Part 2

THE INFLUENCES

Underlying the sedimentary strata of theory and policy described in Part 1 of this book is a bedrock of influences which has always shaped housing and urban develop-ment and is likely to do so in the future. The second part of this book describes these influences and how they are likely to shape the home of the future. These we have char-acterised as the 'Four Cs': Conservation, Choice, Community and Cost.

'We continue to build post World War II suburbs as if families were large and only had one bread winner, as if jobs were all downtown, as if land and energy were endless, and as if another lane on the freeway would end traffic congestion'

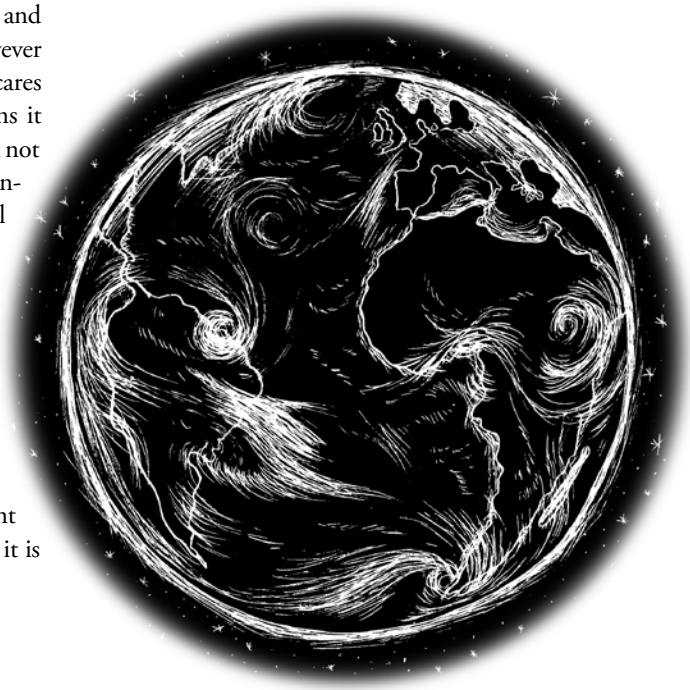
Peter Calthorpe - The Next American Metropolis: Ecology, community and the American dream, Princeton Architectural Press, 1993

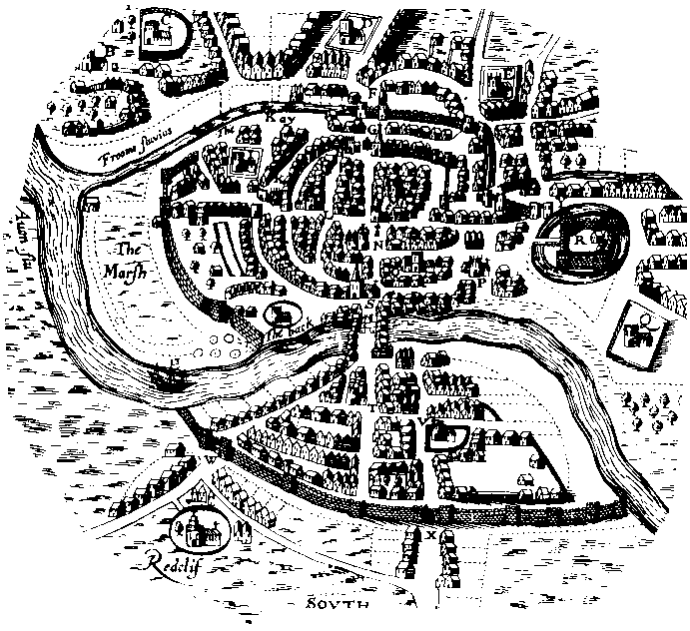
Chapter 5
Conservation
Environmental pressures on future settlements

The growth in the environmental movement has been one of the most significant influences on government policy and public attitudes in the last two decades of the twentieth century. It has developed from a fringe concern of fringe groups into a principle which, whilst not always followed, is at least accepted by a large majority of decision makers. Ever since we ventured into space and were able to look back on the earth it has somehow seemed a much smaller and fragile place than we hitherto assumed. Pollution and resources have probably always been a concern to city dwellers. In the past however these were local concerns about smog or contaminated drinking water and it was generally assumed that the capacity of the atmosphere, rivers, land and sea to absorb pollutants was limitless. However with the advent of nuclear power and scares about man-made pollutants such as dioxins it has became clear that there was much we did not understand about our effect on the environment. We have come to recognise that natural resources are much less abundant than had previously been assumed and natural ecosystems much less resilient. Evidence has accumulated that natural systems are being thrown out of balance leading to global warming, ozone depletion, the loss of species and habitats and the poisoning of seas and lakes. While there has been a great deal of scientific debate about the nature, extent and causes of these environmental changes it is now widely accepted that policy should be guided by the 'precautionary principle'[1]. This suggests that the consequences of environmental change are so significant that we should act now rather than wait for scientific proof by which time it is likely to be too late to repair the damage.

The environment and the shape of settlements

It may seem that the influence of the environment on housing and urban development is a relatively recent phenomenon. However, as we saw in Part 1 of this book, certain environmental issues have been a concern of housing reformers for much of the century. Tony Garnier's Cité In-





In tune with the environment: Medieval cities such as Bristol were shaped by the availability of natural resources such as water and scaled to the needs of travel by foot

dustrielle in 1917 incorporated very careful passive solar design and was self-sufficient in terms of energy through hydroelectric power. His main concern however was the health-giving properties of daylight and fresh air rather than energy and heating. Indeed for much of the Victorian period daylight and fresh air were important guiding principles and lay behind the development of by-laws as well as the recommendations of the Tudor-Walters committee.

Compared to today's global environmental concerns these were however peripheral issues. To uncover the fundamental trends which have guided development we need to consider the impact of resource consumption. As we have seen, the pre-industrial city was far more compact than today's settlements due largely to the limited availability of resources and the technology with which to exploit them. When the main sources of energy were water and the horse, settlements had to be located on rivers or streams and their scale was determined by distances that people and goods could cover on foot and by horse. With the advent of steam power and canals, locational constraints were not so severe but settlements still had to be sufficiently dense for people to get about on foot and factories had to be multistorey to allow the efficient use of belt-driven machinery. When workers had no way of commuting over any distance, it was inevitable that their houses should be tightly huddled around the factories or mills where they laboured.

The dispersal of housing and industry over the last 150 years has been made possible by the harnessing of energy through technology. The development of electricity and gas supplies, the railway system and, most important of all, the internal combustion engine, have shaped the way that human settlements have developed in the twentieth century. This has largely been unconstrained by the notion that energy is a finite commodity, particularly in the area of transport. The availability of cheap fuel in the first half of the twentieth century allowed people to write off energy costs as a locational factor so that settlements were able to disperse.

The same is true of waste; indeed the ability to dispose of human wastes and other pollutants has in the past been an important constraint on the growth of human settlements. The medieval city may have been able to dump its waste over the city walls but, if cities were to grow, more sophisticated means of disposal were required. The city of the industrial revolution is infamous for its pollution, smogs and the resulting mortality rates of its population. The solution however was not to curtail harmful activities, such is not human nature. Instead technologies were developed to mitigate the environmental effects of growth such as smokeless fuel, clean electricity and gas, piped water supplies and sewage systems. More importantly for the city, zoning policies were developed to separate the people and their homes from the polluting industry.

It is not the nature of cities to accept external constraints on their growth. There have been cities in history which have disappeared as a result of environmental factors such as drought or pollution but there has never been a city which has averted such disaster by limiting its own growth. Indeed it is doubtful whether the citizens of cities or their governments have the capacity to limit growth. Jane Jacobs has argued[2] that cities

are always impractical. Cities in every age have grown beyond the point where the problems of energy supply, water, food and waste can be easily solved; just as cities today are not practical in terms of car use and congestion. She suggests that this impracticality is an essential spur to technological innovation to solve these problems which in turn drives economic development. London was more impractical in the seventeenth century as witnessed by the Black Death and the Great Fire than it is today despite being almost hundredth of the size it is today.

Profligate use of energy has characterised much of the nineteenth and twentieth centuries. This was brought to an end not so much by the environmental movement but by the oil crisis of 1974, which led to escalating energy costs and a far greater concern to reduce energy use. The environmental movement was able to use this concern to change attitudes through ground-breaking books like Rachel Carson's A Silent Spring and The Limits to Growth published by the Club of Rome[3]. Since then attitudes have changed and it is no longer assumed that traditional energy sources and natural resources are infinite, nor indeed the capacity of the environment to deal with the effects of consumption. Growth remains the driving force of world economies and has been synonymous with increased consumption. However environmental considerations can no longer take a back seat and governments in the developed world have been wrestling with the seeming contradiction of sustainable development.

Attitudes to resource consumption have been closely linked with the growth of cities in which human activities have become increasingly divorced from nature and natural ecosystems. In modern cities energy is available at the flick of a switch, water is on tap, resources from all over the world can be purchased in supermarkets and waste can be flushed away or left out for collection. The environmental consequences of our urban lifestyles are effectively hidden or packaged up and located at a distance. As a result there is little incentive for people in cities to pursue more environmentally-friendly lifestyles because the benefits of this are hidden from them. However Ulrich Beck in his book Ecological politics in an age of risk[4] has argued that this is changing as a result of health scares. In recent years such scares have been legion in the UK with concerns such as BSE, E.coli food poisoning, air pollution alerts and the huge growth in asthma cases, summer droughts, and concerns aired in the press about toxic and carcinogenic substances. Beck suggests that, while these risks may seem unconnected, they are bringing home to the public the fact

A sustainable settlement? New development models like the American Pedestrian Pocket are also based on the needs of travel by foot and public transport

that environmental issues can have a direct effect on them and their families. When we have to ask whether our food and water are safe to eat and drink and our air safe to breath we might increasingly question a system in which these necessities are controlled by distant authorities beyond our control and influence. This, he suggests, will increasingly influence public attitudes to the environment.

Cities may no longer belch smoke and pollution as they did in the industrial revolution. They have however become symbols of our resource-hungry society sucking in energy and raw materials and spewing out waste and pollution in linear systems which are entirely divorced from natural ecosystems. Yet the availability of energy and resources in the twenty-first century is likely to be much more limited than it has been in the past. Just as profligate energy use and a disregard for environmental consequences allowed settlements to sprawl, so resource austerity may make this sprawl seem immoral and may cause a return to more compact settlement forms. Thus transformed the city may come to be seen as a tool to address many environmental concerns. This was the conclusion of the European Green Paper on the Urban Environment[5], which saw a new type of city as the answer to many environmental concerns – the compact, walkable city. In advocating the compact city the European Union referred back to pre-industrial cities such as Siena as a model. The same has happened in the UK and US where models such as the Urban Village[6] and Pedestrian Pocket[7] have been put forward as sustainable settlement forms to promote walking and public transport. Thus the influence of the environment on human settlements could come full circle and the sprawl of the twentieth century may come to be seen as a temporary aberration.

The impact of environmental concerns

The growing awareness of environmental issues has resulted in international agreements, most notably the 1992 Rio Summit which committed national governments to strategies for sustainable development. The best definition of sustainable development is still that put forward by the Bruntland Commission[8] – 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. In tune with the spirit of the 1980s the UK government summed up the same sentiments using the language of the market: 'Sustainable development means living on the earth's income rather than eroding its capital. It means keeping the consumption of renewable natural resources within the limits of their replenishment. It means handing down to successive generations not only man-made wealth… but also natural wealth, such as clean and adequate water supplies, good arable land, a wealth'[9].

Yet defining sustainability is one thing, achieving it is quite another. The fact that agreement was reached at Rio may have been remarkable but many of the targets set have not been met. Indeed many governments – most notably the US – have failed to put in place policies which make meeting the targets even a remote possibility because of their reluctance to sacrifice the nirvana of growth. Policies instead have been driven by crisis management with individual initiatives introduced in response to environmental scares, such as the banning of CFCs in response to the discovery of the hole in the ozone layer. Whilst individual initiatives can be important, what is needed is a more comprehensive approach to ensure that human activities are more sustainable. It is true that this may mean accepting lower levels of growth, but this is a small price to pay compared to the impact on growth of environmental collapse if we do nothing.

The development of a more comprehensive approach lies at the heart of the United Nation's and European Union's[10] current thinking on environmental policy. They are developing a more system-orientated approach which looks at the whole cycle of production, consumption and disposal to get a clearer picture of environmental impacts. Another important concept is BPEO (Best Practical Environmental Option) which suggests that all decisions should be taken to minimise their environmental impact within

the constraints at the time of the decision. The Environment Agency in the UK is starting to adopt these approaches and it is likely that they will lead eventually to a situation where environmental considerations lie at the heart of government decision-making. This would have far-reaching effects on urban planning, house-building and transport policy.

The impact of environmental concerns is not however confined to public sector decision makers. Far more important in terms of its global environmental impact is the private sector. On the surface the environmental movement would appear to have deeply affected the private sector. The green consumer has become a force to reckon with and most companies are now concerned to emphasise their green credentials. It is however far from clear whether this represents a cultural change in the attitudes of the private sector or is little more than clever marketing and public relations. In some cases it can be both, as with the introduction of a set of ethical and environmental principles by the Cooperative Bank in the UK. There is little doubt that this was a sincere attempt by the bank to put environmental and ethical considerations at the heart of its corporate decision-making. Yet it was also a very powerful marketing tool and helped the bank to firmly establish itself as one of the big players in the UK market.

Even if the private sector's new-found environmental awareness is only public relations it can still be a powerful force. A good example is the Brent Spar oil rig incident in 1995 where public pressure forced a multinational oil company to abandon its plans to sink the rig at sea despite good scientific advice which suggested that this would be no more damaging than other options. In the face of such public opinion manufacturers are concerned to review their policies and to trumpet the 'greenness' of their products. Goods labelled as environmentally-friendly sell from supermarket shelves, ethical bank accounts attract new customers and environmental pressure groups attract larger memberships than political parties. These private sector concerns spill over into the development industry as companies ensure that their buildings comply with their environmental policies. They are however yet to have any real impact on the housing market. The green consumer may be happy enough to criticise a large company for its environmental performance but is less willing to apply these same principles when spending their own money on a house.

While the environmental movement may have achieved many successes in changing public and corporate attitudes as well as the emphasis of government policy, progress has been painfully slow. Targets are set on the basis of what can be agreed rather than what is needed and the unsustainable forces of private consumption continue largely unchecked. Looking ahead to the twenty-first century there would appear to be only three possible scenarios. The first is that we continue as we are at present in the hope that technological developments will avert the prospect of environmental collapse. The second is that the world somehow turns out to be a much more robust place than many scientists currently believe. The third is that policies to address environmental issues become much more effective than they are at present. The only responsible option open to us is to plan on the basis of this third scenario. In this case it will no longer be sufficient to pay lip service to environmental concerns in the twenty-first century, some much more fundamental changes will be necessary and this is likely to have a fundamental affect on housing and urban areas.

In order to assess the extent of this impact it is important to review the range of environmental issues which are likely to be important in the next century. These are summarised in the table on page 78.

Global warming

The overriding environmental issue today is global warming caused by the greenhouse effect. The Inter-Government Panel on Climate Change[11] has estimated that global temperatures will rise by 0.2 – 0.5°C per decade in the next century leading to extreme weather conditions, crop failure and coastal flooding. The British situation was

SUMMARY OF ENVIRONMENTAL ISSUES AND THEIR IMPACT ON URBAN DEVELOPMENT

Issue	Impact	**Policy context**	**Implications**
Carbon dioxide	Global warming leading to temperature rises of up to 0.50C per decade and a rise in sea levels of up to 6 cm per decade	Rio targets to reduce emissions to 1990 levels by 2000. Kyoto targets agreed in 1997 to reduce global emissions by a further 6% by 2008 and European emissions by 8%. The UK government has set a target for a 20% reduction on 1990 levels by 2010	30% of CO2 emissions relate to housing and 23% to transport although the latter is growing rapidly. Need to increase energy efficiency and reduce car use
Ozone depletion	Destruction of the ozone layer by up to 8% in northern and mid latitudes threatens an increase of 25000 skin cancers and a 15% drop in global food production	Montreal Protocol 1989/90/92 and the UK Environmental Protection Act 1990 seeks to phase out CFCs and to reduce HCFCs	The main impact on the building industry will be the phasing out of insulation materials which incorporate CFCs and HCFCs
Rain forest	The destruction of rain forests is increasing global warming, reducing natural diversity and a possible source of new drugs	None	The avoidance of tropical hardwoods in buildings such as window frames and plywood
Car use	Has risen from 219 billion km/year in 1981 to 330 billion km/year in 1990. Similar increases predicted into the future unless action is taken	Government committment to reducing car use in Sustainable Development - the UK Strategy (currently being revised) PPG 13, reduction in road building, Integrated transport policy being prepared	60% of housing on brown field sites, increased densities, road pricing, limits on out-of-town development, improvements in public transport, restrictive parking policies
Natural resources	The environmental impact of materials in terms of extraction, manufacture, transport, use and disposal	Government policy to ensure sustainable supply through minerals PPGs, alternative sources, more efficient use and recycling	The use of locally sourced materials, timber from managed sources, bricks fired with landfill gas, recycled materials such as PFA
Recycling	The UK produces 20 million tonnes of domestic waste per year only 5% of which is recycled. This is wasteful of resources and energy as well as using up landfill sites and producing methane which contributes to global warming	Government target to recycle 25% of household waste by 2000. Landfill tax introduced in 1994 and increased in the 1998 budget.	Domestic and trade waste recycling, segregated collection, local recycling points, segregation of waste within the home
Water	Water use is increasing leading to droughts and potentially limiting development in the SE. Purification and disposal uses large amounts of energy	Government regulation of the water companies, targets for the reduction of leakage, domestic water metering.	In an energy-efficient home water bills can be more than all other utility bills. Water capacity may limit development. Greater demand for water saving features.
Ecology	The loss of ecosystems, diversity, and the extinction of species	Government biodiversity Action Plan seeks to protect specific areas and species and increase overall diversity	Protection of habitats may limit green field development. Site ecological surveys, permaculture, planting, gardens, parks, land-
Acid rain	Acid rain is caused by sulphur dioxide, smoke, and oxides of nitrogen. 20% of UK trees are affected plus northern lakes	Government target of 60% reduction in sulphur dioxide emissions by 2003 and 30% reduction in nitrous oxide by 1996 achieved by switch from coal-fired power stations	The main cause of acid rain is now car emissions which will be a further justification for measures to reduce car use

documented by the UK Climate Change Impacts Review Group in its report published in July 1996[12]. This predicted that by 2050 UK average temperatures will rise from 9°C to 10.6°C, sea levels will rise by 35 centimetres and rainfall by 10%. Climate systems will move northwards by about 200 kilometres so that southern England will acquire the climate of the Loire region in France. This suggests that the south will become drier and subject to droughts whilst the north will become wetter and prone to flooding. The impacts are however very difficult to predict because of the complexity of global climate. It is possible that melting polar ice could cause the Gulf Stream to change its course which would leave the UK icebound like other countries on the same latitude.

