards given modern mechanical ventilation and acoustic attenuation techniques. The advanced technology town house is, therefore, a single aspect, narrow fronted unit. It is exceptionally energy efficient, sharing walls and recycling heat to a thermal store.

To reach the upper floors, the houses are fitted with an internal stair and a two-person lift driven by linear motors of a type already in commercial use in Japan. The room-to-room travel times are less than for a flight of stairs and, with no motor rooms, the lift-shafts take up little space and can be extended upwards if required. The lift-cars are lightweight and inherently safe, relying on an inductive effect to descend in an emergency. Larger items of furniture can be brought in using an integral, external hoist.

The ATH homes are ideal for owner occupancy or shared equity, sitting as they do, on their own freehold plots, with or without a garden and/or on plot parking. Importantly, the ATH can also be placed in juxtaposition with other uses to create truly mixed use developments with employment and shopping in close proximity, or to reorganise existing single-use blocks such as retail sheds, multi-storey car parks or shopping centres, which presThe ATH concept capitalises on those sites considered marginal for conventional housing development. Building at densities of well over 300 habitable rooms per hectare, the concept aims to provide a flexible building block which can include one and two bedroom flats thus addressing the growing demand for smaller housing units which comprise so much of the projected new housing demand.

For a sophisticated, demanding but demographically ageing population, where proximity to the town's facilities will become increasingly essential, and interdependencies within flats increasingly intolerable, such high density autonomous dwellings with lift access may ultimately be considered a necessity.

The ATH represents a radical re-think of conventional housing wisdom and as such, it will require a reassessment of planning and housing policies. If there is a genuine will to review the form of housing needed for the next century, we believe the ATH approach can contribute much towards a revitalisation of our cities.



We are well aware of the resistance we are likely to encounter in promoting a truly radical re-think of conventional housing wisdom, but if the government is serious about building 60% of new homes on brown field sites for the projected 4.4 mil-

# Advanced Technol ogy Housing

In the late 80's Avery Associates started investigating the application of modern construction technology to housing - a sector notorious for having retreated into conservatism and pastiche following the failures of the 1960's and 70's. The outcome was Advanced Technology Housing

- an attempt at a new prototype for high density living. **Marcus Wilshere** argues that the model is ideally suited

#### to the Sustainable Urban Neighbourhood.



ently contribute so little to the vitality of surrounding streets.

For Avery Associates' Silvertown competition entry (above right), a total of 1540 advanced technology houses were proposed, of several types with and without gardens, some back-to-back but most fully integrated into other structures, including car parking, industrial and commercial buildings, and an 80,000 seat public stadium. This ability to juxtapose what hitherto had been considered entirely incompatible uses is a key factor in the plan. As such, it was a demonstration of how cities of the future might be condensed and revitalised. lion new households by 2016 then designers are going to have to make some pretty imaginative leaps in their thinking.

Whatever the outcome of the political debate, current approaches to housing by volume builders and most housing associations is resulting in suburban development to the detriment of our cities and, just as importantly, to our countryside too. Building on marginal sites and in close proximity to what has for so long been considered incompatible uses could restore the complex pattern of human exchanges which characterise our best loved urban places.

7

Marcus Wilshere, Avery Associates, Vigilant House, 120 Wilton Road, London SW1V 1JZ, tel: 0171 873 8568, fax: 0171 233 5182, e mail: marcus@wilshere.demon.co.uk

#### urbed P



## Bicycling AND THE MULTIPLE MAIN STREET MODEL

Twenty-five years ago American concerns about car use would have been irrelevant in the UK. It is with a certain sadness that Los Angeles writer Richard Risemberg considers how the American attitude to the car has spread to the UK and other countries in the English-speaking world, Latin Europe seeming somewhat more resistant to the infection. In this article he outlines his proposal for creating settlement patterns which will promote bike use, making common cause with many of the issues being promoted by the SUN Initiative.

erhaps it is time to expand the definition of bicycle advocacy. For a long time now - at least three decades - advocacy has concentrated primarily on bike paths and lanes, bike parking, and facilitating multimodal commuting, where the bicycle is loaded onto a bus or train for part of the journey. There is no question that all of these things are helpful and sometimes necessary, just as are the efforts to encourage private employers to accommodate bicycle commuters, along with those that seek to open people's minds to the very possibility of themselves commuting by bike. But there is a longer-term project that, however quixotic it may now seem, will ultimately be necessary, and it is one that the activist community should engage itself upon now, in however small a way: that is the proposal of new zoning laws and planning practices to encourage decentralized development, which would site workplaces and housing near enough to each other that most people would not

lands. If you must drive forty miles to the office, drive ten miles to the restaurant or movie house, drive your children five miles to school, and drive four miles to buy bread and spinach, you will never meet your neighbour on the corner for a chat on the way home from your chores, you will probably never consider doing any of those chores on a bike, and you will spend altogether too much of your life inside a small metal box. It is a sad fact, as most of us know, that, since the forties, the American city has been structured around automobile use; no matter how many miles of bike lanes you stripe, you will not convince the suburban mother to pedal ten miles for her groceries. Now that the nineties are drawing to a close, we must promote a new wave of urban planning that re-establishes the neighbourhood structure both in our cities and in the suburbs. This is a project that can be initiated first in the suburbs, because it is there that employment centres do not yet exist in the concentrations that they do in the city, and it is for the suburbs that planning practices can be changed to prevent the concentration of office and retail space in too small an area, distant from housing. In effect, one can create the new city as a series of small towns that abut each other, each having its Main Street with its shops and offices surrounded by a few blocks of houses and small apartments, rather than continuing the practices now prevalent of building vast, sterile industrial parks abutted by huge malls, with most of the workers and customers living in more or less distant developments that are themselves devoid of any services save gas stations and video stores.

