DESIGN AND DENSITY

The Government revised its planning policies for housing in March 2000. The new Planning Policy Guidance note 3 *Housing* (PPG3) promised to 'radically alter the way in which we build new homes in this country' and to put 'an end to the wasteful, badly located and poorly designed housebuilding that has gone on for the last 20 years.'

This briefing shows how well-designed housing, built at higher densities, can help deliver this objective.

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Sprawl Patrol priorities

CPRE is running a campaign – Sprawl Patrol – to ensure PPG3 is implemented on the ground. Its priorities are:

1. **Setting objectives not following trends – introducing plan, monitor and manage and the death of predict-and-provide**
2. **Urban renaissance – raising urban capacity and setting ambitious urban recycling targets**
3. **Urban first – using urban sites before greenfield ones – the sequential approach**
4. **Righting past wrongs – withdrawing existing greenfield allocations**
5. **Building better – making a step change in design quality and raising density**

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Introduction

The Government's Planning Policy Guidance note 3 *Housing* (PPG3) is very clear. 'Local authorities should avoid inefficient use of land. New housing development in England is currently built at an average of 25 dwellings per hectare but more than half of new housing is built at less than 20 dwellings per hectare. That represents a level of land take which is historically very high and which can no longer be sustained….Local planning authorities should therefore:

- avoid development which make inefficient use of land (those of less than 30 dwellings per hectare net);
- encourage housing development which makes more efficient used of land (between 30 and 50 dwellings per hectare net); and
- seek greater intensity of development at places with good public transport accessibility such as city, town, district and local centres'

(PPG3 Housing paragraphs 57 & 58)

Local authorities are also urged to 'reject poor design' (PPG3 para 63) and to 'think imaginatively about designs and layouts which make more efficient use of land without compromising the quality of the environment' (PPG3 para 54).

Why density matters

Talk about high density can provoke a variety of negative reactions. For many, there is an instinctive dislike of increasing density, a fear of 'town cramming' or an association between high density and high-rise tower blocks (many of which were in fact built at lower densities than those recommended in PPG3). Others talk of creating 'skyscrapers in villages' or damaging infill and do not see the relevance of the new planning guidance to small towns and villages.

When done well raising densities can:

- enhance and complement the character of an area;
- create opportunities for social contact;
- sustain public transport;
- encourage feelings of safety and security;
- absorb parked cars without intrusion;
- create a sense of identity; and
- maintain, even improve, local property values.

Doing this across the country can help to make more sensible use of land in towns and villages, reduce pressure on greenfield sites, sustain local services and contribute to revitalisation.

Although we can often get a feel for whether a development 'works' or not, there is no simple formula for calculating what the 'right density' might be. But this does not mean no progress can be made.

Illustration 1

Badly designed high density housing can make a development feel cramped, oppressive and overcrowded, and lead to a 'sea of cars'.

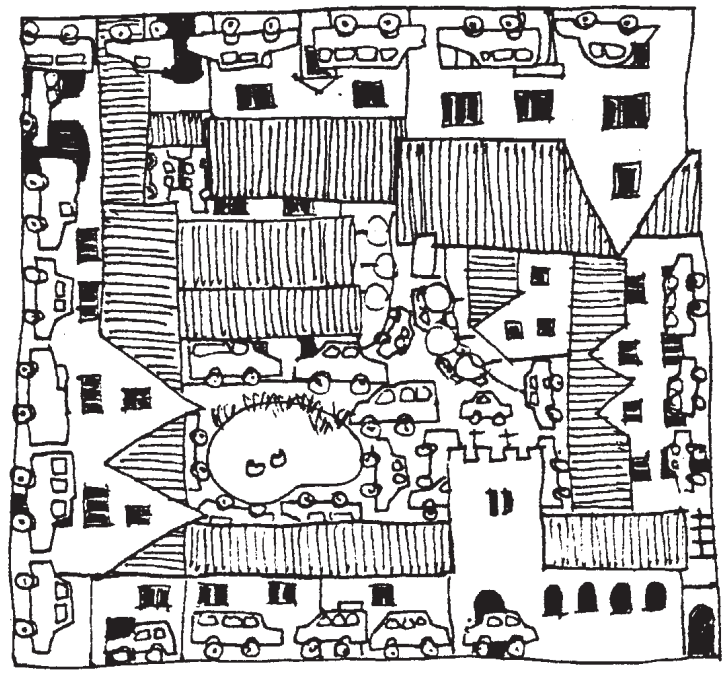
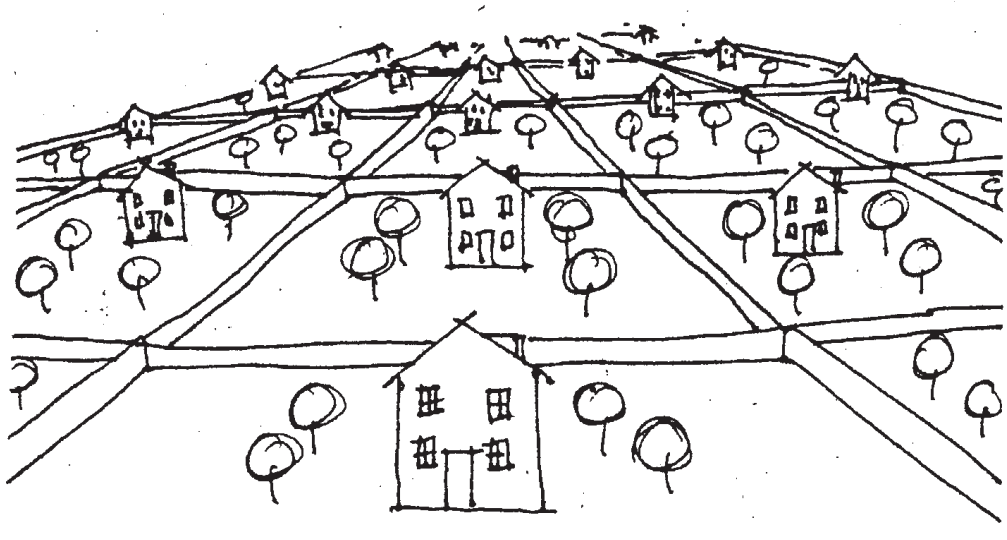


Illustration 2

Getting density too low leads to sprawl, feelings of isolation, and car dependency and can undermine the viability of public transport.