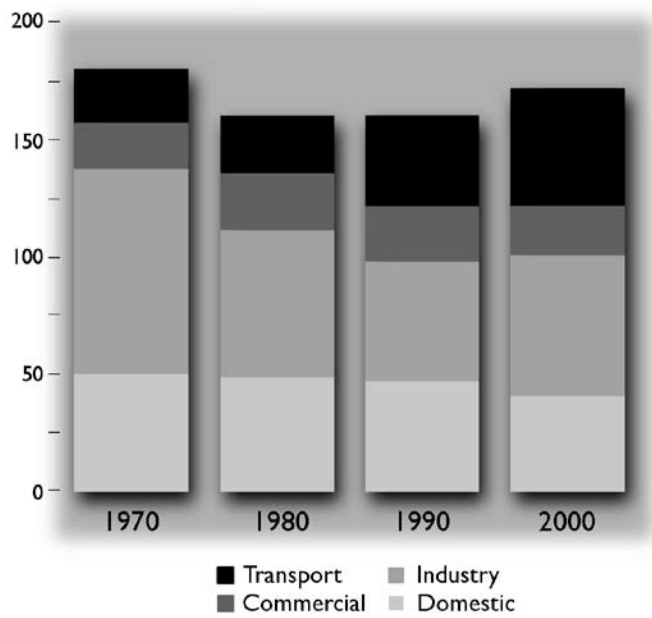
The problem with such predictions is that they sound like scare stories. Compelling as the evidence may be many people, including decision makers, find it difficult to imagine the loss of large areas of coastal land to rising sea levels or the collapse of agricultural production. These are however not theoretical predictions. Global average temperature rises have already been measured and many scientists believe that the exceptional storms and heat waves across the world in recent years are the results of this.

Global warming results from the collection of greenhouse gases in the troposphere which then act like a greenhouse to trap infrared radiation. About 50% of the greenhouse effect is caused by carbon dioxide (CO_2). Other gases such as CFCs and methane are more damaging but are produced in much smaller quantities. Fossil fuels account for 80% of CO_2 emissions, 30% of this relates to housing, half of which comes from space heating. Transport is responsible for 23% of emissions and is of particular concern because, whilst other sources of CO_2 are being reduced, transport is projected to rise to 26.7% of emissions by 2005[13].

In 1992 the Rio Summit set global targets to reduce CO_2 emissions to 1990 levels by the year 2000[14]. In the UK we produced 158 million tones of CO_2 (MtC) in 1990 and in order to get back to this level by the year 2000 annual emissions have to be reduced by 24 MtC. The UK and Germany are the only Rio signatories which look likely to meet these targets although in the UK this is largely the result not of energy saving but the switch from coal to gas fired power stations.

In Kyoto in 1997 governments signed up to binding targets for a 5.2% global reduction in CO_2 emissions on 1990 levels over the next 15 years although, within this, different targets were agreed for different countries, Europe's being 8%. While an agreement was eventually reached, the meeting uncovered a range of international tensions. The UK for example has already committed itself to a 20% reduction in emissions by 2010[15] whereas in the US a coalition of interests has been lobbying hard for their government not to sign up to any reductions fearing loss of jobs and economic activity. On the other hand developing nations argue, with some justification, that pegging their emissions to 1990 levels will prevent them from catching up with the established economies of the west which are pegged at much higher CO_2 levels.

It could be argued that these international agreements are determined by what it was possible to agree rather than what was necessary. As an illustration of this the UK government's



Carbon dioxide emissions by sector: *Source UK Government*

scientific panel on global warming estimated in its July 1996 report[16] that even if greenhouse gas emissions were 'chopped off at the knees' it would be 50 years before improvement in global warming would be possible to measure. It is therefore likely that by 2050 we will be looking at reductions of up to 60% on 1990 CO_2 emission levels in western nations in order to stabilise emissions at a sustainable level[17]. This will bring into stark focus issues of equality between nations. Is it right for the US to peg its emissions to a per capita level ten times greater than a developing nation? There are many who argue that a common per capita emissions target should be set for all nations which would mean that the burden will increasingly be placed on the developed world.

CO_2 production is a function of energy use from fossil fuels. Measures to reduce CO_2 emissions are likely to be a more important constraint on energy use than scarcity of supply. For years the hope was that nuclear power would overcome problems of scarcity. This however has its own environmental and financial problems not least with decommissioning. Recent announcements suggest that there will be no more nuclear power plants developed in the UK and it would be unrealistic to rely on this sector. A better option is renewable energy such as hydroelectric power, wind, wave and tidal power which do not pollute or produce CO_2. These may also carry environmental costs, such as the flooding of valleys or tidal estuaries or the erection of wind turbines on attractive hillsides. However while these problems are of local concern, they are as nothing compared to the global impact of fossil fuel use. The fossil fuel levy in the UK, while designed to support the nuclear industry, has led to an increase in wind generation and there are proposals for tidal barrages on the Bristol and Mersey estuaries. It is however unlikely that renewable energy will replace fossil fuels in the foreseeable future as the market remains dominated by short-term financial considerations. The decline of the coal industry and the deregulation of the electricity market has, for example, meant that the main area of investment has been in gas fired power stations yet gas supplies will not last for more than a few decades.

One of the problems with the current approach to power generation is that it is based on large power stations which are inefficient. Even the most modern plant only converts about 30% of available energy into electricity. Much is lost as surplus heat, or because the plant must be sized to peak demand. Losses are also incurred through the distribution of power over long distances. The solution to sustainable power generation may therefore not lie in large capital investments. A more realistic option may be more local power generation, such as the plans

by the Japanese government to have a million roofs generating solar power or neighbourhood combined heat and power plants. Such solutions would be more responsive to demand, avoid distribution losses as well as making it possible to use surplus heat. The experience of continental Europe suggests that we may be on the threshold of major change in the power generation industry. Market intervention by the German government, for example, to reduce the cost of photovoltaic technology is transforming the economics of power generation. Carbon taxes are also being considered by many governments[18] which will increase the costs of fossil fuel generation. It is therefore possible that housing and urban areas in the future will need to be designed for a much less energy-intensive way of life and also to accommodate a range of local power generation technologies.

Other global environmental issues

The other great global environmental concern is the loss of the ozone layer, although this is of less relevance to physical development. Ozone in the upper atmosphere protects the earth from ultra-violet rays that can cause skin cancers and crop failure. The British Antarctic Survey first identified an ozone 'hole' over the Antarctic in the 1970s but this did not affect populated areas. However in recent years ozone depletion has been documented globally amounting to 8% per decade in northern latitudes. This has been associated with an increase in skin cancers and unusual and persistent weather patterns in the winters of 1992 and 1993. A number of substances are responsible for ozone depletion, the most damaging of which are chlorofluorocarbons (CFCs). These substances are controlled by the 1989 Montreal Protocol, which has been twice updated and sought to phase out these chemicals by 1996. In the short term they are being replaced with less damaging hydro-chlorofluorocarbons (HCFCs) although these too will be phased out by 2030. This will affect household goods such as fridges as well as insulation materials. There is also widespread concern about the loss of the rain forests which reduces the planet's ability to absorb CO_2 as well as harming biodiversity and removing a rich source of new drugs.

This will affect the building industry which will need to find new forms of insulation and phase out of the use of hardwoods from unsustainable sources in building components such as window frames and plywood. It is however unlikely to affect the way that settlements are planned.

Pollution

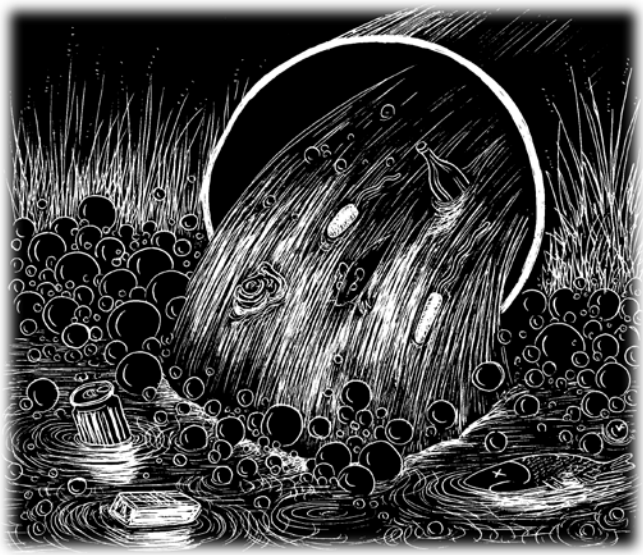
Local environmental issues are likely to affect the planning of settlements to a far greater extent. One of the most important is air pollution. British cities have suffered from air pollution for well over a century. As late as the winter of 1953 urban smogs caused 4 000 deaths in London, largely as a result of the burning of coal in domestic fires and emissions from industry. The 1953 smogs gave rise to the Clean Air Acts of 1956 and 1968 and the introduction of smokeless fuels meant that smogs became largely a thing of the past. However air pollution remains a problem and domestic heating has been replaced by transport as the main source of the problem. Today's pollutants are oxides of nitrogen (NO_x), carbon monoxide (CO), particulates and volatile organic chemicals (VOC). NO_x and VOCs can react with sunlight to create ozone, something which may be of benefit in the upper atmosphere but

is damaging to health and plants at ground level. Background ozone levels have doubled in Britain over the last century and we now regularly break World Health Organisation guidelines particularly in hot summers.

NO_x is also an increasingly important cause of acid rain. This was previously caused largely by sulphur dioxide (SO_2) from manufacturing industry and power generation. While SO_2 emissions have been reduced (by 45% since 1970) NO_x from road transport has risen steadily and is now a significant cause of acid rain. Twenty per-cent of UK trees are estimated to be affected by acid rain as well as a number of lakes in Scotland, although there is some evidence of recovery in northern forests. The trend with chemical emissions has therefore been for industry to put its house in order as a result of regulations but for these gains to be partly cancelled out by the growth in pollution from cars. Here progress has also been made with more efficient engines, catalytic converters and lead-free petrol. Yet while individual cars may be less polluting their numbers and use are growing so that overall pollution continues to increase.

Water and sewage

Another important local issue is water use. In a wet island like Britain it has in the past been difficult to persuade people that water is a scarce resource. However the severe droughts since 1988, particularly 1995, which may be an early sign of global warming, have exploded this perception. In hot summers reservoirs have run dry and river extraction has caused levels to become dangerously low, endangering wildlife. In the south-east in particular the margin between available rainfall and demand is perilously small and is being eroded by new development. Indeed water companies in the UK have demanded rights of consultation on major planning applications and have predicted that they will be unable to meet the anticipated demand from the projected increase 4.4 million households in the next twenty years.



Water saving is also important because of the vast amounts of energy used in purification and sewage treatment. The quality of water in the UK is very high but having expended so much energy in purification, up to 25% of the water leaks away in the distribution system and once it gets to the home a further third is flushed down the toilet. It then creates problems with disposal and in many coastal areas sewage is still pumped into the sea, something which is being phased out by European directives. Like power generation the response to these problems has been seen in terms of capital investment and new technology, such as the London ring main. Plans are also being considered to pump water between catchment areas, to develop desalination plants for sea water and to incinerate sewage sludge. All of these will be tremendously expensive both in terms of finance and energy use and yet will do little more than prop up a linear system of resource consumption. A more economic and sustainable option would be to turn this linear system into a circular system by which water is recycled and reused.

Water saving may therefore play an increasing role in future development. The first steps have included the introduction of water metering to give users a financial incentive to save water. Requirements have also been placed on water companies to reduce distribution losses. To go further than this, homes and urban areas in the future will need to be designed to make much

more efficient use of water. This might include water collection from roofs, the restoration of grey water (water from sinks and baths) to flush toilets, and composting toilets. At present there are only a few environmental demonstration projects which include such systems. Schemes like Hockerton in Newark and Sherwood include reed beds to recycle water and in Berlin there is even an urban block which purifies waste water through a series of reed tanks down the side of the building. While these may not become a common feature of urban areas, technologies are developing for the local treatment of household sewage. One example is the bioworks developed as part of a regeneration project in Kolding in Denmark (see page 163).

Domestic waste

Domestic waste is a further concern. The UK produces 20 million tonnes of domestic waste a year, only 5% of which is recycled. This represents an enormous waste of energy and natural resources and blights huge areas of land with tipping. Landfill sites also produce methane which contributes to global warming. While the UK lags behind on many environmental issues, nowhere is this more true than in domestic waste recycling. In cities like New York, where landfill sites are scarce, recycling has become compulsory, and in Holland segregated waste collection bins are available on every street. Vienna recycles 43% of its waste compared to only 4% in London[19].

Yet in the UK recycling is little more than a middle-class fad. Local authorities have made progress in the provision of public recycling points but recent research has suggested that the environmental impact of people driving to these recycling points outweighs the environmental benefits of the materials recycled. Beyond this recycling has been left to the voluntary sector and (where it is profitable) the private sector. It is extraordinary that in the UK we have just been through a major reform of waste collection through compulsory competitive tendering (CCT) yet in virtually no cases did the tender documents make provision for segregated waste collection which is a prerequisite for recycling. What happened was that we switched from dustbins to wheelie bins which required equally significant investment in new bins and refuse vehicles. However because the wheelie bins were larger and easier to collect they actually increased the volume of unsegregated waste.

The response to increasing waste has again been to look for technological solutions. One of the most popular has been waste incineration which is currently the subject of a number of major Private Finance Initiatives. This can have benefits if incineration is used to produce domestic heat, as in Sheffield, or even for power generation. It can however create environmental problems due to the emission of dioxins and is also fiercely resisted by local people. It is, in any case, a very inefficient means of unlocking the energy in waste.

It is therefore likely that the segregated collection and recycling of waste will become much more common in urban areas. At present only a few areas like Milton Keynes have segregated collection, although it is being considered in detail in London. Indeed an indication of what segregated collection might mean for urban areas can be seen from a detailed study recently completed for the London Planning Advisory Committee[20] which was piloted in a number of areas. The key breakthrough in making the scheme viable was for residents to put out all

recyclable material in one container. This is then collected by an operative using an electric hand cart which runs on pavements. The cart carries a number of sacks for different types of material which are sorted on the spot by the operative. When full the sacks are then left at a pick-up point to be collected by an electric refuse vehicle called the 'Mother ship'. This system has brought the cost of segregated collection down below that of normal refuse collection. It is ideally suited to high-density housing areas, including flats, and the take-up rates by residents on the pilot projects have been very high. It will be adopted in London in the near future and interest is being shown by other authorities so that it is likely to be widely adopted in urban areas.

The impact on development

It is clear that environmental concerns go far wider than domestic energy consumption. There is a bewildering range of issues for the would-be environmentally-conscious developer to consider and on many of these issues the advice from experts is confused and sometimes contradictory. One very specific example illustrates the point. In the Homes for Change scheme in Manchester (see Chapter 13) there was a long debate about the roofing material for the building because members of the co-operative wanted something other than a traditional roof. The roof of the building was curved and it was eventually decided to use aluminium, which received wisdom suggests is environmentally harmful because of the vast quantities of energy used in its smelting. However it allowed a lightweight roof so saving on construction, was very recyclable and, if it was sourced from hydroelectric powered smelters in Canada, produced no CO_2. Just as the group was feeling good about this decision it was pointed out that the energy used in transporting the aluminium from Canada probably cancelled out any benefits and a locally sourced material would have been better! Such confusion illustrates one of the reasons why progress has been slow. It is likely that in the future new information systems and concepts such as the Best Practical Environmental Option[21] will make these decisions easier and will become an increasingly important part of development decision-making.

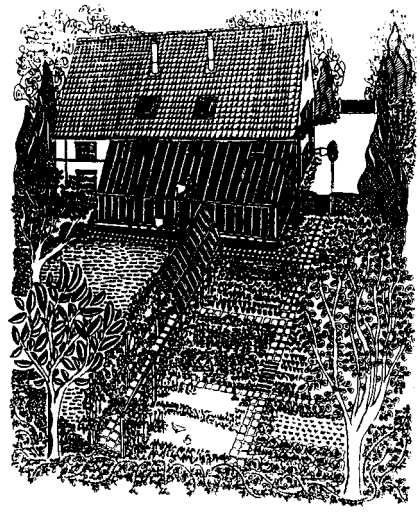
This assumes that the developers of housing and the planners of cities are committed to more sustainable forms of development. Yet they are unlikely to be converted into environmental pioneers by conscience or consumer pressure. More important will be increasing legislation stemming from international agreements and fiscal measures such as carbon taxes which will give them no option but to become greener. But there is as yet little evidence that this is happening. Whilst the green consumer may have caused toilet roll manufacturers to rethink their product they have had little impact on house builders. As a recent survey of house buyers concluded[22]: 'Energy efficiency is said to be important but only when prompted. It is perhaps an aspirational necessity rather than something which will actually influence the decision to purchase'. Why is it that people are concerned about the fuel consumption of their car but not their heating system? Why do they care that their washing up liquid is green but not their house? A few developers, such as Admiral Homes through their Green Ribbon scheme, have developed and successfully marketed green housing. They are however very much the exception and to most developers and buyers the quality of the fitted kitchen is of far greater importance. The situation is not much better with social housing. True there have been a number of high profile low-energy housing schemes by developers such as North Sheffield Housing Association and Gwalia in Swansea. However these exceptions disguise the fact that the majority of new social housing does little more than meet Building Regulations and energy efficiency is seen as an expensive luxury despite the benefits to tenants in terms of comfort and running costs.

What is more, efforts to improve the environmental performance of housing have gone down something of a blind alley. Most effort has gone into the thermal efficiency of a small number of new houses and has largely ignored the existing stock as well as other forms of domestic energy use such as appliances and

AUTONOMOUS HOUSING

There have been a number of autonomous houses built in the UK such as the house illustrated to the right which was designed and lived in by the architects Robert and Brenda Vale. They also designed a scheme that has been hailed as the UK's first genuinely self-sufficient settlement, a group of five autonomous houses in Nottinghamshire. The houses promoted by Nick Martin of the British Earth Sheltering Association produce their own power and water and recycle their waste. The development is partly underground with south-facing sunstores. The plans include 3000 trees to be planted for shelter, wildlife, and coppicing along with ponds for water supply, sewage treatment and fish farming. A wind turbine will provide power and residents will farm the surrounding 25 acres for food.

The scheme is on green belt land and despite 'breaking all of the planning rules' has been welcomed by the local Newark and Sherwood Council which is planning to build a hundred autonomous council houses within the next five years.



transport. In new super-insulated housing, heating is now a minor energy user. Yet effort continues to be put into further improvements whilst the houses are often located in remote areas and require gas-guzzling cars to get to vital facilities. What is more this esoteric research into energy-autonomous housing is leaving behind the vast majority of new houses which are still being built without tried and tested, cost-effective energy saving measures.

It is therefore unlikely that public pressure and housing developers will bring about change on their own. Action from government is required and is already forthcoming. Most high profile are the occasional government energy-saving campaigns. However more significant is the increase in insulation standards introduced through Part L of the 1995 Building Regulations. This is now equivalent to the standards achieved in some of the early energy-saving schemes in the 1970s. These thermal efficiency standards will be further increased next year as part of the overall strategy to reduce CO_2 emissions. The political minefield of VAT on fuel is also part of the strategy. Despite the controversy that this has promoted it does highlight the fact that taxation will increasingly be used to reduce demand, as in the 'carbon taxes' being considered in California and proposed by the Green Party in Britain.

The stranglehold of the car

The environmental villain of the twenty-first century will be the car not the home. The effect of environmental concerns on housing design will be as nothing compared to attempts to reduce car use. As well as being the fastest-growing source of CO_2 emissions, cars are responsible for low-level ozone pollution, acid rain, the use of resources through road building, and carcinogenic particulates. Roads cover 1.5% of the UK land area and passenger kilometres travelled by car have doubled since 1981[23]. Congestion costs industry £15 billion pounds a year[24]. For years governments have attempted to respond to the congestion caused by this increase by building more roads. More than 9000 kilometres of new roads were built between 1985 and 1990 in England and Wales. However even government is beginning to recognise[25] that new roads are as likely to increase car use as to reduce congestion and so can make the problem worse. This has been picked up by the Labour government which has launched a major consultation on its proposals for an integrated transport policy. It is therefore likely that the battles over Twyford Down and Newbury in the mid-1990s will mark the end of major road building in the UK and the emphasis will change to demand reduction.