In the cities themselves, the project would be both easier and more difficult: the cities have always had housing and employment side by side, but the cities are also full of massive office and retail developments, crowds of skyscrapers and hulking malls, which need far more workers and customers than the surrounding neighbourhoods can generally provide, and which will not be torn down readily no matter how attractive an alternate form of development might be.

But the suburbs are just now beginning to draw employment centres in a big way, and now is the time when the activist community can voice its support for planning practices that will make a human scale the most important element of new or rebuilt neighbourhoods. The Wal-Mart, the giant Safeway, the industrial park, are more of an impediment to bicycle commuting than rainy nights or arrogant drivers—the fact that the adult use of bicycles in a community has been noted as an indicator of that community's livability shows us that this idea is at least an undercurrent in activist thinking. A civic structure that is built along the lines of the small town will naturally accommodate bicycles; one built around the car never will, no matter how many bike paths are put in. The bike paths will be used—on weekends, for pleasure riding. But they will do nothing to improve the workday world. We must begin to model our cities on the supercomputer, with its parallel processors, or on the Internet: many small towns working in concert will be more efficient than one big sprawling one that cannot communicate well within itself. (Even in Los Angeles, the capital of car culture, you can see how well the Main Street model works in isolated but effective neighbourhoods such as Larchmont Village or parts of Santa Monica, where bicycles are ever-present.)

A way to bring this about may be to demand that commercial development be limited in some sort of ratio to housing: small offices, small shops, surrounded by neighbourhoods: again, Main Street, but Main Street every ten blocks. After all, the point of bicycle advocacy is not to ask favours for ourselves, who currently ride bicycles for transport; it is to use bicycling to make our world more livable, for those who ride and for those who don't. Encouraging the multiple Main Street model—and it is a model that some architects and urban planners have begun promoting in the last three or four years will automatically result in more people riding bicycles, without bikepaths, without special laws or special treatment-just because a bicycle will then be the obvious best way to get around.

Richard Risemberg, a photographer and writer based in Los Angeles is currently preparing a further essay on subsidy-switching: a plea to stop subsidising private auto use and instead more fully support public transport, as has been done in France to a certain extent, and in Holland. He would be interested in any information, preferably on the Web, describing UK (and, if possible, French) tax policies on private and public transport. His contact details are as follows:.

Richard Risemberg, 205 N. Ridgewood Pl. Los Angeles, CA 90004 USA, rickrise@waonline.com



The Sustainable Urban Neighbourhood Initiative is supported by the Department of the environment's Environmental Action Fund, a major charitable trust and URBED

The initiative is managed by URBED from its Manchester office by David Rudlin with administration provided by Christina Swensson and Helene Rudlin with additional research by Nick Dodd.

The views expressed in this newsletter do not necessarily represent those of the Department of the Environment or any of the project's sponsors

This news sheet has been researched, written (unless otherwise credited) and designed by URBED which is a not for profit urban regeneration consultancy set up in 1976 to devise imaginative solutions to the problems of regenerating run down areas. URBED's services include consultancy, project management, urban design and economic development. The SUN Initiative further develops URBED's growing involvement in housing development and continues the work of the 21st Century homes project.

need to commute longer than is comfortable for them to do by bicycle, bus, or foot.

After all, that's how it used to be in cities all over the Old World, and it is the human-scale structure of those cities, with their neighbourhoods that have actual neighbours in them, where the cop lives around the corner and the grocer sleeps next door, that give them the charm that Americans travel thousands of miles at great expense to see; and it is the development of the urban/suburban dichotomy, with the majority of work located in the city and the majority of workers scattered in surrounding housing tracts, that have made of the cities, ghost towns, and of the suburbs themselves, emotional waste-

#### Why NOT get involved?

Our aim is to develop the SUN Initiative as a broadly based network of organisations and individuals interested in the sustainable urban development. We do not have a membership but people can get involved in a number of ways...

**Mailings:** If you did not receive this newsletter by post please contact us and we will add you to our mailing list.

Contributions: We would welcome letters or articles for future issues of this newsletter.

**Examples:** We are compiling a resource base of good examples of sustainable development both nationally and internationally. We would therefore welcome details of projects that you are involved in.

**Sponsorship:** We are seeking sponsors for future issues of this newsletter and for exhibition material. Details are available on request.



8