This briefing helps to show a way forward. It seeks to allay misplaced fears about increasing densities and to demonstrate the importance of the new planning guidance to the countryside as well as to our major towns and cities. At the nub of the issue is the quality and design of new building and the briefing shows how and where arguments about 'density' can and should be used as part (and part only) of the debate that leads to good quality new housing. In the final judgement it is design and not density which matters most.

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Using the briefing

This briefing can be used whenever discussions are held over new housing development in a small town or village. This might be in relation to a particular development proposal or when a Local Plan is being drawn up. In some areas Village Design Statements are being prepared and the November 2000 Rural White Paper announced a programme of 1,000 Town and Village Plans to be prepared by parish councils across the country.

The briefing looks first at the way density and parking standards are being used and the importance of good design over and above crude standards. It then explores the issues in a number of local situations. The inserts provide illustrated examples of how the quality and design of new housing development can be improved on infill sites in villages and towns and on an edge-of-village site.

It is also hoped to extend this guidance with real life examples from around the country as and when they appear and CPRE would welcome information on good examples of such development.

Defining density

As passers-by or residents we experience density mainly from visual clues. Impressions of 'high', 'low' or 'OK' density are influenced by many things, including: heights of houses; spaces between them; breaks and variety in building blocks; heights of garden and other walls; the amount of any site given over to parking and road; colour and tone of materials and stylistic features. We also read the social clues – about numbers, ages and mixes of people, tenure and, according to some research, the numbers of children around.

Nevertheless, no simple rules emerge from this. In villages in particular, infill development of a gap in a street with a terrace right on the pavement may result in a higher density figure than a strip of detached (and set back) houses, but the terrace would look natural and the 'lower density' version out of place. If anything hints at 'the answer' it is this: that a scheme that relates well in form and pattern to its surroundings is likely to be at the 'right density' irrespective of any figures.

And don't forget that many well-loved (and high value) areas in our towns and villages are built at densities (however one measures it) way beyond even the higher figures now being promoted by the Government. Cornish villages and Georgian town centres are but two examples.

Density, design and parking standards

The revised PPG3 is clear about the need to avoid low densities and recommends building in the range of 30-50 dwellings per hectare and higher in places with good public transport access. But given the enormous variety in house size (a small flat can be 80 sq m, an executive house 250 sq m.) one scheme of 30 houses can include literally two or three times as much volume of building as another scheme of 30 houses. Knowing the density in houses per hectare does not tell you whether the development will meet aspirations for locally distinctive design.

And then there are the roads and cars! Older towns and villages usually achieve their much higher house densities because people park on the road (or round the corner if the street is full). Modern developments have often tried to cater for much higher car numbers with the result that densities are controlled not by the quality and design of housing but by the availability of parking spaces for cars. PPG3 is clear that parking standards 'have been increasingly demanding and have been applied too rigidly, often as minimum standards. Developers should not be required to provide more car parking than they or potential occupiers want, nor to provide off-street parking where there is no need' (*para. 60*). It recommends that 'developments with an average of more than 1.5 off-street car parking spaces per dwelling are unlikely to reflect the Government's emphasis on securing sustainable residential environments' (*para. 62*).

There is growing interest in the use of 'bedspaces per hectare' as an alternative to houses per hectare but it is not included in PPG3. This gives some measure of the number of people who might be living in a development and so gets nearer the true built and visual density. But you can never be certain how many bedspaces will be occupied and trends towards smaller household sizes suggest the number of bedspaces will generally exceed the number of people living in an area.

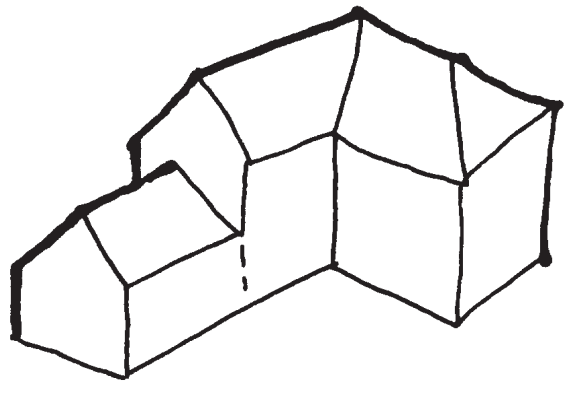
Density figures and parking standards are, therefore, at best a starting point and not the end point. The raw figures tell you nothing about numbers of people, the impact of road layouts or the way a designer can work in and around the figures to deliver a high quality development.

How does it look?

Imagine a small area of land – a plot on a site big enough for one 'executive style' house. Here it is, with some figures.

Illustration 1: a 5 bedroom house

With seven – eight bedspaces, double garage and front space (for two more cars).



Variation 1: large family with teenagers so seven – eight people and four cars.

Variation 2: 'empty nesters' (grown up kids) so two people and two cars.

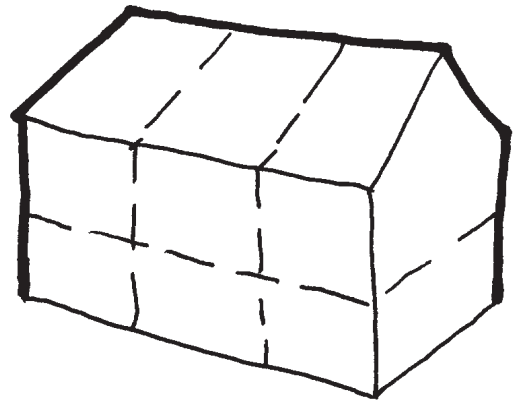
You could get 20 of these per hectare (or 140/160 bedspaces), so that's:

Variation 1: 140/160 people and 80 cars;

Variation 2: 40/80 people and 20 cars.