The attachment of people to their cars will however be hard to break. People sit for hours

in traffic jams and car speeds in many towns can be easily outstripped by a sprightly pedestrian so that mobility is not the only consideration. Investment in public transport is important but bus travel now accounts for only 6% of distance travelled[26]. This is partly due to the quality of public transport but also to social attitudes since buses have increasingly been abandoned by the middle classes and are unable to serve dispersed settlement patterns efficiently. The development of trams in cities like Manchester, Sheffield and Birmingham may start to change the image of public transport but can only serve a small part of these conurbations. It is therefore likely that further measures will be used such as road pricing and taxation on fuel. Jorge Wilheim, who was responsible for organising the Habitat II conference in Istanbul, postulates in his book Fax messages from a near future[27] a city where the private car has been abolished following the 'Big Jam' and transport needs are served by public cars which can be picked up and returned at service stations around the city. Such systems are already a reality in some European cities and are being actively considered in UK cities such as Edinburgh.

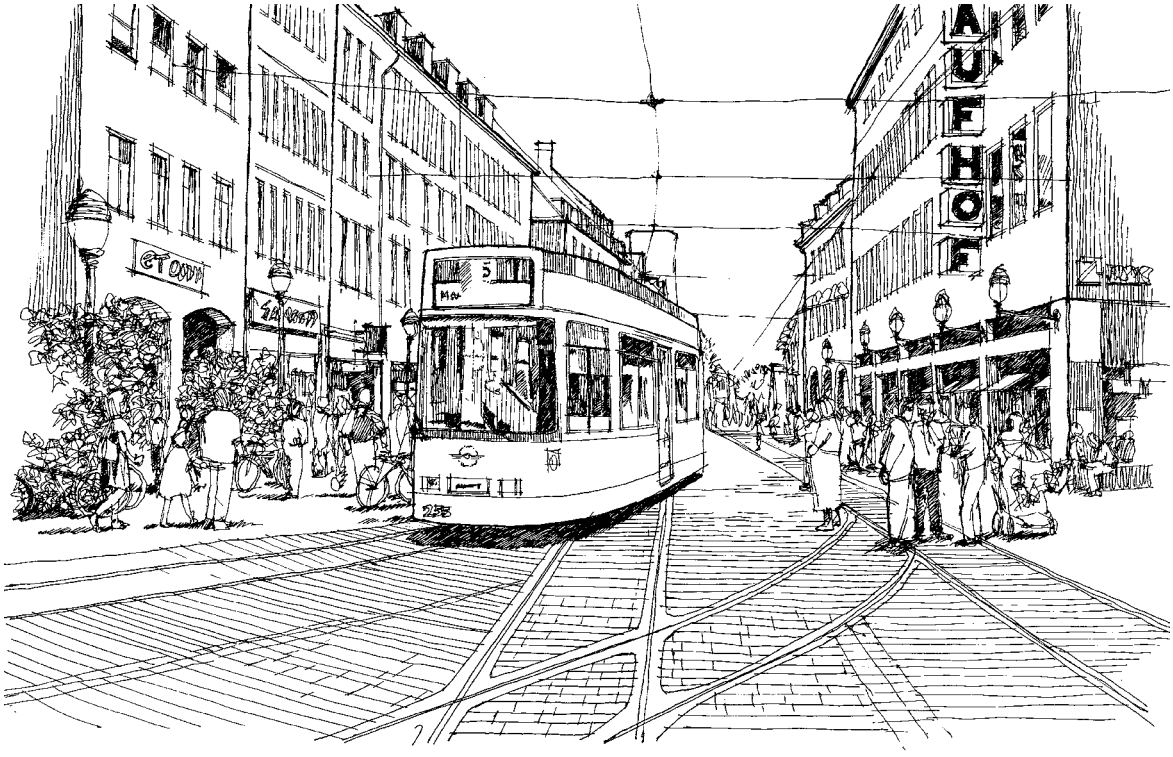
Cities such as Athens, Florence and most recently Paris have already taken much more radical action to exclude traffic due to severe environmental problems. Florence has banned cars from the city centre altogether while Athens bans cars with odd and even number plates on alternate days. The same was tried for one day in 1997 in Paris combined with free public transport following the incidence of very high pollution levels (even higher levels have since been measured in London without action being taken). Other cities in Denmark and the Netherlands have made great progress in promoting cycling and walking, to a far greater extent than even the most advanced British cities like Oxford and York. In Britain the erection of road blocks around the City of London as a result of terrorist bombing in the early 1990s is an interesting case study. Computer traffic models of the city illustrated that this was not possible without creating grid-lock. Yet it was done, and resulted in a large reduction in traffic without causing inconvenience whilst making the streets of the City much more pleasant.

Controlling the car – Edinburgh

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. This is a good example of the sort of policies which are likely to become more common in cities in the future. The aims of Edinburgh's policy are to reduce car dependency, congestion and pollution.

Traffic has been rerouted to deter motorists from driving into the centre along with simple measures such as increasing the delay at traffic lights. A road-pricing scheme encompassing the whole city could be in place by the year 2000. This will create a cordon around the outskirts of the city where motorists will have to pay £2. The dual aim is to reduce traffic and to raise revenue for public transport improvements. Because the city is relatively compact, has few entry points and little through traffic it is considered ideal for this scheme.

A car-sharing scheme is also being established with a taxi-style booking system to hire communally owned cars parked in reserved spaces. A club card will be used for fuel and a contract agreed for maintenance and insurance. This will give people easy access to a car without having to own one and it is also hoped that it will make people think more carefully about their car use. There are now 300 similar schemes in Europe, one of the largest being Berlin which has 3 000 members of car sharing clubs. See also the case study of car-free housing in Edinburgh in Chapter 10.



It is likely that in the coming century the practicality and social acceptability of driving into town will be greatly reduced. Cities must both respond to this and to the threat that people will abandon town altogether in favour of out-of-town facilities so increasing car use. The other plank of government policy through Planning Policy Guidance Notes 6 and 13 is therefore also important since it seeks to limit out-of-town development in favour of urban infill and town centres.

It is clear that the first of the 4Cs, conser-vation, will have a far-reaching effect on future housing and development patterns. This will result partly from public pressure but much more significant will be regulation and financial necessity as governments and markets come to terms with finite resources and the potentially catastrophic effects of climate change.

FREIBURG – GERMANY

Freiburg has won the accolade of 'Environmental capital' in Germany through its work to reduce car dependency by offering cheap alternatives.

Its strategy includes an employment location and density policy to maintain the traditional urban structure of the city. A street-car network has been developed with rights of way over cars linked to a 'Regio-Ecoticket', a cheap one-fare pass valid on 2 400 km of regional rail, street car and bus routes.

High parking charges and resident-only parking have been introduced along with a park-and-ride system. Speed limits throughout the city have been limited to 30 km/hr and roads have been narrowed to reduce car flow. The city has also created 400 km of cycle routes and parking for 700 cycles.

Over the last five years public transport use has increased by 30%. Between 1976 and 1989 car ownership in the city rose by 46% but car use did not increase.

Chapter 6
Choice
Changing household characteristics and the 21st century home

Choice was the mantra of the 1980s. It was the justification for a raft of legislative change, an important part of which related to housing. It would however be a mistake to assume that policies to increase housing choice did anything of the sort. The only real choice on offer was to move from renting, and in particular the council sector, into owner-occupation. The choices that we are interested in here relate not to tenure but to design and location. In many respects the last few decades have seen a diminution of choice in these areas. As housing provision has become dominated by private builders so housing design and location has been driven by profits from land development rather than by meeting the needs of people. This means that the housing stock is increasingly out of step with society's changing needs.

The driving factor in much housing provision is market forces which dictate the location of housing (do not build in the inner city), its form (avoid flats where possible), its design (detached best, semidetached good, terraced bad), its layout (cul-de-sacs with large gardens preferred), detailing ('Tudorbethan' trimmings a bonus) and technical specification (you should have central heating whether you need it or not). In other parts of the world such as Scandinavia, North America and Japan a sophisticated house building industry allows consumers to choose from a catalogue of factory-made high specification houses. By contrast in Britain houses are built in the same chaotic manner as they have for most of this century. This is possible because the market places a premium on the sort of traditional suburbia which has come to so dominate the UK in twentieth century. In the last two years 53% of new housing was either detached or semidetached and only 13% was flats[1].

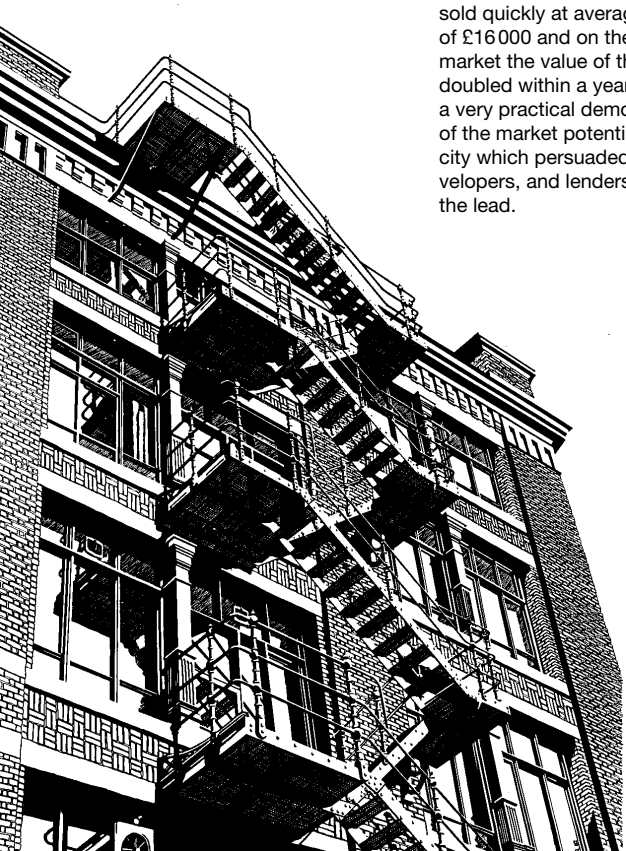
The preference for traditional suburbia is shared by many of those who buy new houses. A survey for the Housebuilder's Federation[2] of 818 households who had recently bought new houses found that 76% rejected the idea of living in urban areas, citing as their reasons hostile environments, traffic, noise, dirt and the poor quality of schools. They were concerned about the 'density' of urban areas, particularly space standards, small gardens and lack of parking, and summed up the attraction of their new home with phrases like: 'it's a nice cul-de-sac, not close to shops or pubs… you're just away from everything'. Indeed these attitudes were most pronounced amongst lower socioeconomic groups and those who had experience of living in urban areas.

The desire to escape into 'your own little world' which has driven suburban growth for much of this century would appear to be as strong as ever. This certainly is the view of the House-builder's Federation, who have suggested that the survey is representative of the aspirations of the majority of households. It confirms the view of many in the housebuilding industry that the predominant household in the UK is made up of

Town Centre Housing: Is the popularity of city centre housing catering to a niche market or indicative of a more fundamental change in the housing market?

Merchant's City: Glasgow
In Glasgow City Centre over 1 200 housing units were created during the 1980s. Of these 41% involved the con-version of existing buildings, many in Merchant's City. These were made possible by grants which averaged £5 100 per dwelling. The early pilot schemes required grants amounting to 39% of the development costs, plus the value of the buildings gifted by the Council. However subsequent schemes have required much lower grants and one scheme has now taken place without grant. One of the largest schemes, Ingram Square, involved the renewal of a complete block, including three warehouses, a department store, and new build to create 239 dwellings. This was developed by a partnership with the city and the Scottish Development Agency each taking a 25% share.

Whitworth Street: Manchester
Over the last ten years over 2 600 flats have been developed along the Whitworth Street corridor in Manchester. Twenty buildings have been converted representing investment of over £120 million. The area is characterised by huge Victorian commercial buildings, rising to 10 storeys. Two of the developments have been undertaken by housing associations for rent, the conversion of India House by Northern Counties Housing Association into 100 flats and a 6-storey new-build scheme by Tung Sing, an association catering for the large local Chinese community. The first residential conversion was Granby House in 1986. This 6-storey, 70 000 sq ft building was converted by Northern Counties to 70 flats for sale at a total cost of £1.7 million with subsidy of £785 000 although the caution of lenders meant that Northern Counties had to invest over £400 000 of their own resources. The flats sold quickly at average prices of £16 000 and on the resale market the value of the flats doubled within a year. This was a very practical demonstration of the market potential in the city which persuaded other developers, and lenders, to follow the lead.



two parents with children, is able-bodied, mobile and in regular employment. This may be the view of many of the middle-class housing professionals, estate agents, developers and architects who shape the housing that is built, but it no longer reflects the demographic make-up of the country. The Housebuilder's Federation survey was of families who had recently bought a brand new home on a suburban housing estate. Even if these people were typical of housebuyers (which they are not since nine out of ten housebuyers buy 'second-hand' houses) a it is hardly surprising that they should express a preference for the sort of housing that they had recently bought. However, more fundamentally, while this group may have been a majority in the interwar years they are increasingly becoming a minority of households.

Another survey by Brian Robson[3] of people who had recently moved into city centre apartments in Manchester tells a very different story. Of the 170 households surveyed 40% were single people and only five had children. The survey was equally unrepresentative since it was of a group who had recently decided to move into a city centre apartment, but it does illustrate that the Housebuilders' Federation survey does not give the whole picture. Nearly two-thirds of the households had all of their adults in full time employment, mostly in professional occupations, and two-thirds of the owner-occupiers were first-time buyers. When the first warehouse in Manchester was converted to housing in the early 1980s the flats were sold for £16 000, so uncertain were the valuers about the market for this type of housing. When the flats started to change hands for more than £30 000 within a few months it was clear that a market existed and a flood of residential warehouse conversions followed. As the survey confirms, the buyers were young professionals without children and 'empty nesters' whose children had left home and who worked in the city centre. At the time they were regarded as a niche market but this may no longer be the case.

Just as the nineteenth century home changed in response to the growth of the nuclear family so the twenty-first century is likely to reflect its decline.

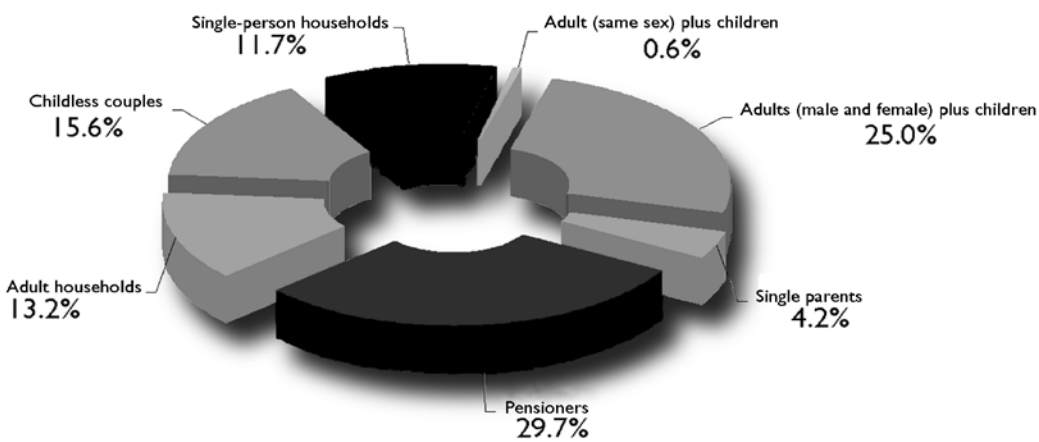
Changing household composition

It seems reasonable to assume that the design and location of housing should match the characteristics of the households for which it is built, although this sometimes seems a radical concept in the housing world. As household characteristics change housing should therefore also evolve. The trend which has dominated the last two centuries is declining household size and increasing household numbers. As a result the need for new housing has consistently outstripped population growth. In crude terms this can be seen from overcrowding figures which saw a fall from an average of 5–11 persons per dwelling in 1861 to 2.97 in 1966[4]. The same trend can be seen with average household size which fell from 4.6 persons in 1901 to 3.1 in 1961 and to just 2.4 in 1993. So, whilst the UK population rose by just over 20% between 1921 and 1961 from 38 to 46 million, household numbers leapt by more than 70% from 8.7 to 14.9 million, an increase of 1.75% per year. In the process the proportion of two-person households in the UK rose from 21.5% of households in 1911 to 55% in 1983.

Figures from the 1991 census[5] show this trend is still at work. The nuclear family made up of a mother and father with children now makes up just 19.8% of households, rising to 25.1% if families with more than two adults, such as an elderly relative are included. Indeed even when you include single-parent families the total number of households with children is only 30%. Compare this to the 40% of households who have no children and 30% who are pensioners and one may question why most of the housing that we build is designed for families. The reason is probably that most of society's decision makers – developers, investors and politicians – tend to be married with children and fall into the trap of assuming that everyone lives this way (or in the case of politicians, should live this way). They are however no longer representative of the people whose lives they influence.

Indeed the most important household type is below pensionable age and childless. Of the 40% of households which fall into this category 15.6% are childless couples, 13.2% are all-adult households and 11.7% are single people. Yet most of the housing industry regards this group as a niche market, assuming that most people will buy a house when they have a family and settle down. The reality is that more people are delaying having a family and enjoying a more affluent lifestyle in their twenties (particularly if they have not taken on a mortgage). Their housing requirements at this childless stage of life are very different from those of families. While some will undoubtedly be drawn to suburbia, a proportion – maybe a significant proportion – will value activity and vitality over peace and privacy and proximity to facilities over space and gardens. This is the market which the warehouse conversions in Manchester and other cities have tapped and the demographic figures suggest that it is a far larger market than planners and developers have thus far appreciated.

The other great area of household growth is pensioners who now make up 30% of all households and are increasingly recognised as an important consumer and political group. Just over 13% of the population were aged over 65 in 1971; this had risen to 15% by 1993. The

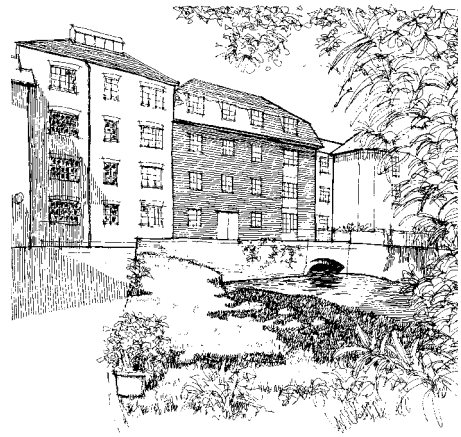


McCarthy and Stone

The growth of McCarthy and Stone is a good example of the development of new housing forms for emerging demographic groups. The company specialise in the development of blocks of flats near the centre of small towns for people aged over 60. Since 1977 they have built over 17 000 units on 70 sites.

A typical development is Deans Mill Court 800 yards from the centre of Canterbury. This consists of 43 one and two-bed units with fitted kitchens and bathrooms incorporating mobility features. All flats have telephone entry and 24 hour 'Careline' support from a resident manager. A service charge is made to cover all maintenance and gardening.

The brochure stresses the fact that the scheme is within easy walking distance of shops and facilities such as doctors, dentists and a post office. This means that most schemes are in urban locations which tend to be favoured by elderly households. Whilst privacy and independence are stressed, the schemes create a strong sense of community. A range of communal facilities are provided such as a residents' lounge, a guest suite for visitors and a laundry room. These are however not sheltered housing schemes and the flats in Canterbury sell for prices starting from £60 000.



number of people aged over 85 has increased from 0.5 million in 1981 to 0.9 million in 1991. Whilst it is true that there has been a significant growth in the development of sheltered accommodation it would be a mistake to suggest that most pensioners either need or want to live apart from the rest of society. Most are healthy, active and independent and can expect to live for as many years in this state as they did as a family. This again has implications for the type of housing that we build. Whilst many pensioners may aspire to live in a modern bungalow a short walk from the shops, most end up living in their old two-storey family home only accessible by car. Over the years this is likely to become less well-suited to their needs, with the large garden, so good for children, becoming a chore to look after and the peace and quiet, once so welcome, becoming the backdrop to fear and loneliness. It is interesting to look at the trends in the US where retirement villages are one of the fastest growing forms of development. As Andres Duany has pointed out[6], so car-dependent has American society become, that it would be possible to starve in a suburban housing estate without a car. This means that it is impossible for people to continue living there when they are no longer able to drive, so that old people are forced to sell their homes and to spend their life savings to move to a retirement community. Similar trends exist in the UK although not to the same extent. Developers like McCarthy and Stone, who have a very profitable business specialising in housing for the elderly, are increasingly building urban apartment blocks in smaller towns rather than separate retirement communities. Their brochures emphasise not seclusion and privacy but community and access to facilities.

There are other demographic factors which should influence housing. One is disability, since one in four households will have one of their members disabled in their lifetime[7]. Disability is not a need that can be met with a couple of specially adapted units in the corner of an estate, it relates to all new housing. Since one cannot predict which households will be affected, all housing should be designed with the needs of the disabled in mind. This means that if a household member becomes disabled the home should be sufficiently flexible to prevent the family having to move or to undertake expensive conversions. The Joseph Rowntree Foundation's Lifetime Homes standards[8] provides practical guidance including level entry to houses and sufficient internal circulation space for wheelchair access. The units do not look any different from normal homes and are lived in by households who are not disabled. It is possible that these standards will be incorporated into the Building Regulations in the future.

It is also important to consider ethnic minority households which form a significant proportion of urban populations. Eighty percent of Afro-Caribbean and Bangladeshi and 68% of Indian households are urban dwellers and their household characteristics can differ markedly from the national average. For example 42% of Afro-Caribbean and 67% of Asian households have children compared to a national average of 30%. The Afro-Caribbean population also has a greater proportion of single people and single parents but significantly less pensioners. The Housing Corporation sought to promote ethnic minority housing associations in the early 1990s, both as a means of empowerment and to ensure that housing better reflected the needs of ethnic groups. A good example is Manningham Housing Association in Bradford which has specialised in producing very large units for extended Asian families.

The mechanisms of demographic change

The reasons behind household change are varied and complex and have become mixed up with political dogma about traditional family values. The evolution of the large nineteenth century household to the small twentieth century family was driven by two parallel trends. For the middle classes the reduction in household size was not so much a matter of falling birth rates but a reduction in servants and other household members. In the mid-1800s even the lowliest middle-class household – say a bank clerk with an income of £200 per year – would employ a servant, whilst a family with £1 000 per year would have three female servants, a coachman and a footman. Given an average household size of three children plus mother and father this would mean an establishment of ten people[9]. A survey of households in York in 1851 showed that middle-class households were on average one person larger

The Wigan Foyer

Changing demographic trends are causing new forms of urban housing to emerge in the UK. A good example of this are foyers which are being developed in many British towns and cities.

The concept of foyers has been imported from France where they have existed for many years. French foyers can best be described as a combination of a youth hostel and a student hall of residence and are targeted at young people. They include a café and are a focus for local social services. In the UK the concept has been developed to include a much greater emphasis on training and employment.

One of the best UK foyers is to be found in Wigan, a town which still has a substantial stock of council housing almost all of which are family units. The council has therefore been concerned to target new housing at groups not served by the existing stock, particularly the elderly and the young. The foyer was developed to meet the needs of young people. It provides short-stay accommodation for 42 young people aged between 16 and 25 along with a communal lounge and a range of resources and facilities to assist them in finding work. The foyer opened in September 1996 as part of a major mixed-use refurbishment of the Coops Building on the edge of the town centre by Grosvenor Housing Associa-tion. The building has been developed as a package but is split into three sections: The foyer occupies the left wing, the central section has been converted to 15 000 sq.ft. of managed workspace and the right wing to 11 flats for social letting and 18 for market rent both for single people.

The scheme cost £4.2 million and was financed through a complex cocktail of funding. The foyer also requires ongoing revenue support from a variety of sources. The complexity of the funding package is indicative of the difficulty of developing schemes of this kind. There is very little crossover between public funding for workspace and housing so that schemes which blur the boundaries between the two are very difficult to fund. This suggests that funding mechanisms need to change in recognition of the need for new kinds of housing development.

than working-class households and the average middle-class household contained 1.15 servants, 0.42 lodgers, 0.41 relatives and 0.21 resident visitors. The reduction in the size of middle-class households stems from the gradual loss of these servants and dependants. This was particularly true after the First World War when the returning troops turned their back on domestic service. This is how the ten-person establishment of the 1850s evolved from its rambling gothic villa to the interwar four bedroom detached house with its domestic labour saving appliances.

At the same time the working-class household was also shrinking. In the 1870s 61% of households had more than five live births and 18% had more than ten. However infant mortality was high; in Nottingham, for example, less than 20% of families had more than four surviving children. Initially medical advances would have increased household size by improving infant mortality. However as time went on families had less need to insure against infant deaths with large families so the number of children fell. These trends were reinforced by an increasing understanding of contraception. As housing conditions gradually improved throughout the last century overcrowding was also reduced. Houses which once accommodated a number of families became home to just one. As access to housing became easier extended families found it less necessary to live under the same roof. Unlike middle-class housing, the trend with the working classes was for house size to grow whilst household size decreased.

Household characteristics therefore changed dramatically at the end of the last century as did the housing built to meet their needs. For different reasons both middle-class and working-class households shrunk, heralding the emergence of the nuclear family. As the middle-class home got smaller and the working-class home improved, both evolved into the semidetached home which has come to so dominate the twentieth century.

The change from the twentieth to the twenty-first century household is likely to be just as dramatic. As we have seen, the nuclear family which dominated provision in the 1920s has become a minority household type in all but the minds of traditional politicians and the housing industry. This does not however herald the disintegration of family life and all that the traditionalists hold dear. Instead it means that people are spending less of their life in childrearing. The Victorian family may have had their first child in their twenties and continued childbearing into their late thirties. This would put them into their dotage before all of their children left home, with perhaps a few years of retirement before their allotted three score years and ten. The modern family by contrast is having a modest brood of children in their thirties and can confidently expect their offspring to have flown the nest, or at least to be living independent lives, by their early fifties. With modern life expectancies they can expect more than thirty years of life ahead of them and for the first part of this they will be at the height of their earning potential, if, that is, they have kept their job.

Two significant demographic groups have therefore emerged which are yet to be reflected in the housing stock. In the past people would have stayed at home until marriage and then fairly quickly started their own family. Today they are living single, or certainly childless lives in their twenties before settling down and having children in their thirties. These 'swinging singles' or 'urban venturers' in the parlance of the marketing industry are an important and growing market with high levels of disposable income which the housing industry has only just started to recognise. The other group are the parents of these 'swinging singles', what the marketing industry call, 'empty nesters'. This latter group is also being swelled by the growing divorce rate (every divorce creates two households where once there was one) and increasing life expectancy. Add to this the growing number of single parents and the trend of declining household size and rapidly increasing household numbers becomes even stronger.

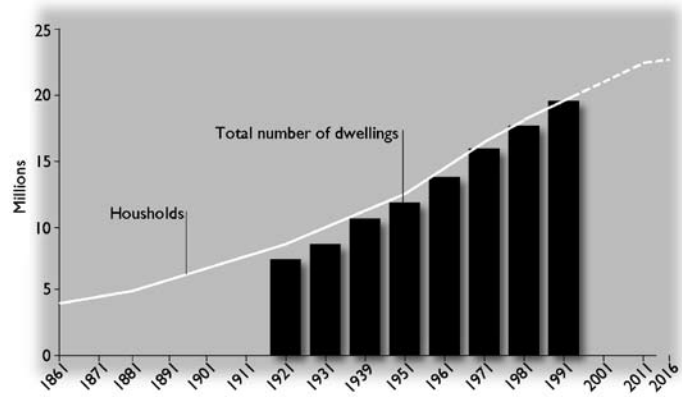
Future trends

Government projections[10] based on these trends predict a 4.4 million increase in households between 1991 and 2016, an increase of 23% from

19.2 million to 23.6 million. Some have resorted to questioning the figures but in the historical context they are no more dramatic than past household growth. Indeed rumour is that the next set of forecasts due in autumn 1998 will substantially increase the projections, perhaps, as high as 6 million.

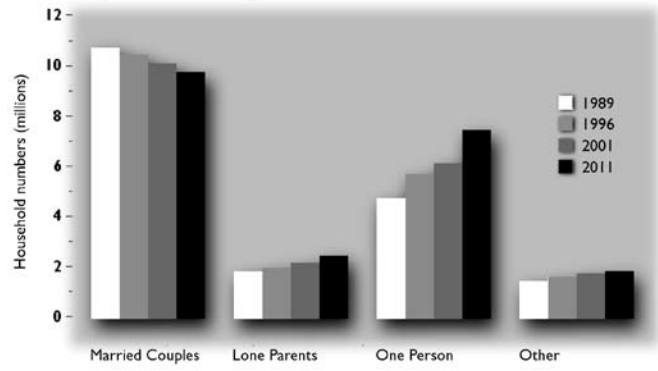
The figures have scared the life out of planning authorities up and (mainly) down the country who fear the march of suburbia across precious green belts. But family housing is not what is wanted. Unfortunately the household projections do not break down household growth by the size or age of the household. Instead they project figures for married couples, cohabiting couples, lone parents, multi-person and single person households. The married couples' category includes people with and without children as well as the elderly. This is why 55% of households are married but less than 20% are couples with children. Despite the scale of household growth these married couples are actually predicted to decline by 2016 from 10.5 million to 9.9 million households. Small increases are projected in other categories; however the increase which overshadows all of the others is single-person households. These are predicted to rise from 3.5 million to 5.1 million. Single-person households therefore make up more than 80% of the 4.4 million net increase in household numbers.

The numbers of elderly people are also projected to rise from 10.5 million in 1992 to 16 million by 2032 when they will make up just over 23% of the population[11] with the number of people over 85 rising to 1.3 million. As people live longer, and three-generation households decline, the number of single elderly, particularly elderly women, will increase rapidly. The reducing level of state care for the elderly and the dispersal of children in search of work will mean that these people stay in their homes for longer, reducing the stock of housing released back onto the market and placing new demands on the home. Fears for personal security mean that the traditional practice of taking a lodger has largely disappeared, although economic necessity coupled with better housing management may lead to a revival.



Household growth is nothing new: Historic and projected growth in household numbers compared to the total stock of dwell-ings. This shows that projected household growth rates are no different from past rates and that housebuilding has actually outstripped household growth *Source: DETR*

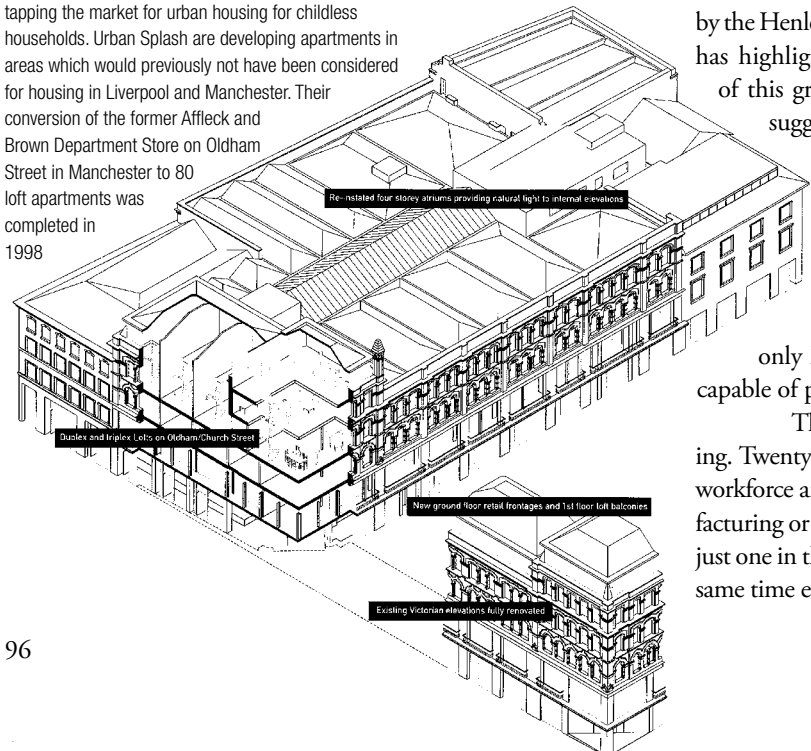
The average household of the twenty-first century will therefore be significantly smaller than its twentieth century grandparents. But will the twenty-first century home be smaller? After all working-class housing last century grew whilst household sizes fell. Alan Holman[12] argues that there is no evidence to suggest that smaller households will opt for flats rather than houses. He points out that elderly widows and widowers tend to remain in their family home. He also suggests that since most single and divorced people are under 60 and 77% of these live in houses (three-fifths of which have more than three bedrooms) then that is the natural state of things. He rightly suggests that single people are no less affluent than married couples and will therefore exercise their free choice to live in what they can afford, namely a house. But this argument is open to question. While Holman points out that basing house building on housing projection is a self-fulfilling prophecy he fails to recognise that people may not be opting for flats because there are few



The nature of household growth: Projected household growth by household type. *Source: DETR*

suitable flats available. Implicit in his argument is the idea that flat dwellers are second-class citizens and it is therefore logical that people will opt for a house if they can afford it. This would not however be the case on the continent where flats (or apartments; a word which has altogether different connotations) are perfectly respectable and sought after. The Swiss, for example, expect to live in an apartment, looked after by a landlord whilst they get on with the important matters of life like running a business.

This brings us back to the issue of choice. Many single people and childless couples would probably welcome the benefits of living at higher densities in urban areas near to a range of facilities within an easy walk. Indeed where such housing has been provided, as in Britain's historic towns, it has proved very successful. But at present they are hardly given the choice. We are not suggesting that all childless households would make this choice but it is reasonable to assume that a proportion would, maybe a significant proportion. In doing this they would not be sacrificing their living standards to live in a flat as Holman suggests but living in lively urban areas more suited to their needs.



Second class citizens? A number of developers are tapping the market for urban housing for childless households. Urban Splash are developing apartments in areas which would previously not have been considered for housing in Liverpool and Manchester. Their conversion of the former Affleck and Brown Department Store on Oldham Street in Manchester to 80 loft apartments was completed in 1998

Changing social and economic trends

As important as demographic change is the influence that social and employment trends will have on future housing. These include the increasing number of women in the workforce, job insecurity, increased leisure time and changes in employment patterns. Just as suburbia developed in response to the nuclear family so it also responded to a particular way of life and set of economic circumstances. As we have seen in previous chapters, suburbia developed with the expansion of the middle classes and the desire to separate the home and work environments. It was based on stable employment to pay the mortgage and an assumption that the family would be a self-sufficient unit with the wife managing the home and the husband bringing in the money.

These assumptions are increasingly open to question. Women are making up an increasing proportion of the workforce, partly because they are having children later in life. Economic activity rates for women aged 25–34 rose by 25% between 1971 and 1993 while activity rates for men declined for all ages but particularly over 55[13]. As a result the proportion of women as a percentage of the workforce rose from 37% in 1971 to 44% in 1993. Indeed because female unemployment rates are lower, women already account for half of all employees. A recent report by the Henley Centre for Economic Forecasting[14] has highlighted some of the potential effects of this growth in female employment. They suggest that women will be less willing to tolerate a long commute to work or other facilities, particularly if they have to juggle working life with the needs of children. They may therefore be attracted to urban areas but are likely to be very choosy and are only likely to be attracted to urban areas capable of providing a high quality of life.

The nature of employment is also changing. Twenty-five years ago half of all men in the workforce and 30% of women worked in manufacturing or construction. Today this has fallen to just one in three men and 13% of women. At the same time employment in financial and business

services has doubled from 13% to 26% of the workforce. This has not however been reflected in better working conditions. For years we have been told to expect greater amounts of leisure time whereas in practice UK males now work an average of 43.3 hours a week, longer than any of their counterparts in Europe. At the same time unemployment remains persistently high. Those with the money to enjoy leisure time are therefore getting less of it while those with time on their hands do not have the resources to enjoy it. This reflects Will Hutton's analysis of the 40:30:30 society[15]. The 40% of the population who are in secure employment are working longer hours and being well rewarded for it while 30% are struggling, poorly paid and insecure and 30% are excluded due to unemployment or incapacity.

It is clear that this situation is very different to the economic circumstances that created the suburb. The availability of cheap mortgages fuelled suburban growth whereas insecurity is now undermining the ability of people to make long-term mortgage commitments. Travel to work is also changing. It is argued that the dispersal of employment will reinforce suburban growth[16] but the situation today is very different from fifty years ago when the man as bread winner could commute to a stable job. If two or more household members are working they will either have to live near to public transport or each run a car. If we already work the longest hours in Europe we may increasingly question spending the most valuable hours of the day travelling to and from work by car. It is therefore possible that changing employment patterns will reinforce the benefits of urban living and the attractions of alternative tenures such as private renting.

While it is possible that changing social and employment trends will reduce the attractions of the suburb, it is far less clear what sort

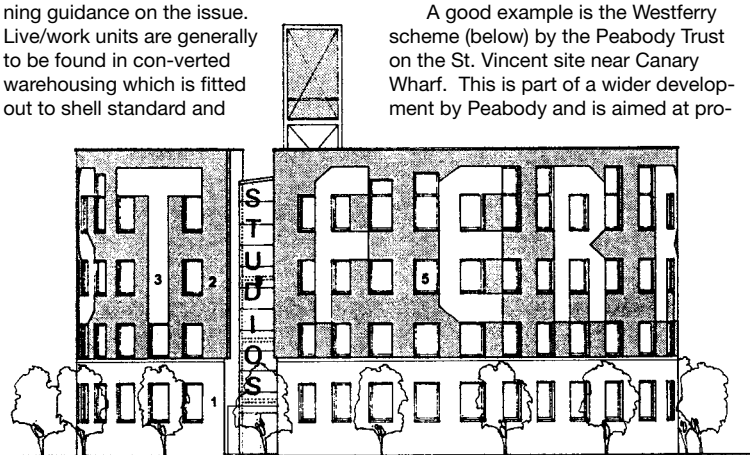
Live/work housing

While people still argue over the viability and desirability of mixed-use development a few intrepid developers are taking the concept one step further by mixing uses within units. Live/work units, sometimes called atelier units, are places designed both for living and working behind the same front door.

This is similar to the traditional corner shop although new live/work units owe more to the original New York loft which was a place where people, often artists, both lived and worked. While most UK loft developments have not been designed for working, there is a growth, in London in particular, of live/work loft conversions. Indeed so common have these become in Hackney that the council has adopted supplementary planning guidance on the issue. Live/work units are generally to be found in con-verted warehousing which is fitted out to shell standard and are available both to rent or buy. The impetus behind their development is not so much a demand to work from home but local planning policy which prevents residential development in designated employment areas. The cheap buildings in these areas are attractive to housing developers yet they can only get planning permission for live/work units. This means everyone is happy, the developers get a residential development and the council is happy that it has attracted employment into the area.

There are however a handful of live/work schemes outside the private sector where the roots of new development form may just be starting to emerge. Here the aim is to combine housing with economic regeneration. Schemes are being planned in Liverpool, Birmingham, Bolton and London.

A good example is the Westferry scheme (below) 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 will include nine business units on the ground floor below twenty seven live/work units on the three upper floors. The live/work units have a floor area of 800 square feet. They have heating, a shower and a basic kitchen but will otherwise be fitted out by incoming tenants and will be let on standard business leases. It is anticipated that 60% of the floor area will be used for business with 40% used for living.