Now exactly the same amount of land, the same plot as above but a different kind of development.

Illustration 2: a flat block with three 1-bedroom and two 2-bedroom flats, plus garage (G) and other parking on plot.



That makes for 14 bedspaces and five car spaces.

Variation 1: fully occupied as 14 people and five cars.

Variation 2: lower occupation (some singles, couples etc.) generates seven people, still five cars.

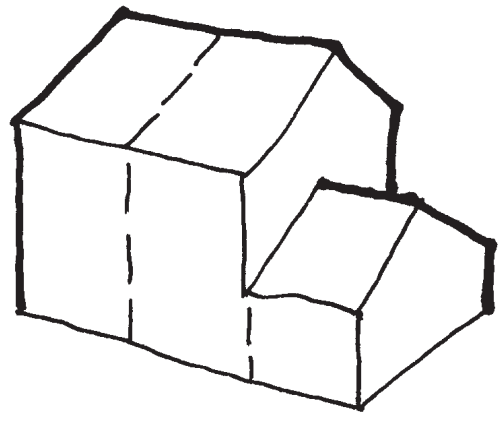
As before you can get 20 of these per hectare (or 280 bedspaces), so that's:

Variation 1: 280 people and 50 cars;

Variation 2: 140 people and 50 cars.

Now once again the same amount of land but….

Illustration 3: two terraced houses, one 3-bedroom and one 4- bedroom, with double garage, plus car space in front.



That makes 12 bedspaces and up to four cars.

Variation 1: If all households are families with children, that totals 12 people and four cars.

Variation 2: If it comprises a large family and a couple, that totals nine people plus three to four cars.

Once again, there can be 20 of these per hectare (or 240 bedspaces), so that's:

Variation 1: 240 people and 80 cars;

Variation 2: 180 people plus 60/80 cars.

By keeping the plot size identical, you can see how house type, occupancy and car ownership all vary the 'houses' and 'bedspaces' per hectare figures dramatically; (though bedspaces tells you a little more). Assuming general preferences for mixed house types and varied occupancy (especially over time) neither measure highlights any important differences that could not be ironed out by good design.

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Getting your voice heard

Local communities which care about improving the quality of development can and should make their voice heard in various ways. CPRE has produced a series of briefings for its Sprawl Patrol campaign, aimed at securing full implementation of PPG3 as quickly as possible. These are listed at the end of the briefing.

The main chances to shape the quality and design of development are:

- **Local Plan –** this is the key document setting out the planning policies for your area. Check when yours is up for review and use CPRE's briefing material to shape its content. Ensure density figures are at least as high as PPG3 requires and parking standards are reviewed. This is also the place to review design policies so that new developments have to meet new standards in terms of quality and appearance.

- **Planning application –** decisions on planning applications are guided by the policies in your Local Plan. Make sure the application provides enough information to be able to check its density and show how the design responds to and enhances its setting. Do not try to get an application turned down on low density grounds alone. Use density as a base around which to discuss (and if necessary object on the grounds of) poor overall design.

- **Supplementary Planning Guidance (SPG) –** many planning authorities include all or most of their important design policies in SPG (often as some form of 'Design Guide'). This also enables them to go further into detail than might be possible in the main plan. Once again, there is an opportunity to ensure that the SPG addresses density in the right, not the wrong, ways.

- **Town & Village Plans or Village Design Statements –** if you want to know where to put your effort in the most time-effective way on the density issue, look no further than Village (nowadays also small town) Design Statements. These are being produced in many areas with the help of Countryside Agency guidance. Following the Rural White Paper in November 2000, a programme of 1,000 town and village plans is also being developed across England, led by parish councils with Countryside Agency support, and these will progressively subsume Village Design Statements. Either can become Supplementary Planning Guidance. Good VDSs or Plans can provide – for each village or town – a clear description of local character and distinctiveness, and challenge designers to understand and add to this.

- **Convincing others –** there are still deep-seated, almost unspoken fears about density – especially 'high' density. Use this briefing to throw some light on the issue. Do a quick study of some well-loved area of local housing and its (probably high) density will surprise most people. Talk to local authority councillors, who can be strong opponents of increasing density. Even better, get your retaliation in first by talking to local developers and architects who work in the area. It is surprising how many will listen and change if you talk to them early. And then there are the highway engineers, who will need constant pressure to ensure developments are guided by good design and not the rulebook.

Providing examples

We are keen to share information about good examples of higher density well-designed development in rural areas. If you think an example near you fits the bill then please obtain the following details and send them to CPRE Sprawl Patrol, Warwick House,
25 Buckingham Palace Road, London SW1W 0PP:

- something to locate the development – address, site name, map or sketch, grid reference;
- number of houses/properties (including flats);
- a few photographs to show the development and its setting;
- contact details (ideally including a name) for the planning authority; and
- your own contact details (for any follow up).

Further information, if you have it readily to hand, might include the site area, site layout plans, planning history, relevant development plan policies, the name of the developer/builder and even an actual development density (e.g. houses per hectare).

Further information

Sprawl Patrol briefings

CPRE has produced a series of briefings to help deliver the benefits of PPG3 on the ground. These are all available free of charge from CPRE Publications.

Sprawl Patrol – introductory briefing to CPRE's campaign

PPG3 – *Housing* – summary of PPG3 and its implications

Plan, Monitor & Manage – an explanation of the steps required to implement the new approach in Regional Planning Guidance and development plans

Sprawl Patrol Challenge – a briefing for councillors highlighting key issues which need to be addressed

Key Questions – a campaign briefing with questions to ask every local planning authority about the implementation of PPG3

Breaking the Inertia – responses to familiar reasons being given for not implementing PPG3 on the ground

Key Quotes – supportive extracts from policy documents and Ministerial speeches

Urban Capacity Studies – a campaign briefing on how to assess the quality of an urban capacity study

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Shout it from the rooftops – examples of planning decisions and appeals which successfully apply the new policies in PPG3

CPRE's Sprawl Patrol contact group of volunteers is also engaged in reviewing the compliance of Local Plans across the country with the requirements of PPG3 and monitoring developments.