A common thread to these schemes is that they are targeted at artists. Indeed artists and other individuals working in creative industries are probably the main market for this type of development. 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 res-trictions of the spare bedroom or the kitchen table. They are a good example of innovation in urban deve-lopment as demographic and econo-mic change creates demand for new types of unit. A comparison with the range of cars now available may sug-gest that there are other niches to fill.

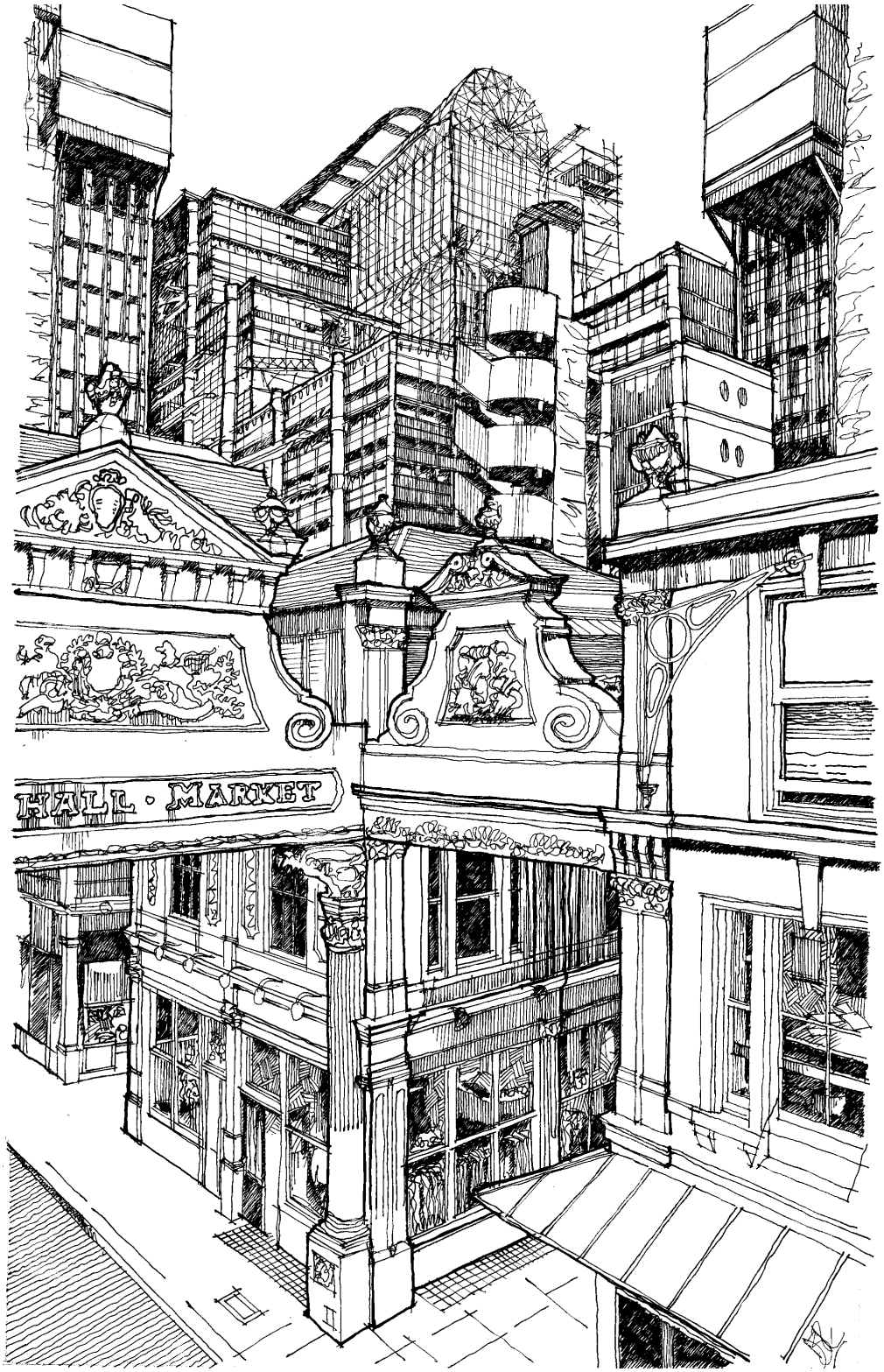
of housing they will lead to. Great play is often made of electronic communication and the scope for teleworking from home. The Labour Force Survey shows that there are 3.3 million self-employed people in the UK[17]. Most of these do not however work from home. There are currently only 650 000 people in the UK who work from home – about 2.5% of the workforce – although this rises to 5% in associate professional and technical occupations. Eleven percent of employers employ homeworkers, half of whom use new technology[18]. The impact of these trends on housing and cities may however have been overestimated. For desk-based homeworkers the main need is for a telephone line and a space to work away from household distractions. For most people a spare bedroom meets these needs and it is unlikely that it will lead to the emergence of new housing forms. There are however activities which are too noisy or dirty for the spare bedroom or kitchen table. Homeworking also becomes more difficult if a self-employed business grows and needs to employ other people. There is some evidence that the growth of self-employment in areas like the arts is leading to new forms of housing such as live/work units.

Another important trend is the decline of large employers and the growth of small businesses and self-employment. Organisations like the BBC which once carried large workforces now contract out much of their work often to former employees. These self-employed workers and small businesses rely on networks of contacts to get business and to stay in touch with developments. They therefore tend to gravitate to cities where there is a market for their work and a critical mass of similar businesses.

Another potential influence of information technology and flexible working is on the very shape or even existence of cities. When the impact of the Internet became clear there were some who argued that there would no longer be a need for cities. With homeworking, computer shopping and banking, and the availability of information over the World Wide Web people would be freed to live where they wished and their remaining ties with the city could be broken.

While isolated televillages have been developed in the US, the predominant trend has been for telecommunications to actually reinforce the city. Graham and Marvin[19] have pointed out that the top fifteen metropolitan core regions in the US account for just 4.3% of the national population but 20% of Internet use. They argue that more, not less, face-to-face contact is required to interpret and harness the huge amount of information on global networks and to respond to increasingly volatile international markets. More than anything else, the commodity that cities deal in is information. Therefore cities are not only being strengthened by the Internet, they are actually driving its growth. It is also in cities that the infrastructure is being put in place, such as fibre optic and broad band home media networks, which will reinforce the urban dominance of information technology. It is therefore unlikely that tele-working will lead to an urban exodus. Working alone at home increases the need for human contact, even if this is just a walk down to the shops. Indeed teleworking may allow people to benefit from city life while avoiding the frustration of commuting through congested streets.

In this chapter we have reviewed the demographic and social trends which will shape future housing and settlements. These are no less potent than the trends which transformed the city a hundred years ago. It is too early to judge the impact they will have on housing and cities. It is however clear that the choices that people make in the future will not necessarily lead to continued suburbanisation which many commentators assume to be the natural state of things. The question is whether other choices will be available.



The information city: London is booming as global markets and informa-tion technol-ogy increase the need for the face-to-face contact that only large cities can offer

Chapter 7
Community Social sustainability in the suburb and city

In the last chapter we looked at how people live together as households. In this chapter we cast the net wider to look at how households live together as communities. The word 'community' like 'choice' is a word which has been devalued by overuse. Because community is generally seen as a good thing the word has become a euphemism to disguise unpopular policies, from care in the community to the community charge. In other contexts the word has become little more than a collective noun for human beings as in the black community or the gay community.

Yet when we talk about community in a geographical sense we still have a fairly clear idea of what we mean. Be it the rough-edged urban communities of Coronation Street or Eastenders or the rural fraternity of the Archers in Ambridge, community implies a sense of belonging and pride, a common bond and shared identity, the willingness to help neighbours and support them in times of need, and perhaps also a suspicion of outsiders. Indeed the community is probably the most basic form of human organisation dating back to the earliest hunting groups.

Community is motherhood and apple pie. No one would suggest that it is a bad thing. This is not, of course, to say that everyone wants to live in a community. To paraphrase Oscar Wilde; 'a community may be a fine institution but who wants to live in an institution?' Indeed, as we have seen, urban trends over the last hundred or so years have been driven not by the desire of people to live in communities but by a desire for separation. People, while paying lip service to the idea of community, have sought, through the location and design of their home, to reduce contact with others. The basic building block of society has become not the local community but the nuclear family. It therefore seems that there is an increasing divide between our idealised notions of community and how we actually choose to live our lives. It is this tension which has shaped our housing and the way that our towns and cities are organised.

However when we look to the future it may well be that our reliance on the family rather than the community will become less tenable. As we have seen in the last chapter the family is much less common than it once was and will become even less so in the future. As family members disperse in search of education, employment or a partner they may find more need of community as an antidote to loneliness. The single person and elderly households of the twenty-first century may well place more value on community life than did the self-contained nuclear family of the twentieth century. The self-employed home worker, the unemployed and retired – deprived of their workplace community – may look to their home environment for support and social contact. In short we believe the concept of community will be a potent influence on the twenty-first century home. It is therefore important that we understand the nature of communities.

The value of community

The existence of a strong community is often the difference between successful and declining urban areas. It is however less clear whether the existence of a community creates a successful area or whether a community is only able to develop once the area has become successful. Certainly most of the urban areas with severe problems lack any sense of community. Yet estates with a fierce community spirit and pride are not immune to problems whilst other areas without any obvious sense of community do perfectly well.

By all accounts the back-to-backs and courts of the Victorian city fostered strong communities but they are hardly a model for the future. Indeed there is an element in the character of communities which thrives on adversity. This might be a feeling of being 'in this together' or uniting against a common enemy. It is certainly common for tenants' associations to thrive when an area is being ignored only to wither when their demands are accepted and improvements to the area start taking place.

It does however seem that the existence of a sense of community can help an area to avoid problems and can lessen their impact when they do occur. The reason for this is that a community gives people a reason to care for their area through a sense of pride and belonging. This is one of the reasons why the middle classes have less need of community. In owner-occupied areas people have a keen sense of the value of their property and a strong financial incentive to discourage antisocial behaviour which might affect this value. With social rented housing this has never existed and needs to be replaced with other reasons to care. In the past this may have been a sense of affinity or respect for the council landlord and today it can be provided through structures like co-operatives or estate management boards. However the most effective means of engendering pride is the existence of a community.

This works in a number of ways. Communities share a common sense of identity and pride. They also involve peer pressure to control antisocial behaviour and an understanding that community members will support each other. In a strong community people will be more inclined to keep their property in a reasonable state, to pick up litter or at least not to drop it in the first place. They are more likely to make the area their long-term home so creating a stable population. They will support their neighbours in small ways such as holding a spare set of keys or feeding the cat. These may be small things but they are the mortar which binds together urban areas and can make the difference between success and failure.

These elements of community are fundamental to many aspects of urban life not least to the control of crime and social order. In the past a community member challenging antisocial behaviour could do so in the knowledge that they would be backed up by other members of the community. In today's more violent urban environment this may be a little over-idealistic, but perpetrators of antisocial behaviour are likely to feel more vulnerable to challenge in a strong community which is a deterrent in itself. Indeed this is the basis for much of the thinking about 'secure by design' approaches to address crime. Whilst a great deal of attention has been given to surveillance cameras and security guards, the majority of secure by design work depends on surveillance by residents. There is much talk of windows being eyes onto the streets. This however is of no value if the people behind those windows feel no connection with their neighbours and have no incentive to intervene.

To social landlords communities can also bring very real financial benefits. They make areas easier to manage and mean that problems which would once have been reported to the landlord are dealt with locally. It is significant that David Page's 1993 report for the Joseph Rowntree Foundation was called Building for Communities[1]. In this he paints a disturbing picture of the problems arising on new housing association estates where communities have not taken root. The reason, Page argues, is that we are building houses, not communities, and are failing to recognise the problems that arise when communities do not develop. Following on from

this report the Housing Corporation has adopted the development of 'sustainable communities' as one of its key objectives. Indeed in 1998 URBED completed a major piece of research for the Housing Corporation[2] in which we explored the components of sustainability in new social housing and the impact of Housing Plus.

Communities are good for you

Recognising the value of community is one thing, understanding how communities work is quite another. Yet without this understanding attempts to create communities can go hopelessly wrong. This is where the paternalism of public authorities has devalued the concept of community and where academic and professional debate has been dominated by some very muddled thinking.

Why is it that no one ever agonises about the need to build middle-class communities? Is it that middle-class communities are so strong that they do not need professional help or that middle-class areas do not need strong communities to ensure their success? The debate about community over the last fifty or so years has been almost entirely focused on social housing. The reason is that communities have come to be seen as 'good for you' rather than just good. There is just a short step from this to the philosophy that 'our idea of community is good for you'.

Many of the professionals and academics who debate the value of community live in suburban areas. In the suburbs what people tend to mean by community is the rich network of voluntary groups such as churches and amateur dramatic societies which thrive in such areas. People may only be on nodding terms with their neighbours but they play an active part in networks of people who share similar interests and values often over quite a wide geographical area. At the same time behaviour is controlled by a milieu of social pressures which ensures that lawns are trimmed and disturbance is minimised.

SUBURBAN OR URBAN COMMUNITIES?

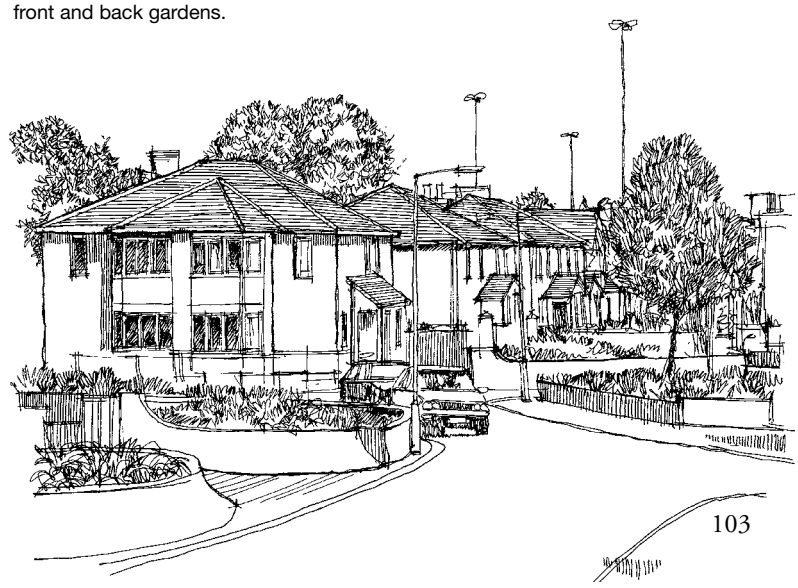
The debate about what sort of communities we should be creating in urban areas permeates discussions between professionals and local residents as illustrated by the examples of Hallwood Park in Runcorn and, on the following page, the Divis Flats in Belfast and St. Wilfred's in Hulme.

HALLWOOD PARK: RUNCORN

The Southgate Estate in Runcorn will be familiar to anyone who studied housing and planning in the 1970s and 80s. Designed by James Stirling, it attracted tremendous attention with its external servicing, multicoloured cladding and round windows. The scheme, which included 1100 deck-access flats and 255 three-storey town houses, was a development of the system-built schemes of earlier decades. Yet even as students were being shown around, it was clear that it was not working and residents were campaigning for demolition.

The task of redevelopment fell to Merseyside Improved Homes who have developed a scheme of 226 three-and four-bedroom homes plus 16 one-bedroom units and renamed the area Hallwood Park. This is the first part of a two-phase development which has been planned to maintain the community by allowing people to stay on the estate. The new development was subject to extensive consultation. Having lived in an architect's vision the community wanted something much more traditional and low density. The resulting scheme is characterised by traditional semidetached homes (14 different styles) on cul-de-sacs with front and back gardens.

It is too early to say whether the new Hallwood Park will fare better than the old Southgate. The developer is proud that they were able to give the community exactly what they wanted, which was to feel like owner-occupiers which Hallwood Park achieves very effectively.



This is not however the sort of community which has exercised academics and professionals concerned with the inner city and social housing development. Their idea of community has not been the social networks and interest groups that characterise suburban areas. Rather it seems to be some vague notion of conversations over the garden fence, corner shops and being able to leave your front door open while children play on the street. This lies at the heart of the confusion over what we mean by community. We have been seeking to promote a vague and idealised notion of urban community yet we have judged such communities by suburban standards so that we have failed to recognise and value them even where they do exist.

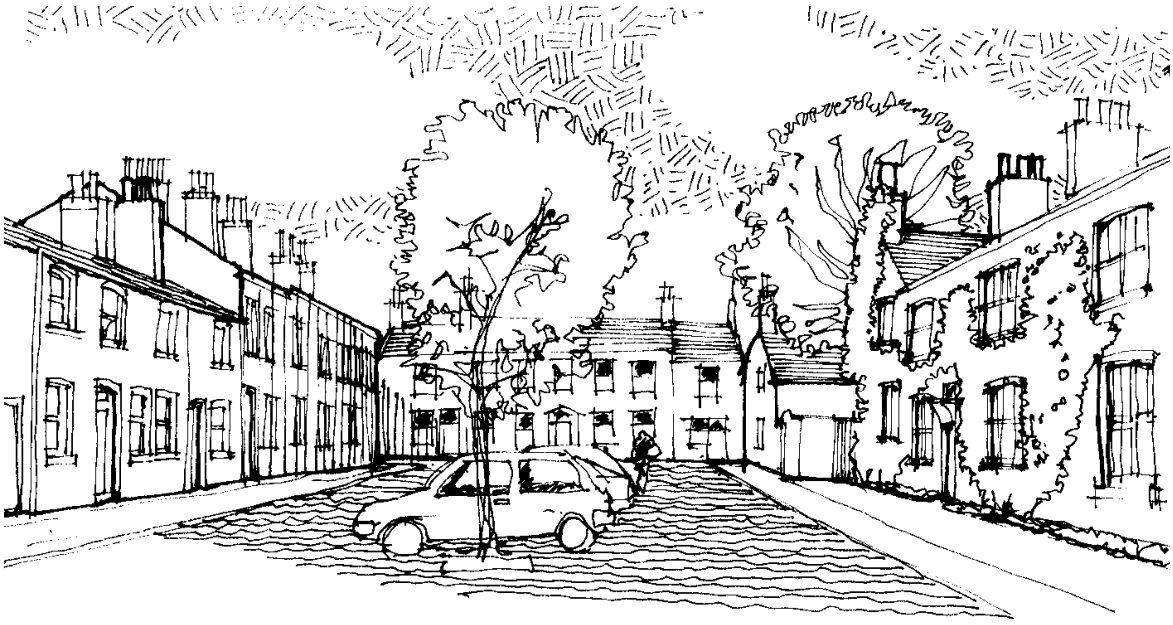
This is perhaps best illustrated by a personal example from Manchester. I (DR) remember walking around the terraced streets of the Great Western Street area of Moss Side with a group of fellow council officers in the mid-1980s on a warm day which could have come from the memoirs of those elderly residents who moan that things were so much better in the old days. Front doors were left open, children were playing in the street, people were chatting on doorsteps, a couple of men were fixing a car propped up on bricks and one particularly blasé dog was snoozing in the middle of the street. The perfect picture of an urban community, one might think. However this was not what my fellow council officers were seeing. What they noticed was the loud music emanating from some of the open doors and the group of youths on the corner who could have been muggers or drug dealers. The children playing amongst the parked cars were in dreadful danger (not to mention the dog!) and should be

DIVIS FLATS: BELFAST

The 800 unit Divis Flats estate is one of the most notorious in Belfast and has been redeveloped by the Northern Ireland Housing Executive. As part of this extensive consultation and participation work took place with tenants organised by the Town and County Planning Association. While residents wanted individual homes they opted for a layout of traditional streets and for relatively high densities. This however was not accepted by the authorities and subsequent revisions to the masterplan saw densities reduced from 562 to 366 and eventually to 244 units developed in a suburban layout based on cul-de-sacs.

ST. WILFRED'S: HULME

As part of the development of Hulme in Manchester, North British Housing Association have undertaken the redevelopment of a system-built estate for 215 houses working in close partnership with a traditional local community. The initial scheme involved the creation of three cul-de-sacs with a mixture of semidetached and terraced housing at medium densities. The tenants welcomed the scheme but it was not accepted by the Council who were seeking to promote Hulme as an urban neighbourhood (see Chapter 13). A series of intensive workshops were therefore undertaken by the Hulme Community Architecture Project to look again at the designs for the scheme. This started by going back to memories of the area that had existed prior to the original redevelopment of the 1960s. Many of the older residents remembered the old terraces and started to develop ideas based on urban rather than subur-ban ideas of community. As a result they threw out the initial scheme and redesigned the scheme to recreate the traditional streets that many of them remembered.



The ideal urban community? The Moravian Settlement in Ashton. Is this perhaps what we have in mind as the ideal urban community without any rough edges?

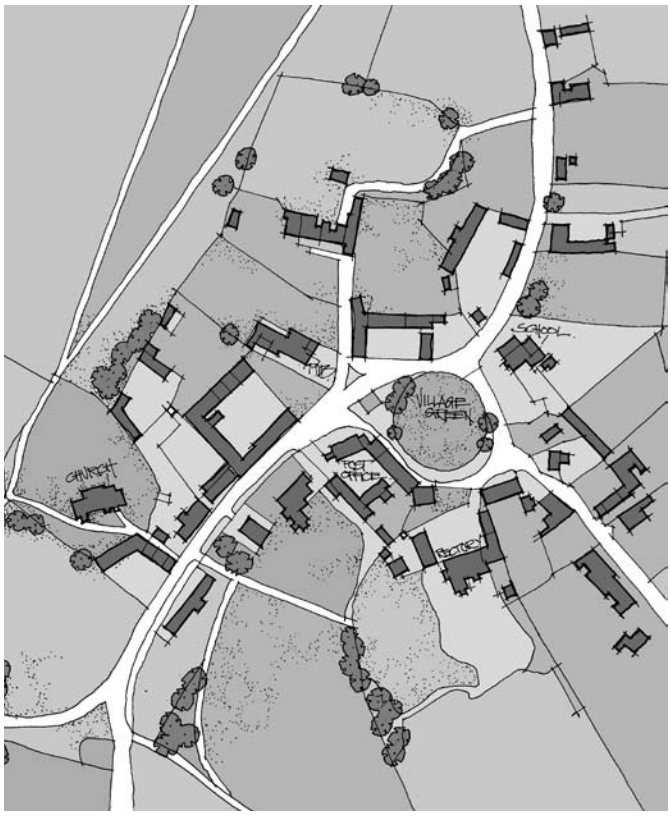
tidied away into a play area. The car mechanics were an unauthorised use on the public highway. They noticed the overturned bin, the broken glass, the graffiti and could no doubt have found a syringe or two if they had looked hard enough in the back alleys. In short, what they saw was not a tightknit urban community but a stressed inner city district in need of their help.

This is the way that many professionals view urban communities – through suburban eyes. Most of my fellow council officers commuted in from the leafy suburbs of south Manchester and had a very different idea of community from the people of Moss Side. This is not to say that either idea of community is right or wrong or to suggest that Moss Side's community is perfect. It does however illustrate some of the confusion that muddles the debate about community. The community in many of the older parts of Moss Side has many of the characteristics that professionals and academics have been promoting for years yet when confronted with such a community, warts and all, in a deprived inner city area they either do not recognise it or do not like what they see. Instead they start judging urban areas by suburban standards. This is when attempts to build or engineer communities can go badly wrong.

Different types of community

There are different types of community in suburban and urban areas, something which is rarely discussed except by sociologists[3]. To listen to planners and politicians one could be forgiven for thinking that community is a homogeneous concept and local differences are aberrations. This probably means that different groups have spent years talking the language of community and meaning entirely different things. It is therefore important to explore in more detail different ideas of community. The attachment of people to these very different ideas is one of the forces which shapes human settlements.

The first community ideal, which many people think of when visualising a community, is the close-knit village of Miss Marple or James Herriot. A place where everyone knows each other and everyone knows their place. It is a community with a natural focus, the church, pub and local shop which brings people together and allows news (perhaps gossip is a better word) to be shared. The community has clearly defined boundaries, both in terms of the people who lay claim to membership and the geographical area covered. As such the community is suspicious of strangers and reluctant to embrace newcomers, as many an émigré from the city has found to



The English village: Home to an idealised vision of the village community

their cost. The village community is mixed and includes everyone from the squire to the labourer. This is not, of course, on an equal basis, but as part of a strict hierarchy. The village community is guided by unwritten rules which are as rarely stated as they are transgressed. It is an ordered, civil society where people feel at ease and where a certain image of English life has continued undisturbed for centuries. Whether or not such village communities exist is not the point, the ideal exists in people's imagination and shapes their ideas about the ideal community in which they would like to live.

The other community ideal is almost the complete opposite of this. This is the urban street as described by Jane Jacobs. If the village community is a rock pool the urban community is the shoreline washed by the ebb and flow of the tide. In the Death and Life of Great American Cities[4], Jane Jacobs recounts an incident on her own street which serves to illustrate the qualities of an urban community. She describes how she noticed from her window a small girl being dragged against her will along the opposite sidewalk by a suspicious looking man. Before Jacobs could decide whether to intervene she noticed '…from the butcher's shop had emerged the woman who, with her husband, runs the shop; she was standing within earshot of the man, her arms folded with a look of determination on her face. Joe Cornacchia, who with his son-in-law keeps the delicatessen, emerged at about the same time and stood solidly on the other side. Several heads poked out of the tenement windows, one was withdrawn quickly and its owner reappeared a moment later in the doorway behind the man. Two men from the bar next to the butcher came to the doorway and waited, …the locksmith, fruitman and laundry proprietor had all come out of their shops and the scene was also being surveyed from a number of windows besides ours. The man did not know it but he was surrounded.'

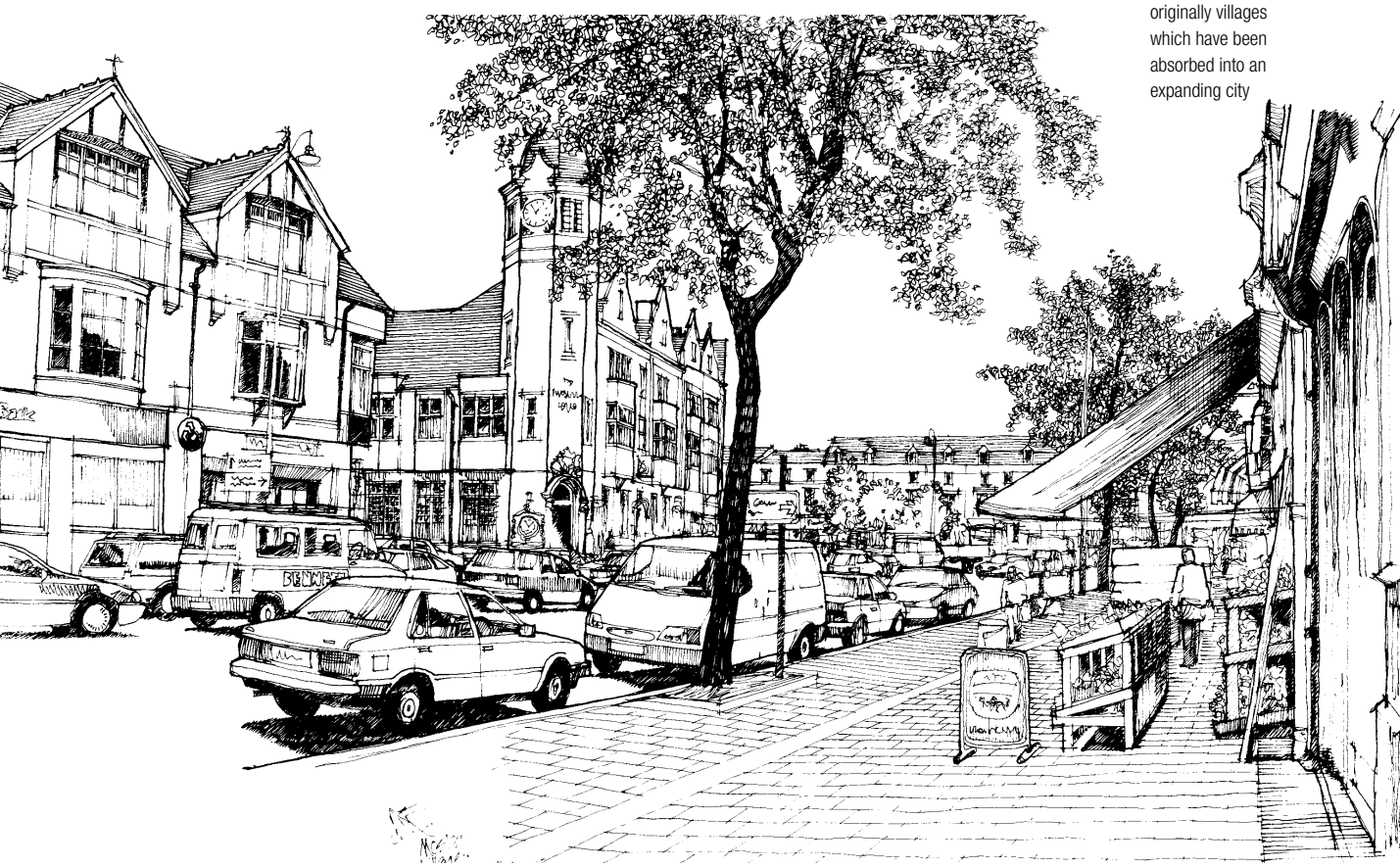
This is very different to the village community, although successful urban communities like Greenwich in New York often come to be known as villages. Yet there were probably more people living on Jane Jacobs' short street than in the whole of our ideal village. They did not know each other although most of them did, like Jacobs, know Joe Cornacchia and the other shopkeepers. They also quite clearly felt a responsibility for the street but this did not translate into a hostility towards strangers. Indeed the little girl in the story effectively became a co-opted member of the community with full rights of support and protection for the duration of her short walk down the street with, what turned out to be, her father. The urban community therefore embraces the stranger as someone who enriches it rather than as a threat. Indeed a stranger need only visit the street on an occasional basis to feel part of the community.

Jacobs described how her street changed during the day with the commuters leaving for work in the morning followed by the arrival of the local office workers and the children going to school. Later in the morning mothers with young children and 'bums' tended to dominate

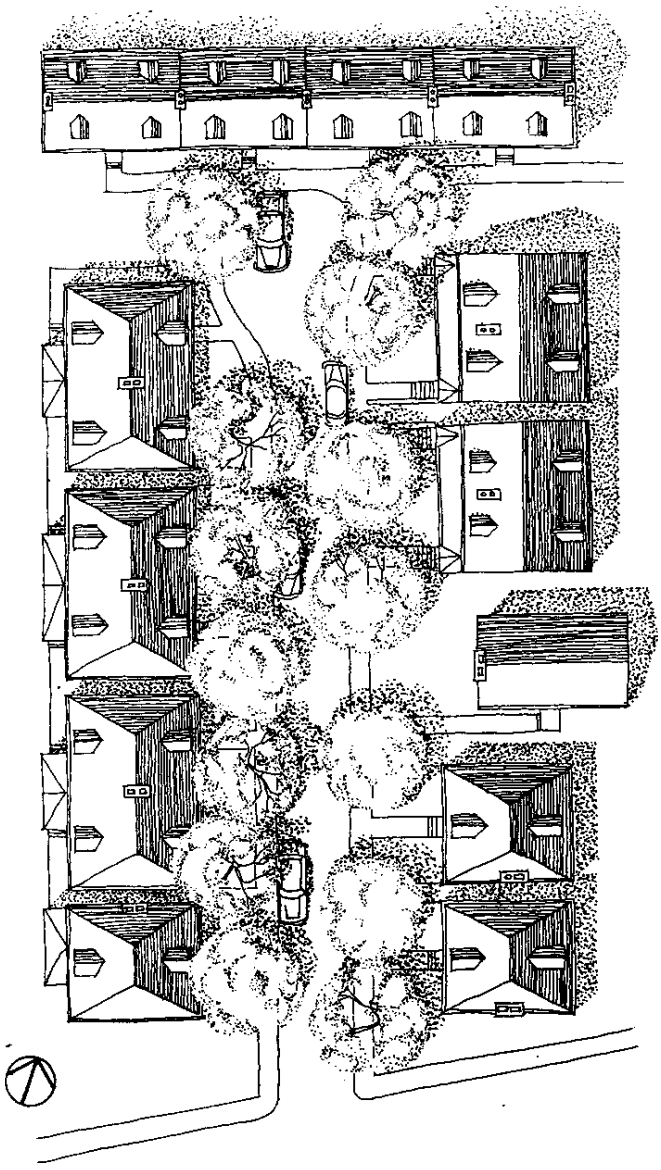
followed by the frenetic activity of lunchtime and so on throughout the day. This cycle of activities continues day after day as part of wider weekly and annual cycles so that the constantly changing street scene is accommodated within a regular and unchanging structure.

Jane Jacobs was writing in 1961 and she has been accused[5] of sentimentalising urban life. Some question whether such urban communities exist any more or even whether they ever really existed in the past. This again is not the issue. Like the village ideal, the urban community is an idea which inspires many city dwellers. It seems likely that most people's vision of community is at least partly based on one of these two models. While the same may not be true in continental Europe, in the UK it is the village community which has held sway. Most surveys of housebuyers show that what they aspire to is the rural ideal even if very few actually achieve it. What they do achieve is the suburban community which is, in many respects, a hybrid form of community which is a development of the village in an urban context.

We have already discussed the communities based on networks of interest that thrive in suburban areas. There is however a more local dimension to the suburban community which is more rarely achieved. A good description of such a community is Allen Jacobs' evocation of the street where he once lived in his book Great Streets[6]. In this he describes Roslyn Place in Pittsburgh, a short tree-lined cul-de-sac of eighteen detached and semidetached houses: 'in a small space there are eighteen doors that people walk into and out of so people pass each other and each knows where the other lives… Recognition, discussion, communication, community are encouraged by the nature of the street. On a Saturday morning in Spring,



The village in the city: Successful urban communities like Moseley in Birmingham often come to be known as villages. Indeed many, like Moseley, were originally villages which have been absorbed into an expanding city



The suburban community: Roslyn Place in Pittsburgh, the street described by Allen Jacobs

Izzy Cohen, chemist, is screaming at the retired butcher who parked last night where Izzy usually parks… later more intimate discussions of what went on and why will take place in small knots of two or three neighbours. Surely Izzy will want to explain to each group what happened. The butcher doesn't speak. He is a quiet man. Solitude, if you want it, is also possible… people will sweep a walk, others will garden, people will come and go. Maybe a date will be made for coffee later or for a dessert after dinner'. This is also an idealised vision and is not typical of most suburban areas. As Allen Jacobs points out the street has no off-street parking so that houses are closer together with uninterrupted sidewalks and the parking of cars provides an endless topic of discussion for Izzy and his neighbours. Whilst the description of street life has overtones of Jane Jacobs, the community that Allen Jacobs describes is much more like the village. Everyone knows each other and strangers are not welcomed. There is no sense in the description of the wider urban area, which one feels is probably part of the attraction. However unlike the village this suburban community is not mixed. Its strength is social homogeneity rather than variety. It works, not because it can accommodate different lifestyles but because its residents share similar values.

However not all suburban environments are as supportive as Roslyn Place. Few manage so skilfully to balance the desire for privacy with the need for contact. Indeed as Allen Jacobs points out, a host of regulations would prevent Roslyn Place from being built today. Much suburban development takes place on a far greater scale. David Popenoe in his book the Suburban Environment[7] looks at Levittown, a private suburban estate of 17 300 single-family homes on 5 750 acres of land near Philadelphia. Levittown is divided into neighbourhoods which contain not eighteen but 430 homes, each on its own plot. As Popenoe summarises: 'In the early years of Levittown the teenager, the elderly person, the widow or divorced female… the working class women living in tight financial straits and cutoff from relatives were unfamiliar figures. Today they have become common and the environment is not as congruent with them as it was with their predecessors. For adults in anything but a fully functioning, economically secure family system, Levittown may be an invitation to trouble'. This, again is an extreme example, but it illustrates that the development of mass suburbia has done little to foster the sort of communities described in this chapter. Such environments have been created for the nuclear family and are increasingly inappropriate for the demographic groups who are likely to dominate the twenty-first century.

Here are three very different views of community – the village, the urban street and the suburban hybrid. Each may be rarer than we would like to think but undoubtedly provide valuable models. Each can deliver the benefits that flow from a strong community but will only thrive in a particular context. Indeed none of the models transplant well from one situation to another. The rural village may be a model that many people aspire to but translated, as it was, into the tight courtyard council house developments of the 1970s it was always destined to fail.

It is however the suburban model of community which has been most consistently misapplied. It is this type of community, at least as described by Allen Jacobs, that many professionals have been striving to achieve for decades. For ourselves we may strive for the village or urban communities but when planning communities for others it has generally been the tightknit, homogeneous community that we have had in mind. It is however far from clear whether such communities can be created, particularly on a large scale. It is also questionable whether such communities will thrive if the only thing that people have in common is the fact that they are disadvantaged, which is often the case on new housing association estates.

However if, as we have suggested, environmental and demographic trends are

BENTILEE: STOKE-ON-TRENT

The Bentilee Estate on the outskirts of Stoke-on-Trent is an interesting example of the application of a community ideal. Bentilee is a council estate of some 5 000 properties which was developed in the garden city style in the 1950s. Over the years the estate has acquired a poor reputation and has struggled to achieve a community identity because of its scale and isolated location. In 1996 the opport-unity arose to improve the estate through the government's Single Regeneration Budget. The concept behind the scheme was the transformation of the estate into a series of villages and the programme was called the Villages Initiative.

URBED recently carried out a study to explore the trans-formation of the estate into a series of eight village centres. By studying the history of the area and building upon local nodes such as shopping parades, pubs and schools, a series of village centres were identified. These were reinforced by creating community halls, and introducing new housing development to create a sense of enclosure and increased density. It had originally been suggested that the key to creating village identities was the selective demolition of properties to create open space between each village. However the study concluded that this would not work and was in any case based on a model of a village community which was not appropriate for the area. Rather than a rural village a concept was developed based on the villages which exist in urban areas. These are defined by their centre rather than their edge and tend to merge into the surrounding urban areas. The idea in Bentilee was therefore to create a series of village centres and to allow the population to gravitate towards whichever village centre they preferred.

In Bentilee these ideas were subject to extensive consultation with local people. It was clear from this that not everyone viewed the idea of a village community as a positive thing. Indeed young people saw it as somewhere where people stuck their noses into your business and stifled individuality. However the word village still held a strong appeal, particularly to the older members of the community, and the proposals received widespread support.