Other information

Sprawl Patrol: First Year Report – a review of the successes and barriers in implementing PPG3 in its first year. Price £3.00. Available from CPRE Publications, 25 Buckingham Palace Road, London SW1W 0PP

By design, Commission for Architecture and the Built Environment and Department of the Environment, Transport and the Regions 2000. Price £19.95. Available from Thomas Telford Publishing, Customer Services Department, Units I/K, Paddock Wood Distribution Centre, Paddock Wood, Tonbridge, Kent TN12 6UU

Urban Design Compendium, English Partnerships and the Housing Corporation 2000. Available free from English Partnerships, 110 Buckingham Palace Road, London SW1W 9SB.

Responding to planning applications, CPRE 2001. Available free from CPRE Publications, 25 Buckingham Palace Road, London SW1W 0PP

Sustainable Urban Extensions: Planned through Design, The Princes Foundation and English Partnerships 2000. Available free from CPRE Publications, 25 Buckingham Palace Road, London SW1W 0PP

Places, Streets and Movement: A Companion Guide to Design Bulletin 32, Residential Roads and Footpaths, Department of the Environment, Transport and the Regions 1998. Price £20.00. Available from DETR Publications Sale Centre, Unit 8, Goldthorpe Industrial Estate, Goldthorpe, Rotherham S63 9BL

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CPRE exists to promote the beauty, tranquillity and diversity of rural England by encouraging the sustainable use of land and other natural resources in town and country. We promote positive solutions for the long-term future of the countryside and to ensure change values its natural and built environment. Our Patron is Her Majesty The Queen. We have 58,000 supporters, a branch in every county, nine regional groups, over 200 local groups and a national office in Westminster. Membership is open to all. Formed in 1926, CPRE is a powerful combination of effective local action and strong national campaigning. Our President is Prunella Scales.

CPRE is a company limited by guarantee, registered in England, number 4302973.
Registered charity number: 1089685.

ISBN: 1 902786 55 6

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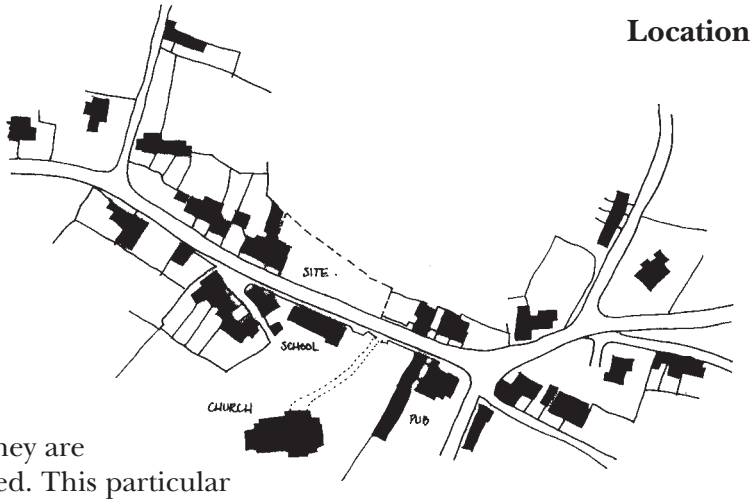
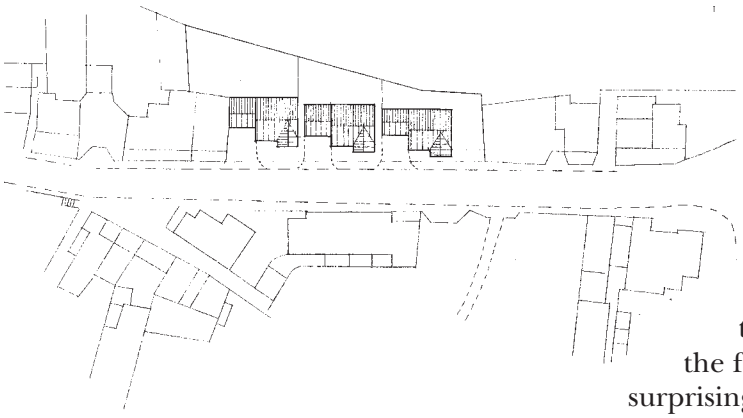
Example one – Village in-fill site

There is always a steady flow of small potential sites coming up in or near small village centres. It may be an old garage site – as in our example – or farm buildings, or some old workshops/sheds. They are nearly always fairly open sites rather than built up, so any development could seem intrusive at first. Handling development on such sites with care is a real challenge, partly because of their important setting, partly because they are usually quite small and oddly shaped. This particular example is also right at the heart of its small village opposite the school.

Location





Plan: Standard developers

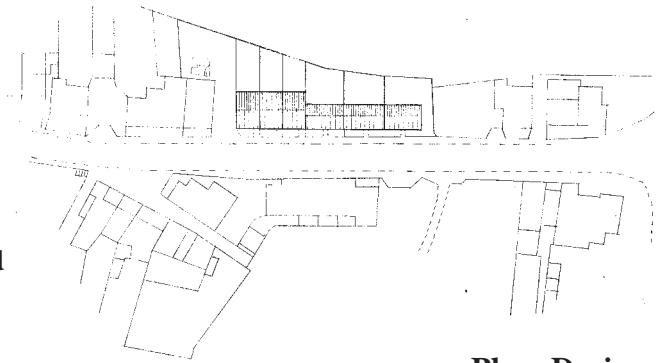
For the imaginary developer's basic layout to the left (comments on the design are overleaf), what mix and scale – and density – of development does this generate?

The site is very small: only 0.11 hectare. This scheme includes three standard, large houses along the frontage. That makes a perhaps surprising density of nearly 27 per hectare. They are all 4-bedroom houses providing five bedspaces each. That totals 15 bedspaces – or 136 bedspaces per hectare. Double garages with each house provide for six cars.

Both 'house' and 'bedspace' figures show clearly how limiting it is to use density standards on such small sites.

The layout to the right below sticks to a row along the frontage and aims to be more locally distinctive and higher density. It differs in a few ways from the scheme above.

First, two house types are included (more variation would probably be inappropriate). There are now four- and three-bedroom houses, three of each making six in total.



Plan: Designed

This layout sticks to a row along the frontage and aims to be more locally distinctive and higher density. It differs in a few ways from the one above.

This makes the housing density a remarkable 54 houses per hectare. That mixture of types also generates 27 bedspaces, or the figure of 245 bedspaces per hectare! To make comparison, there are the same number of car spaces: six, differently arranged.

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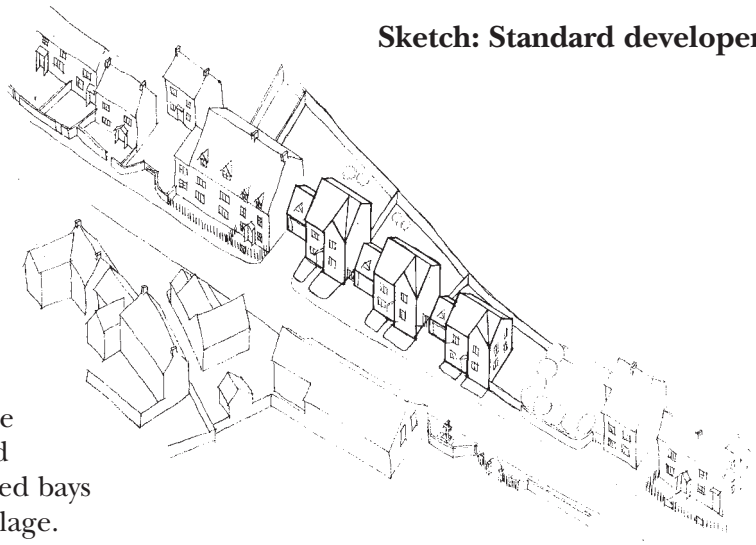
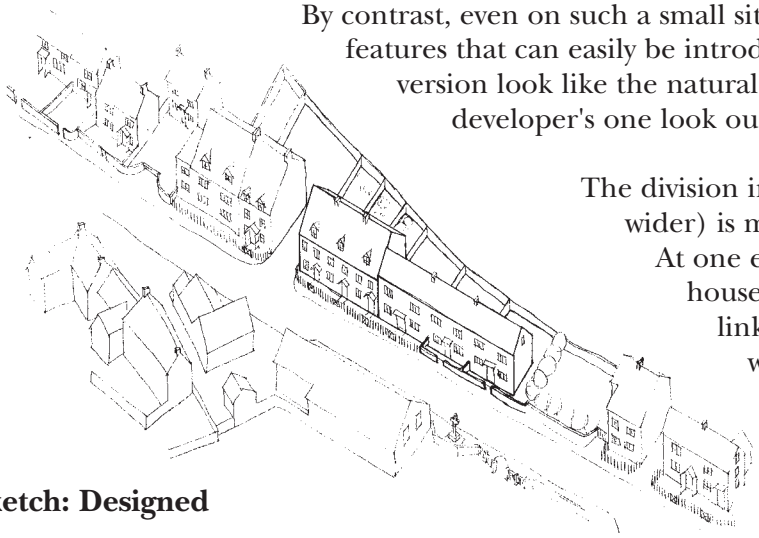
There is little to say about the developer's design. It is no more than three standard house types in a row: no acknowledgement of setting or context. Even in the small sketch it is clear that there is little repetition in the surroundings, in contrast to this banal design.



Sketch: Standard developers

The scheme also introduces three separate entry points off the road and, in design terms, gable-fronted bays that have no precedent in the village.

By contrast, even on such a small site there are good design features that can easily be introduced to make the designed version look like the natural, appropriate density and the developer's one look out pf place.



Sketch: Designed

The division into plots (thinner rather than wider) is more in tune with local patterns. At one end of the site the larger houses, with small dormer windows, link to the older houses to the left, while to the right the scale drops down to two storeys.

The parking area is not a wonderful solution but it provides an alternative to on–street parking and avoids spoiling the existing street line with three new entrances. Finally, note the way the small garden walls at the front of the houses continue the existing pattern along the street of walls and small fences.

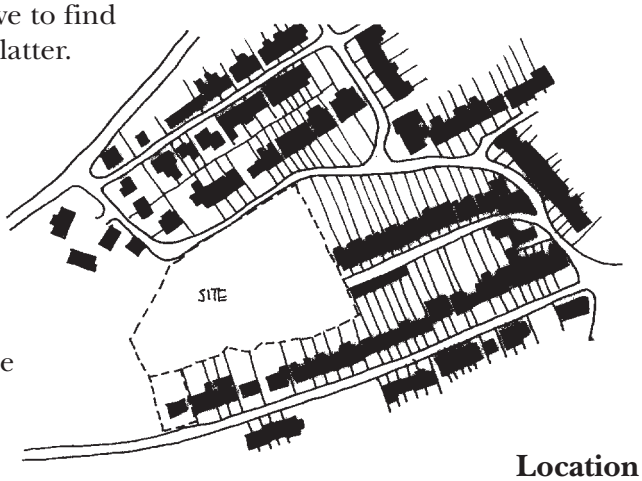
Despite – in fact, as a result of – the apparently large jump in density, this is a scheme that, after a few years will sit happily amongst its local neighbours.

An important lesson from these two schemes is that any minimum density figure, and especially houses per hectare, is of very limited use when dealing with sites of less than about a hectare – certainly for anything involving just a few houses. This can be awkward when achieving X number of houses in an area involves using a large number of small sites (because the average density could look extremely high) but the emphasis should still go back to the quality of design and fitness for setting, not necessarily standard national figures.

However, in any genuinely 'infill' situation, it is also not just the bulk and volume issues that make a positive difference. While, in the two other examples, some bits of the site might matter a little less, on infill sites everything is crucial. So much so that, even if the general form followed that shown on our preferred version, a bad designer could ruin this with poor choice of, and inappropriate use of, materials.