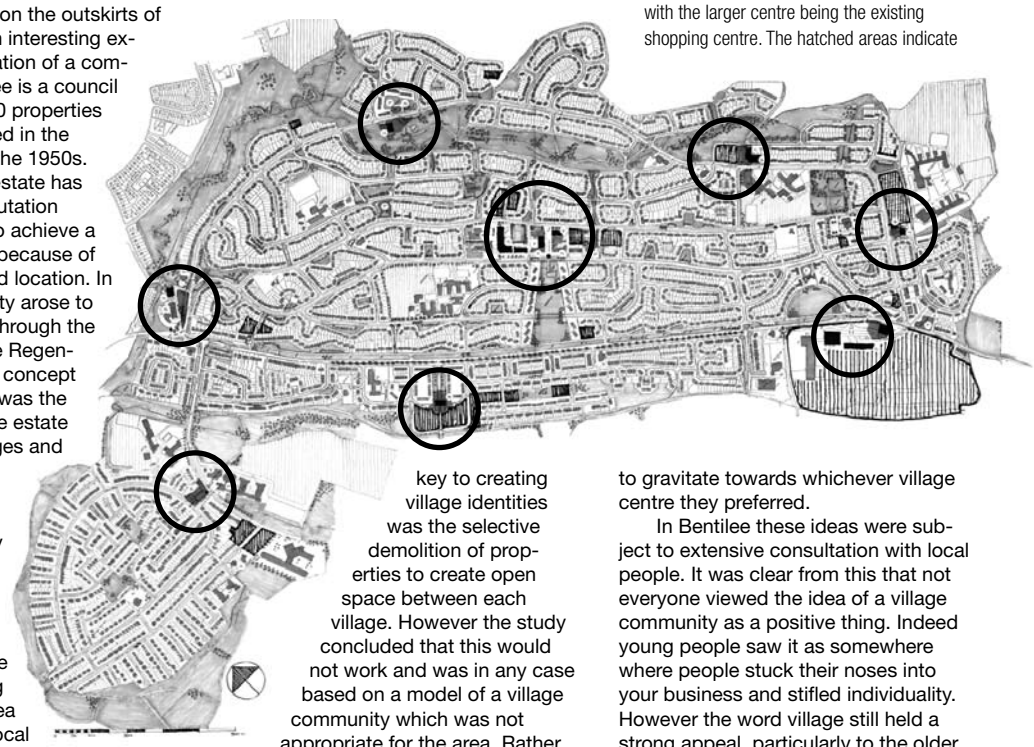


Illustration by Levitt Bernstein Associates. The circles indicate proposed village centres with the larger centre being the existing shopping centre. The hatched areas indicate

pointing towards a more urban society in the future, the question is whether the suburban community can be transplanted to urban areas. This has been done by people like the Old Eldonians Housing Co-operative in Liverpool. However generally this type of suburban community is not tolerant of the strangers which are inevitable in cities. This can make them vulnerable to crime and antisocial behaviour which in turn creates pressure for overt security measures. Indeed a third of all new housing development in the US is taking place in 'gated developments'[8] separated from the rest of the world by fences, gates and security guards. Is this what we must resort to if we are to preserve the suburban community in the city?

In the twenty-first century people's ideas about the ideal community, both for themselves and others, will continue to shape the city. However we must recognise that different types of community only thrive in the right context. The village and suburban communities are attractive ideals to which many people aspire. These aspirations will continue to drive suburbanisation as people seek to achieve their ideal of community. These ideals should not however drive urban planning. The village or suburban community transplanted to the city simply will not work. If we are to make cities more popular we need to develop new models of urban communities to complement the suburban communities which will continue to serve large sections of society. Jane Jacobs' description of urban community life may already have been dying out in the early 1960s when she was writing. However it is still a vision which is attractive to a large section of society. These people are not the majority but demographic change suggests that they are growing. If urban areas are to be revitalised it will be by tapping these very urban ideas of community rather than importing inappropriate models from the suburbs.

It is likely that the notion of community will be an increasingly important influence on the twenty-first century home. This will however require a rethink of our preconceptions about the 'good community' and the development of concepts of community more suited to non-family households and urban living.

Chapter 8
Cost The economies of urban development

The final 'C' stands for cost, a factor which has always influenced housing design more as a constraint on innovation than as a respectable goal like green design, consumer choice or community. Great improvements tend to be made in housing design when cost constraints are less strong, as in the 1920s. However when concerns focus on value for money – as has happened in the recent past – fears are raised that standards are falling and innovation is being stifled. It may be simplistic to suggest that spending more money will always produce a better product but we must raise our sights above the penny-pinching battles which have characterised late twentieth century housing. In doing this it would be reckless to ignore the issue of cost.

Innovation and cost

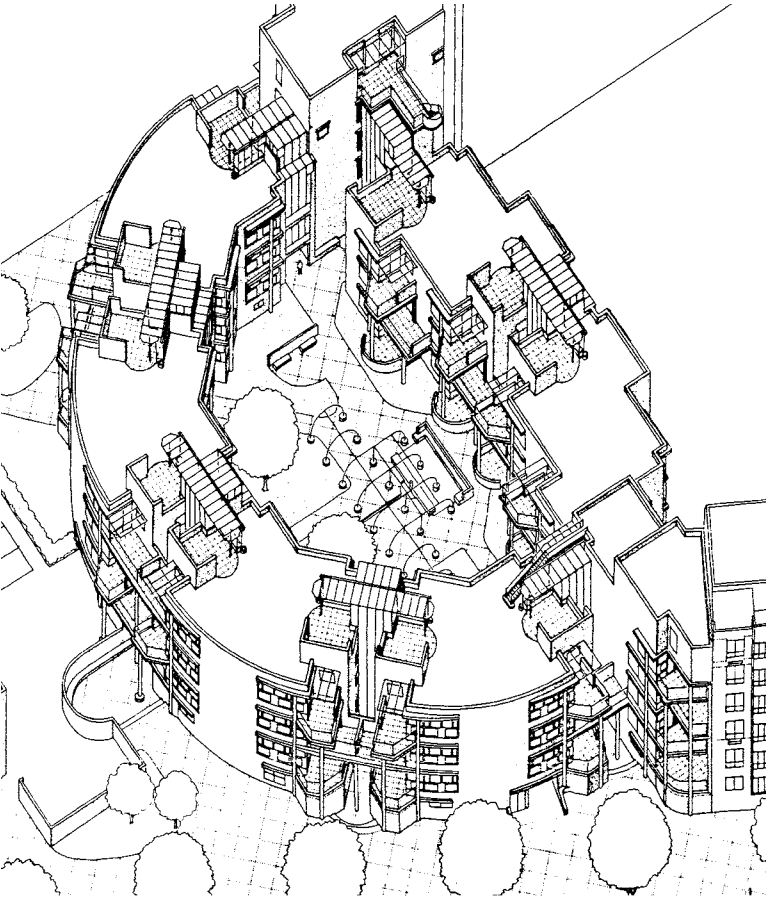
The transformation in housing design which took place at the beginning of the century shows the impact that innovation can have on cost. While Ebenezer Howard devoted large parts of his writings to the economic structures of the garden city, his object was not to show that it could be built as cheaply as the terraced housing which made up the majority of development at that time. When the garden city ideas were first put into practice on a large scale in the council housing of the 1920s the costs increased four-fold over what had been produced before the First World War. The result so alarmed the Conservative government of the time that council house building was stopped. When it resumed in the mid 1920s efforts were made to reduce costs. However, having seen the future and liking it, councils, their architects and their tenants were not going to go back to prewar standards. Thus a great leap forward in housing standards and a great burst of innovation was accompanied by a huge increase in costs. The new standards also had a profound influence on private production and, whilst private developers undoubtedly built cheaper than councils, they had to match the new public sector standards and therefore also saw a substantial increase in their costs.

Finance is unlikely to be so readily available in the future despite pressures from those who argue for higher standards. Indeed the Latham Report[1] has argued that construction costs should be reduced by 30%. While this is largely based on reform of the construction industry it holds out little prospect of resources being made available to increase standards. Yet there are dangers in pushing through higher standards without increasing costs. The Parker Morris standards which were mandatory for a time in the 1960s are estimated to have increased construction costs by up to fifteen percent, yet without an increase in overall budgets the result was that savings were made elsewhere through high-rise and system-built construction and lower labour costs. In real terms, the amount spent on new housing today is less than was spent in the 1960s and one could despair at the po-

tential for improvement and innovation in such a climate. What choice have we but to continue building the cramped brick boxes that are the 1990s equivalent of the system-built flat?

Continental approaches to cost

The prospects of improvement seem even more remote when we look to the continent, as we so often do, for inspiration. In the 1980s German construction costs (excluding land and external works) were £1 200–£1 500 per square metre, whereas the equivalent figure in the UK was just £450–£600 per square metre[2]. What is more the average floor area of German housing is some 50% greater than the UK average. The result is that the Germans spend up to four times more on the construction of their housing than we do in the UK and the Germans are by no means unique. If anything the Swiss spend more on their housing although it is significant that most of this, even at the top of the market, is for rent rather than sale.



Continental approaches: Social housing by Herman Hertzberger at Lindenstrasse in Berlin, designed with high levels of resident involvement

Since the 1980s the gap between UK and continental construction costs has widened as a result of a steady downward pressure on UK housing costs. It is true that part of the greater costs in Europe can be accounted for by higher labour and materials costs as well as exchange rates. This does not however explain the whole difference, which is the result of a radical difference in UK and continental views of housing as a long-term investment.

The German people view home ownership very differently from the British. The UK approach has been to struggle onto the first rung of the housing ladder at the earliest opportunity and to rely on rising values to trade up to the house of your dreams later in life. People will therefore put up with a cramped, substandard house in their twenties in the hope that it is only a staging post to something better. In Germany, by contrast, a house is an investment made much later in life with the intention that you will live there for a long time and pass it on to your children. People therefore make do with rented accommodation in their twenties or even live with their parents until they have accumulated sufficient capital to invest in a substantial home.

These attitudes also influence German social housing developers who see private housing as a benchmark, as happened in Britain in the 1920s. In Germany social housing is built to last with a view to maintainability, running costs and long-term value. In the UK, by contrast, the attitude is that if the private sector can produce a perfectly saleable starter home for £40 000, why should social providers spend more? As Valerie Karn describes in her report for the Joseph Rowntree Housing Standards Committee[3] this means that housing designed by private developers as the first rung on the housing ladder is being filled to capacity by housing associations with families who have no realistic capacity of moving on as their needs change. In a depressed housing market the same fate can befall owner-occupiers as negative equity denies them the ability to 'ladder up' to something more suited to their needs.

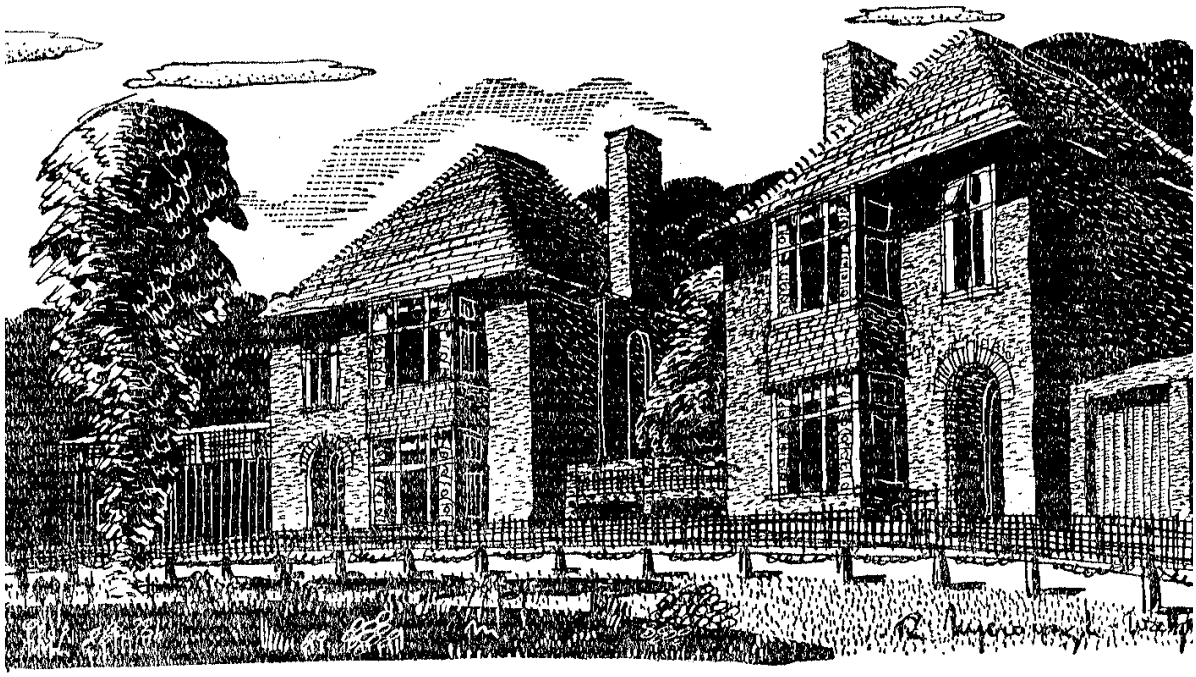
Market constraints

Some commentators [4] have argued that the UK housing market is becoming more like the continent as people buy for 'nesting not investing'. However there is little sign that this is influencing the housing that is built. The reason for this is the workings of the housing market. Defenders of the volume-housebuilding industry argue that the market is only providing what the customer demands. Housing is produced at a cost which allows it to be sold at a profit and the market regulates the balance between the quality of the product and the price. However the housing market is imperfect and does not always make it possible for needs to be met. If this is not heresy, we would also argue that the buyer does not always know best because of the narrow way in which UK housing is valued.

As the joke goes in estate agent circles, the three most important factors in property value are location, location and location. Not the quality of construction, the energy-efficiency or the floor area, not even the attractiveness of the design – all come a poor second to location. This is clearly very significant if we are to attract people back into urban areas because the locations to which estate agents attach the highest values, parts of London excepted, are not urban. It could be argued that this simply reflects where people want to live. However the workings of the market can work to inhibit these preferences. If housing in urban areas costs as much to build as housing in the suburbs, yet can only be sold for half of the price it would, at present, be economically fool-hardy to develop or buy unless the price is substantially discounted by subsidy (as indeed is the case with much private urban housing). If more people choose to buy housing in urban areas, the value of urban housing will increase. However at present if they choose urban housing they risk buying a low-value product and one which is likely to give poorer returns on their investment than the suburban alternative.

The flip side of this coin is that the greatest value is attached to housing in locations where green belt policy means that development sites are scarce. This has the effect of artificially increasing land prices so that while we may not spend as much on housing construction as the Germans we make up the difference in the price that we pay for land. As Colin Ward described in a recent column in 1945 land prices accounted for 5% of the cost of housing. By the 1960s this had risen to 40% and in parts of the south-east today it is as high as 65%[5]. This means that the UK house-building industry tends to make its profits not from building housing but from trading in land and they have a strong vested interest in keeping things this way. The success of private house-builders depends on their ability to buy land at the right price. This they do through 'land banks' which are built up when prices are low and then developed when the market rises. Given the importance of land to developers it is not surprising that they are reluctant to trade in the damaged product that they consider most urban brownfield land to be.

There are other inconsistencies in the market. While surveys [6] may show that people consider energy efficiency as an important consideration when buying a house, the reality is that it plays far less of a role than the quality of the kitchen or 'kerb appeal'. This may be because buyers and tenants are not being given enough information about savings on running costs. However even where they are given this information, for example through a National Home Energy Rating, it does not play a major part in their decision. The real reason is that energy efficiency is not reflected in the value of the house unlike the fitted kitchen. This means that they are faced with paying more for a better insulated home which is worth no more than a poorly insulated home. Indeed houses built in Milton Keynes, which were so energy efficient that they did not need central heating could not be sold[7]. The estate agent could not tick the central heating box on the valuation form so that the houses were valued as 'unimproved'. It is true that energy efficient homes cost less to run but buyers rarely make the link between purchase costs and running costs. This is partly because, unlike fridges, washing machines or cars few houses are sold with details of their energy consumption.



A safe investment: The traditional suburban home is more likely to keep and increase its value than more radical alternatives

The same is true of floor areas, which may explain why German and indeed American housing is 50% larger than in the UK. In Germany and America housing is valued by floor area and everyone can tell you the square metreage of their home. In the UK by contrast housing is valued by the spurious measure of the number of bedrooms. So for example a seventy square metre house will have a greater value if it has three bedrooms than it would with two. No matter that the storage cupboard masquerading as the third bedroom can accommodate nothing other than a single bed, it gets a tick on the valuer's chart and puts the proud homeowners a notch above their two-bedroom neighbours. Another example from that great laboratory of housing design, Milton Keynes, serves to make the point. Here a private builder developed a number of 200 square metre two-bedroom houses intended for affluent couples whose children had left home. Again these units caused headaches for the valuers since as two-bedroom units they should have been starter homes yet clearly they could not be valued as such.

It would be easy to blame the housebuyer for these market inconsistencies, but that would be to miss the point. In the UK housing is viewed both as shelter and as an investment. With an investment it is safety, not innovation, that counts. For something to be a good investment, you must be sure that other people will accept its value. The further that you move away from the market norm the more you run the risk that this will not be the case. An example of this is the rule of thumb that an architect-designed home is worth ten per-cent less than an equivalent house of standard design. People buying a home therefore face a dilemma if their idea of the ideal home is different to that of the market. Do they maximise the return on their investment or go for the home that they want? The same is true of private builders who need to be sure that what they built will sell quickly and for a good price. It is, of course, possible for market norms to change. The people who bought the early city centre apartments in cities like Manchester were buying a product which the market regarded as low value but the market has changed and they have been handsomely rewarded.

However the safest investment in UK housing remains the suburban semi; it may not suit your needs or even your aspirations but at

least you know that when you come to sell it will have increased its value. The UK housing market is therefore inherently conservative in both what and where it builds. We pay too much for building plots while the valuation formula leads us to cut costs on construction. By providing features such as the maximum number of bedrooms, the fitted kitchen and the mock Tudorbethan exterior the development industry is still able to achieve a good price for producing a product which is by any international comparison substandard. This will remain the case while the housebuilding industry is insulated from international competition by the localised nature of the housing market. However, like the car industry in the 1960s, if international housebuilders do manage to establish a UK base – as a number of Japanese and Scandinavia firms are trying to do – the UK industry may find itself very vulnerable to competition.

Cost constraints in social housing

The situation in the social housing sector has many parallels as social housing providers produce housing which is almost indistinguishable from low-cost homes for sale. This is partly because, as one participant at an RIBA Focus Group said of social housing tenants: 'They want Brooksides… ask your average council tenant what they want and you will discover that they want to live in a house that makes them look like an owner occupier'[8]. However, despite the community architecture movement, it is not often that social housing tenants are asked what they want other than the right to refuse a limited number of offers. The real reason why housing associations are lowering their sights to those of the starter home is once again cost. With social housing costs are set not by the market but by a government appointed body, the Housing Corporation. This operates a system of cost yardsticks called Total Cost Indicators which vary by housetype and region and are adjusted annually in line with scheme outturn costs. In the 1980s these yard-sticks lagged behind spiralling tender prices and were very difficult for developers to meet. In the more competitive tender climate of the 1990s the yardsticks have been relatively easy to achieve. However a downward pressure on costs continues to be applied not through cost yardsticks but by the desire to reduce grant requirements in a competitive bidding market. The most successful and efficient housing associations have come to be seen as those who can develop with the least public subsidy or rather those who can provide the most housing with the subsidy available.

In many respects the desire to produce the maximum number of units with the grant available is understandable given the acute shortage of social housing. With huge housing pressures and limited resources, it must be right, so the argument goes, to build three houses with the money which once built two as one London housing association recently boasted[9]. Yet it is this shortage of social housing that removes any choice from social housing tenants. If you are offered a new house after being stuck in a bed and breakfast hostel you are not going to quibble about details like the quality of your home. However as the years pass and your family grows, you will notice the lack of space, the heating bills, the dearth of local facilities and the bus which never comes. By that time, unless you are lucky enough to afford to buy somewhere, you will be stuck.

Housing associations hotly contest this. They point to the flagship projects in their annual report where tenants were involved in design and quality was a priority. Yet for every flagship estate there are maybe four or five estates built in peripheral locations in consortium deals with private developers using their standard housetypes[10]. Indeed on a site visit organised as part of the Joseph Rowntree Foundation's Housing Standards Committee the director of a medium-sized housing association was shocked to discover the poor quality of housing being built on some of their less high profile new estates. Here cost, or what it is euphemistically called 'value for money', is the name of the game. The problems which this is storing up for the future are increasingly being recognised but there is as yet no indication of the money available for new social housing being increased.