Example two – Town in-fill site

If we are to succeed in shifting the balance of development from greenfield to 'brownfield' sites, we have to find ways of making the best possible use of the latter. There are many forms of 'brownfield': an empty works site, almost invisible backland: some small, some large. A common version of such sites is shown to the right: land belonging to an old, large house now up for development. Such sites are often loved for their greenery and openness, even used (illegally) for play by local children. People are sad to lose them, so the quality (and density) of what replaces them is very important, as is sensitivity to existing trees and other features.



Location

Plan: Standard developers

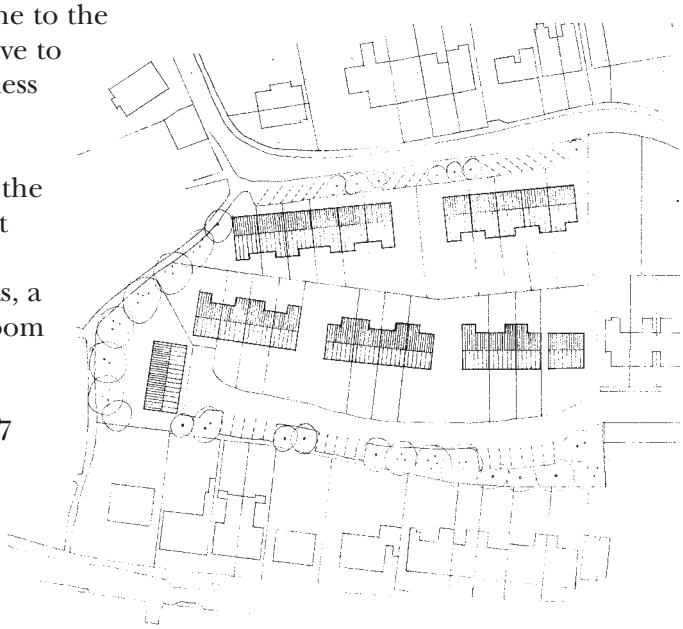
The layout to the left is what we often expect from a developer (and we comment on the design overleaf). But what is the density of a standard development such as this?

The site is average size: 1.3 hectares. What is shown here is a scheme of 18 4-bedroom houses: the larger ones providing six bedspaces, the smaller ones five bedspaces. The density is therefore 17 houses per hectare. Given the different house types, that can also be expressed as 93 bedspaces, or 71 per hectare.

As these are standard developer properties, there is a double garage per house, a total of 36 car spaces.

By just glancing at the layout, the scheme to the right might appear to be more responsive to site and setting, be less 'busy', perhaps less dense.

In fact, it uses a few changes that affect the density figures quite significantly. First it introduces a different balance of house types. There are now six 2-bedroom flats, a single 4-bedroom house and 22 3-bedroom houses (some in 'town house' arrangement): 29 properties in total. That moves the basic density up from 17 to 22 houses per hectare and the bedspace figure – based on a total of 116 – from 71 to 89. There are fewer cars – now 29 – and the provision is different (see over).



Plan: Designed

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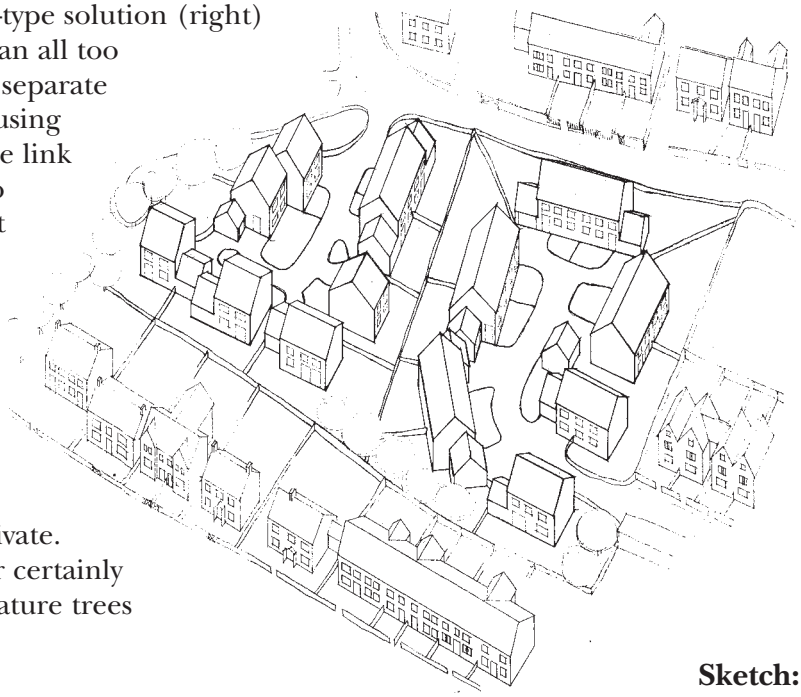
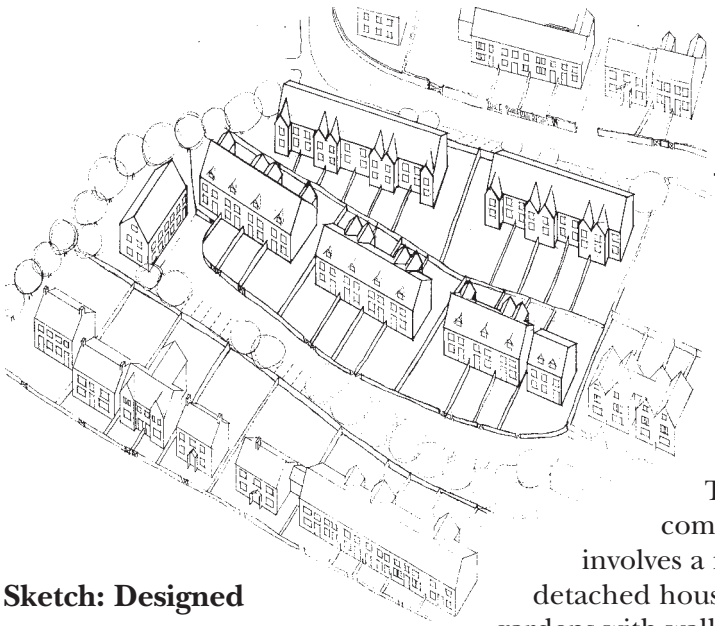
In design terms, the developer-type solution (right) could be anywhere. It involves an all too familiar approach of grouping separate house around two cul-de-sacs, using the garage blocks to make some link between the forms. There is no reference to either the street at the top of the site or the one at bottom left: both containing a mix of mainly Victorian terraces and semi-detached styles. The result is a large amount of site given over to road, edged by ambiguous areas that are neither properly public nor private. This approach also removes, or certainly takes little advantage of, the mature trees along the bottom of the site.



Sketch: Standard developer



Sketch: Designed

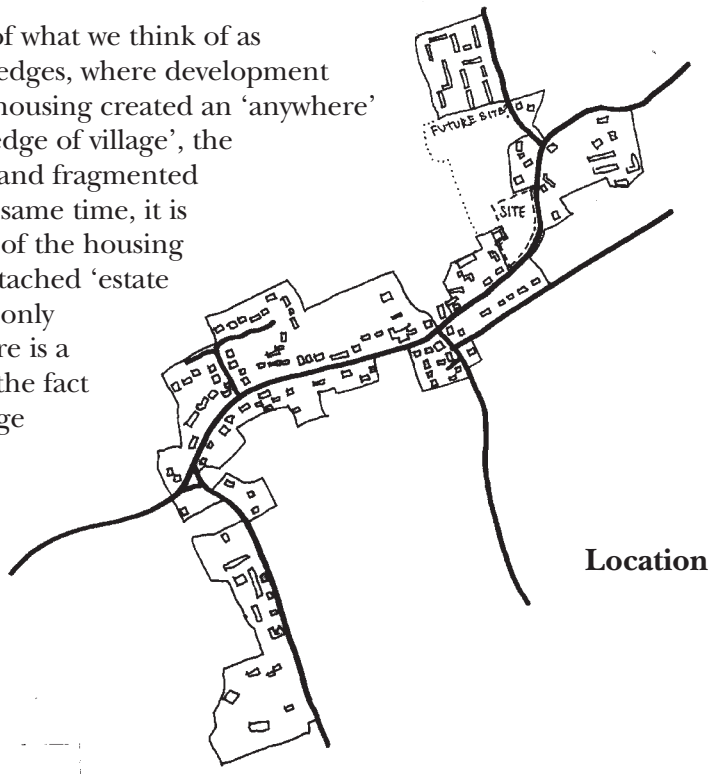
The basic principle behind the designed version is to use and link to both existing streets rather than to turn away from them as the above scheme does. So the block at the top of the site forms a frontage with the older properties opposite, and that on the lower part of the site continues the existing terrace to the right. This saves on road space and enables the area of good trees at the bottom of the site to be used more positively by interspersing parking between trees.

The basic building form is also complementary to the neighbours. It involves a mixture of short terraces and semi-detached houses, and also by having distinct front gardens with walls rather than open grass. The houses along the top are also in town house form incorporating garages at the ground floor. The density could be increased by using continuous terraces – an extra four houses – but this would not be quite consistent with the existing street pattern.

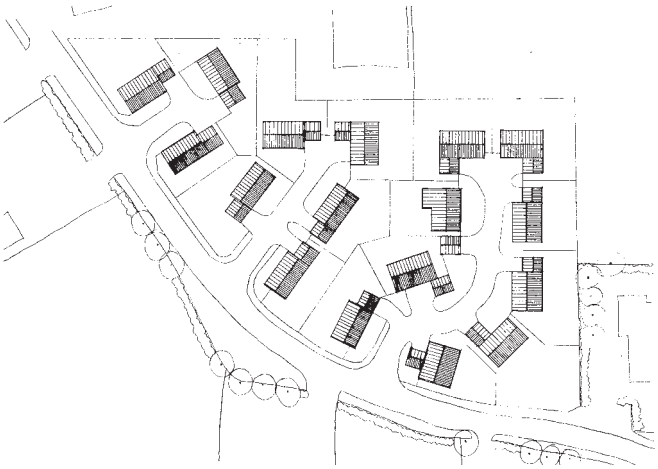
The site is almost 'backland'. It has only one face directly opposite neighbours, so it can be tempting to imagine that there is no need to link it in form and style to any surroundings. In fact, what backland sites need badly is something to tie them into their context. And then, oddly enough, densities can be increased without any negative effect at all. What this example shows clearly is that, for slightly larger sites, it becomes even more important to provide a coherent and simple form to the development, preferably one that relates well to its surroundings. Without this, the haphazardness of separate houses 'plonked' around amorphous cul-de-sacs clearly creates a perception of higher, rather than lower, density while wasting land.

Example three – Edge of village site

Not all housing sites are at the centre of what we think of as traditional villages. Some are near the edges, where development straggles out. And where more recent housing created an 'anywhere' feeling. In this particular example of 'edge of village', the whole village is itself rather strung out and fragmented (see right), so fairly low density. At the same time, it is generally very attractive because much of the housing is in the form of detached and semi-detached 'estate cottages'. Achieving high density, even only relatively, without damaging what's there is a genuine challenge; (made more so by the fact that all adjacent properties are very large detached, recent houses).