The Housing Corporation have however published URBED's sustainability checklist[11] with the aim of avoiding the problems that have affected some recent social housing developments. This will be used to assess all new social housing and discourage large developments in peripheral locations. It may therefore be that to ameliorate the potential problems of new social housing at a time when costs are not going to rise, more emphasis will be placed on building within existing communities and urban areas.

The future influence of cost

In both the private and social housing fields there are therefore powerful forces at play which reinforce both suburban designs and suburban locations as well as exerting a corrosive effect on quality and stifling innovation. While there are signs that things may be changing these forces must currently be seen as a major constraint on the promotion of more urban housing. But what of the future?

We could argue that the pressures for change described in the last three chapters will cause us to reassess what we spend on housing in the future and invest much more. In doing this we would be in good company but would probably not be being realistic. The trends in consumer spending and public finance suggest that the investment available for future housing will not be much more than that which is spent today. Indeed increasing household numbers may mean that we will need to produce more housing than we are currently doing within current budgets. As with Parker Morris, any increase in standards will therefore have to be paid for with savings elsewhere.

This however may not be as unrealistic as it seems. As we have suggested, a large part of the costs of new housing in the UK lie not in construction but in land costs. This is confirmed by government research on housing costs[12] which has shown that as little as 30% of the costs of a typical new house are in construction. This is eclipsed by land costs at 35%, whilst developers' overheads are 19.7% and infrastructure is 12.8%. This suggests that cutting corners on construction is a false economy since it has only a minor impact on overall costs. The reverse, of course, is also true and better specifications need not hugely increase total costs. This is where the real influence of cost on the twenty-first century home lies, not on what it will or will not allow us to build, but rather on where and how we build housing.

Where we build

The peculiarities of the UK land market are a significant influence on the location and cost of new homes. The curve of land prices in UK cities follows a very different track to continental cities. On the continent high values in central areas fall off in a gradual but relatively flat curve to the periphery. In the UK, by contrast, high values in the centre fall rapidly in the inner city before rising into the suburbs to a peak on the periphery. This is became the aspiration in the UK has been to live as far away as possible from the centre of the city. However the tendency to dispersal has been partly checked by green belt policy so that land is scarcest on the desirable periphery which relates not just to housing but to commercial and retail development.

Whilst accepting that the continental model may be changing with the advent of affluent suburbs and out-of-town development, the tradition has been very different. Here the centre is most desirable and hence is where the land values are highest. The difference is that the highest continental land values created by scarcity in central areas have naturally led to higher densities and urban development. If land is expensive it makes sense to build more intensively on small plots leading to higher buildings, a mix of uses and a greater use of apartments. Such forms are, of course, historically more acceptable on the continent. In the UK, by contrast and rather perversely, higher land values have combined with suburban aspirations for low densities, which is why land costs on new housing are so high.

In addition to this, peripheral locations may be poorly served by infrastructure. On green field sites developers have to put in the roads, sewers, street lighting, cabling etc. They

may have to pay to increase the capacity of the local sewage works or water pumping station and may even, through planning gain, be asked to build or extend a primary school. To make such investment worthwhile there is a tendency to look for economies of scale by building ever larger estates.

This suggests that there may be real cost savings (as well as environmental benefits) to be made by building within existing settlements. Here the land is cheaper, roads and other infrastructure already exist, there is spare capacity in schools, as well as in services like water and sewage. This was an argument that we sought to test through our *21st Century Homes* research through a series of demonstration projects, although the results were inconclusive[13]. Certainly the land costs for the urban demonstration projects that we developed were low and some infrastructural savings were possible. However poor ground conditions caused by back-filled basements cancelled out some of these savings and in other areas contamination may also be a problem. Much of the urban infrastructure is also in need of renewal, particularly on redeveloped council estates. Indeed on larger brownfield sites the need to provide infrastructure may be almost as great as on green fields. It is possible that smaller scale infill development would overcome the problems of infrastructural costs, although here developers would not be able to achieve economies of scale and lack of space may increase site costs.

However the real constraint on urban, as opposed to peripheral, development is that even if the costs are lower savings cannot be put into improved housing because the value of the housing is also lower. Yet when land needs to be found for 4.4 million homes, urban infill is likely to be a more cost-effective, sustainable and politically acceptable solution than abandoning green belt policy. It is therefore important to stimulate urban housing markets by subsidising costs such as land contamination. Over time this would increase urban housing values so making it more financially attractive to developers. While subsidy may be politically unattractive it should be recognised that peripheral development is already subsidised by road building and other public services and it is in our best interests to make better use of what we already have in existing towns and cities.

How we build

The other area in which cost will exert its influence is in the way that housing is built. There has been a common misconception in the past that housing is architecture so that has to be procured in the same way as one would a concert hall or an office building. Architects have been appointed along with engineers, quantity surveyors and service engineers and they have worked their creative magic to produce a design which meets the clients' needs, fits the location and, hopefully, enhances our quality of life. There is no doubt that this system can produce fine housing developments (although it can also produce disasters). However it cannot be a cost-effective way of building what is our most common form of building in the UK. Indeed it is a bit like a car manufacturer commissioning a team to design each run of fifty cars coming off the production line.

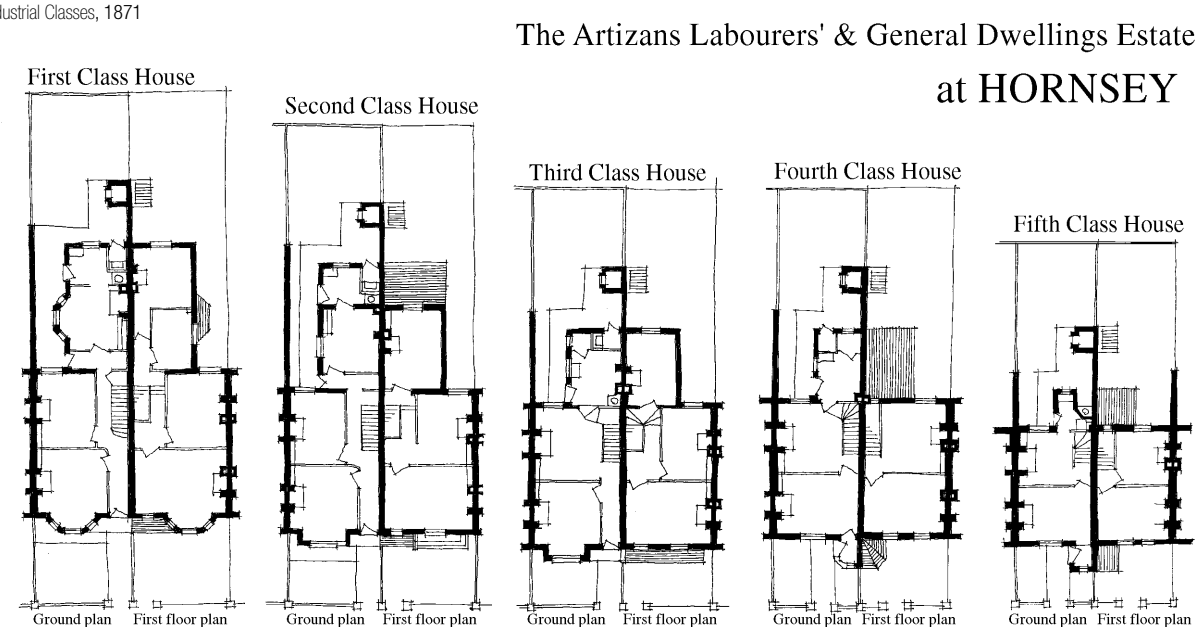
Because architecture is a creative profession it somehow does not feel right for architects to reproduce the same designs for each new scheme they undertake. The tendency is therefore for the wheel to be reinvented on every site with all the attendant fee expenditure that this entails. Indeed even when housing is not built this way the fee scales assume that it is and the job is priced accordingly. The system by which fees are linked to construction costs also means that consultants' fees rise the more the scheme costs. Increases in specification are therefore reflected in higher fees regardless of whether they incur extra consultants' time. This is partly addressed by systems such as Design and Build construction where the contractor takes responsibility for either all or part of the design. However it is only a partial solution because, whilst insulating the developer from the risk of rising costs, it puts design decisions in the hands of the contractor who does not have a long-term interest in the quality or value of the housing.

Of course not all housing is built by this traditional route. Whilst it may be the way that many of the schemes that we read about in the architectural press were developed it is not how the majority of our housing is procured. Pressures on cost in the public sector meant that most council housing was produced using standard housetypes, a system which dates back to the standard designs in the *Local Government Manual* of 1920. In Manchester low-rise housing estates can be dated by the design of their houses from the earliest 'H1' to the 'H6' which were the last council houses built in the city. When councils were not using standard housetypes they were using building systems, often imported from the continent for the high-rise and particularly the deck-access property of the 1960s and 70s. Then as now, the architect-designed estate was something of a novelty and was confined to flagship developments like the Crescents in Manchester, Hyde Park in Sheffield or the last great council estate, Byker in Newcastle.

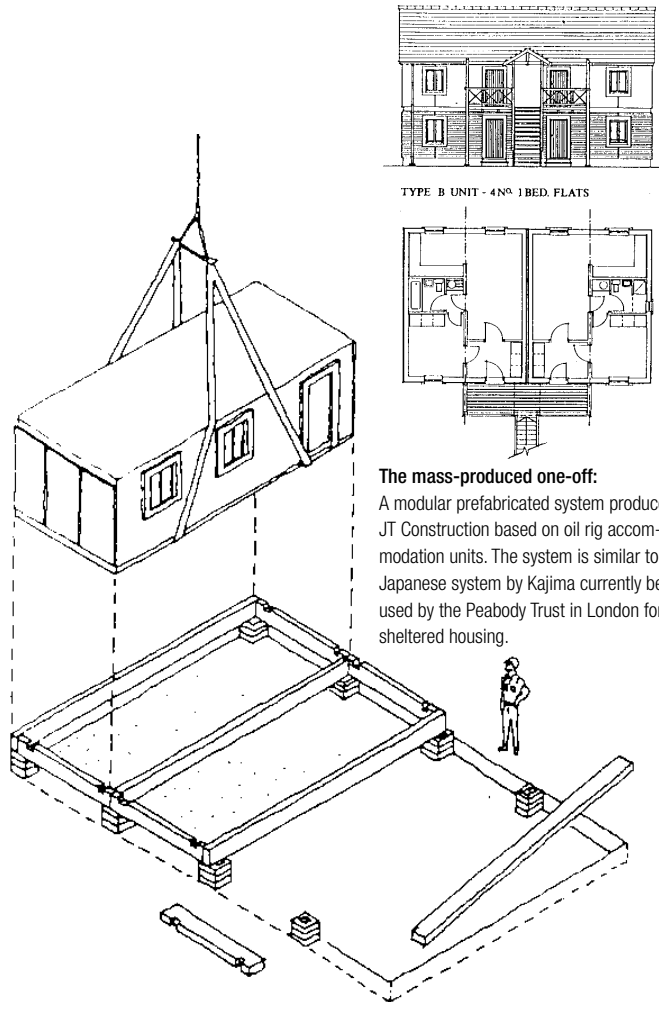
The same is true of private production where the architect-designed estate is a rarity. Here the standard housetype has dominated, albeit with names which are more appealing than the strict numbering system used in places like Manchester. The private sector has also been more skilful in disguising standard types with exterior decoration which can introduce endless variation into an estate of houses which are basically the same.

Historically there have therefore been two solutions to the problem of maintaining standards whilst reducing costs, standard pattern books and the use of prefabricated systems. Both are still relevant and have an important role to play in the building of the twenty-first century home. Standardisation can reduce design time and therefore fees, whilst increasing cost predictability and allowing the mass-production of components. Likewise prefabrication reduces design fees, allows mass-production under orderly factory conditions and can cut construction times with associated savings in interest charges and site costs. However standard types and prefabrication encounter resistance. Pattern books are seen as leading to monotonous repetition and to a stifling of innovation. Prefabrication by contrast is seen as unreliable and is tainted both by the memory of system-building and the timber frame scandals of the early 1980s.

Model plans: A series of standard housetypes designed for Noel Park in London in 1833. In the nineteenth century pattern books were common, perhaps the most influencial being Banister Fletcher's Model Houses for the Industrial Classes, 1871



These objections relate not to the principles involved but to the application of the techniques in the past. There has been a great deal of resistance in the social housing world to the use of pattern books. In Wales, for example, Tai Cymru (the Welsh equivalent of the English Housing Corporation) has introduced a mandatory pattern book of sixteen designs which are to be used for all new housing which they fund[14]. This has led to considerable resistance from associations wishing to innovate or fearing that they will be unable to respond to local circumstances or to tenant concerns. They also fear that they will be unable to build on tight sites in urban locations where the standard types do not fit. Yet Tai Cymru argue that the standard types meet their standards, have proved popular, and can be built within budget. The problem is that the pallet offered by sixteen standard types is very limited. Compare this to Bellway Homes, a developer which has prospered through the housing slump of the early 1990s. They have over a hundred standard types which vary from region to region and for different locations. Bellway's range includes three storey town houses and flats which can be used to close the corners of urban sites and has sufficient breadth to be able to respond to a wide range of needs, markets and locations. Their pattern book is also dynamic – where a site throws up interesting new designs they can be added to the range and used elsewhere while designs which develop problems or which do not sell can be dropped. The problem with the pattern book is therefore not so much with the principle but with the tired, limited range of designs that so many pattern books contain. If it is treated as a positive tool standard housetypes could have an important role to play in reducing costs and allowing the dissemination of good practice without the need to constantly reinvent the wheel. This, after all, is how most houses used to be built. In Georgian and Victorian times only the very grandest houses would have been designed by an architect. Most were developed speculatively by small developers who would get the floor plans and elevations from pattern books which they would buy. This was particularly true in urban areas where terraces allowed for the repetition of elements and continuous elevations.



The mass-produced one-off:
A modular prefabricated system produced by JT Construction based on oil rig accommodation units. The system is similar to a Japanese system by Kajima currently being used by the Peabody Trust in London for sheltered housing.

Potential cost savings also lie in the even more unpopular standardisation of construction. This goes to the heart of our construction industry which continues to build in much the same way that it has done for the last 200 years. Houses are still built laboriously brick upon brick by skilled labourers often standing in six inches of mud or freezing in a biting wind. This cannot be the best or most cost-effective way of building what is a very sophisticated and valuable product. This was pointed out by Michael Ball in his report *Housing and Construction: A troubled relationship* for the Joseph Rowntree Foundation[15].

Jane Jacobs in the *Economy of Cities*[16] identified three stages of development for manufacturing industry: craft production, mass production and differentiated production. She pointed out in the 1960s that the construction industry was only just emerging from craft production more than a hundred years after most industries. Yet its attempts at mass production were, on the whole, disastrous and it has since reverted back to craft techniques. The future is however with differentiated production where a product can be produced with endless variations whilst still retaining economies of construction. This must be the future for the housing industry which is so ill-suited to mass production.

An example of what this might mean can be seen in Japan[17] where the greatest advances in prefabrication have been made. The Japanese housebuilding industry constructs eight times as many new homes a year we do in Britain, for a population only twice as large, and the largest developer, Seki Sui Heim, produces 70 000 units a year, more than 10 times the largest UK house-builder. They do this using computer-aided design and computerised manufacture to customise each unit to the resident's requirements. Purchasers can choose a house style from a catalogue or exhibition and then adapt it to suit their own requirements. Japanese companies began research into increased industrialisation of housing production in the 1950s in response to oil price rises, the threat of earthquakes, skills shortages and the need to replace low-quality housing. Heavy investment has been made in marketing and production facilities made possible by the involvement of large companies such as Toyota. A house frame can be erected in as little as 3 hours and from order to completion, design and construction times have been reduced to just 50 days. Companies are able to achieve

THE MILLENNIUM VILLAGE: GREENWICH

One of the most significant prefabricated housing schemes in the UK is likely to be the Millennium Village in Greenwich. The winning design by Ralph Erskine proposes the use of a new prefabricated system based on a steel frame. This is then to be clad with factory-made timber panels to which glazing and external finishes can be attached. The system uses timber intermediate floors up to eight storeys with concrete floors for higher build-ings. Bathrooms and kitchens are to be factory-made timber pods fully fitted and ready for attaching to services.

The system is being designed specially for the project and is targeted to reduce construction times by 5% in year one, rising to 25% over the three years as well as reducing total costs by 15% in the first year and up to 30% over the life of the project. It is also projected to eliminate defects by year three and to reduce acci-dents from eight per thousand employees to two. The project literature suggests that

'by designing a new panel-based, cost-effective system for housing, the project will achieve a global lead for the UK which can be exploited beyond the year 2000'. The Millennium Village is likely to be the most important oppor-tunity to demonstrate and sell the benefits of prefabrication in the near future.

economies of scale through mass-production of some elements while tailoring the product to the varied needs of their customers. The trend has been to move away from timber frame in favour of steel frame construction. This is more reliable in terms of quality. The systems also include premade modules such as bathrooms, kitchens and exercise rooms which can be added on to the house or used for extensions at a later date. Such prefabricated systems are by no means confined to the Japanese. They are widely used in Scandinavia, Canada, the US and Europe.

Prefabrication need not need to be based on steel or timber. In much of continental Europe concrete systems have been used. In Holland, for example systems are used based on a prefabricated concrete structural shell. External cavity walls are also factory-made to include insulation, doors and windows and factory-made timber roofs arrive on site ready for craning into place and tiling. These European concrete systems have developed hugely since they were last used in the UK in the system-built housing of the 1960s. They are now used to create housing which is as individual and flexible as anything produced in the UK.

Is this the future for the British twenty-first century home? Much of the work on prefabricated housing has been based on individual homes but prefabricated systems are now widely used for flats and high-density developments in urban areas in Japan. However it may well be that the British, brought up on the three little pigs, are committed to the brick -built house which will not blow down however hard the wolf huffs and puffs. In our *21st Century Homes* research we concluded that the prefabrication industry in the UK was a graveyard of good intentions and questioned whether it really had any future in the face of market and industry resistance. However our more recent research also for the Joseph Rowntree Foundation[18] has shown that the situation is changing, not least due to the potential competition to UK housebuilders from foreign competition. An important role may be played by the Millennium Village in Greenwich which is being developed with a prefabricated system and will illustrate the advantages of alternative forms of construction on urban sites.

While the total amount of money available for new housing in the future will not be very different to the budgets available to us today, this does not mean that we must resign ourselves to building the mean houses which characterise so much of our current production. We should instead look to the economics of the land and housing market to reduce plot costs and ensure that quality is recognised in higher values. We should also look to the way that housing is procured to ensure that we are getting the full benefits of efficient volume production without the disbenefits of standardisation and monotony. People want their home to be unique as witnessed by the huge sums that people who have bought their council homes will lavish on stone cladding and external decoration. The challenge of the housing industry in the next century will be to produce what has been called the 'Mass-produced one off'[19] which can economically meet these diverse needs. However the influence of cost on the location of housing is less clear-cut. While environmental pressures and demographic change may be pointing to a return to urban living there remain economic forces preventing this from happening. It is possible that in the future urban sites will become more attractive financially, particularly if urban housing values rise. However in the immediate future incentives are required for many urban housing developments if urban repopulation is to gather momentum. It should however be remembered that the taxpayer has been subsidising peripheral development for years through commuter rail lines, roads and more recently motorways. Massive public investment has opened up land for development and created profits for developers. In this context money spent on urban housing is a good investment because it makes use of existing infrastructure and over time will create a market allowing subsidy to be reduced.