Location



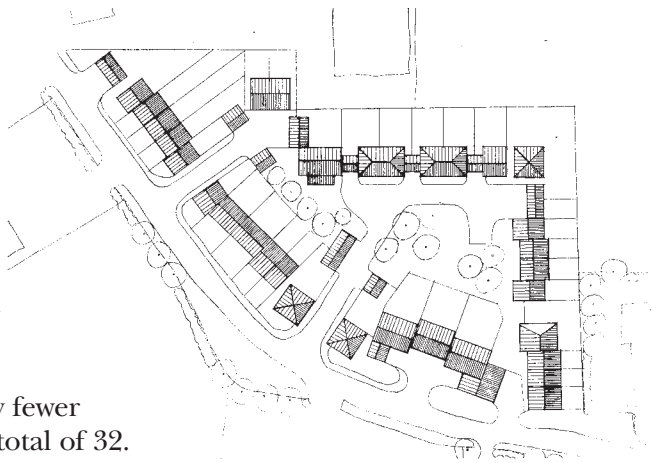
Plan: Standard developers

To the left is an imaginary developer's response (comments on the design are overleaf). What mix and scale – and density – of development does this generate?

The site is 1.05 hectare. This scheme includes 17 5-bed houses; that makes a density of 16 per hectare. They are all 5-bedroom houses providing seven bedspaces each. That totals 119 bedspaces or 113 per hectare. There is garage provision for 34 cars.

The alternative scheme (to the right), aiming to be more locally distinctive and higher density, rings the changes on several aspects in the developer's scheme.

First, it varies the house types. The scheme includes three 2-bedroom flats, seven 2-bedroom houses, 15 3-bedroom houses, three 4-bedroom houses, and four 5-bedroom houses. That is, 32 houses in total with a density of 30 houses per hectare. That mixture also generates 143 bedspaces, (or 136 per hectare). There are also slightly fewer car spaces and not all garages – this time a total of 32.



Plan: Designed

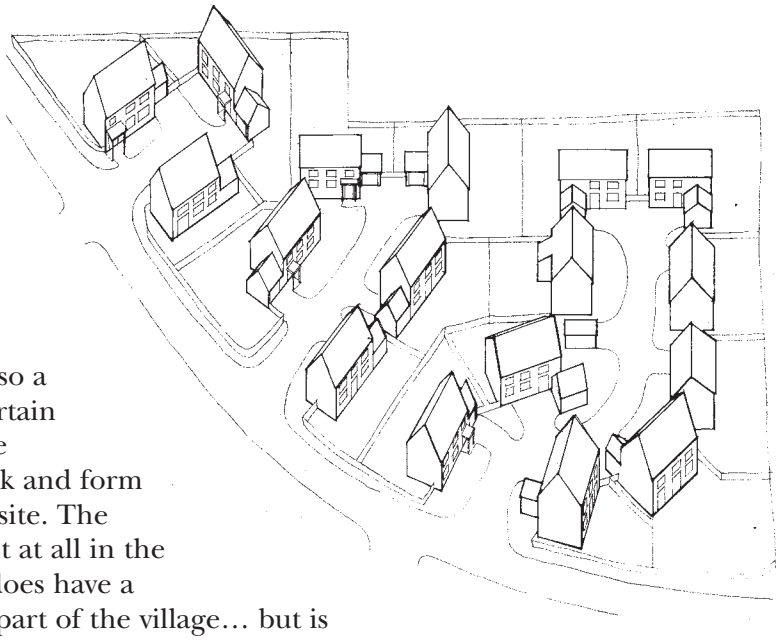
Although the 'houses density' has increased by nearly 80% from the first to the second scheme, the 'bedspace density' has only increased by 20% (with almost no change in the parking figure).

CPRE

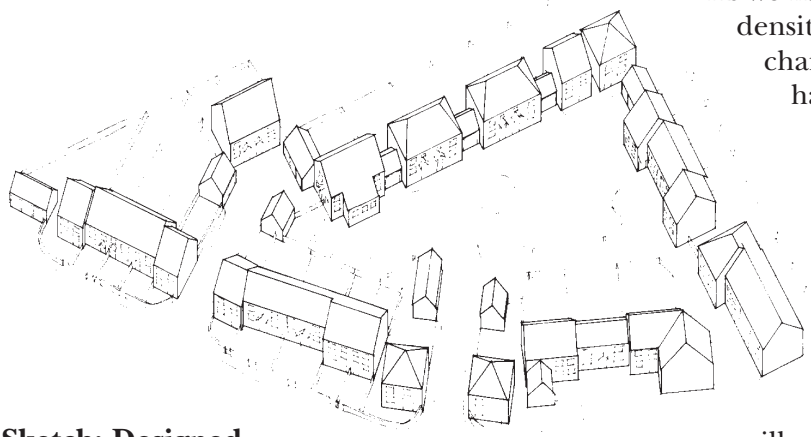
Your countryside your voice

March 2002

In design terms, this standard development (right) turns away from the street, leaving only blank garden and gable walls facing to the main road entry into the village. It offers an introverted cul-de-sac layout, made up entirely of standard large houses spread around in a familiar and monotonous pattern. There is also a large amount of road, with uncertain 'front gardens' and paths. All the properties are very similar in bulk and form with no real variation across the site. The general pattern has no precedent at all in the attractive parts of the village. It does have a precedent in some more recent part of the village… but is that the character one wants to celebrate and is it good use of land?



Sketch: Standard developer



Sketch: Designed

As we have said, the higher the density scheme (left) rings the changes at several levels. There has been a deliberate attempt to increase diversity by including a wider mix of house types. This has social value but also immediately prompts greater design diversity.

The key to the design is the character of the village's 'estate cottages'. Although these face the main street, they are not built close to it. The relaxed feeling is generated by giving the cottages generous front gardens. This is picked up in the higher density scheme (left hand stretch of road) but the scheme also picks up the village character of occasional larger properties with front yards (to the right of the drawing).

To some extent, what happens behind the frontage is now of less importance. The larger houses shown here retain the more formal estate cottage feel (cf. random spread in the developer's scheme) and that helps to reduce the length of road and amount of ambiguous 'front garden' space. It also manages (even at this higher density) to offer a small area of public green space.

Great care is needed in lower density, less formal areas of villages such as 'village edges' and also on some 'backland' sites. That does not mean – as we have shown – that densities cannot be raised, while still ensuring a compatible and locally distinctive design approach. It can still be done. The keys are house type mix, use of any street frontage, reduction of amount of road (and wasted spaces) and finally (not shown here), sensitivity to aspects such as materials and details.