Executive Summary

Planning Policy Guidance notes 3 (PPG3 – Housing) and PPG13 (Transport) were introduced in 2000 and 2001 respectively. These two documents seemed to imply that restraining household parking provision and increasing urban housing density would lead to lower levels of car ownership and use. Set against a background of rising car ownership and increasing demand for personal space this was always going to be a difficult ambition to fulfil.

The latest (draft) version of Planning Policy Statement (PPS)3, which will replace PPG3, has retreated significantly from the idea of restraining household parking; seeking only to provide "adequate" parking for household demand. Despite this, the drive for zero and low-parking high-density housing developments continues to be a mainstay of many local authorities planning policies.

This paper reviews relevant recent research connecting parking provision in new developments with car ownership and use. It describes much of the reasoning that must, in some part, have led to government policy changing between PPG3 (2000) and PPS3 (2006).

The results support the current Government view that parking restraint should not be seen as a means of seeking to reduce car ownership. Maximum parking standards for residential areas are valid, but should be seen as the result of reductions in car-dependency achieved by other means, not itself a major means of bringing about such reductions.

While residential parking standards thus have only a minor direct role in transport planning, they do have a significant indirect role through residential density and design, which is consequently described.

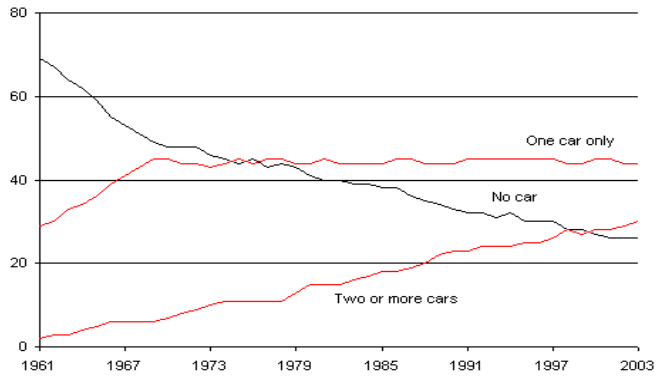
The paper concludes that the significance of parking as a demand management measure is much greater at the 'other end' of the trip generation process (-e.g. the amount and cost of parking at places of employment, retail and leisure facilities), and indicates that this has not received the Government attention that it deserves.

1 Introduction

Household car ownership in Great Britain is increasing. In 1961 there were fewer than 9 million licensed vehicles on the roads, by 1981 this had increased to 19.3 million, and in 2004 there were 32.3 million licensed vehicles in Great Britain1. As shown in Figure 1, below, the number of households with regular use of one car only has remained fairly constant at 45% since the early 1970's. However, the number of households with access to two or more cars has increased over this period, whilst those with no access to a car have declined2.

[1] Social Trends 36 2006 (National Statistics)
[2] Family Expenditure Survey and General Household Survey, Office for National Statistics; National Travel Survey, Department for Transport

Figure 1: Households with regular use of a car[2]



Against this background PPG3 and PPG13 for the first time proposed that parking provision should generally be subject to maxima, rather that the minima, which had previously been an almost universal practice. A widespread interpretation of PPG3 and 13 has seen local authorities reducing parking standards ever further, with significant numbers of developments now being proposed with zero parking provision.

Now, some five years after this guidance was first published it is perhaps appropriate to review the research that has taken place since 2000, and which has led to a significant change in government thinking in PPG3's replacement PPS3 (draft 2006).

The remainder of this paper includes the following sections:

- 2: PPG3 and PPG13;
- 3: parking provision and housing density
- 4: Residential parking policy – from PPG3 to PPS3;
- 5: draft PPS3;
- 6: conclusions; and
- 7: summary.

2 Planning Policy Guidance Notes PPG3 and PPG13

PPG3 (Housing) March 2000 and PPG13 (Transport) March 2001 were designed to create a sustainable approach to housing development; bringing about fundamental changes to planners' and developers' choices regarding the location and density of developments.

In transport terms this was to be achieved primarily through a combination of parking restraint and the densification of development, increasing the demand for public transport and improving its viability, thus encouraging modal shift.

The key elements of PPG3 relating to housing density are reproduced below:

Paragraphs 57 and 58 - Local authorities should:

- *"Avoid developments which make inefficient use of land (those of less than 30 dwellings per hectare net);*
- *Encourage housing development which makes more efficient use 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 or around major nodes along good quality transport corridors."*

Paragraph 51 - In relation to parking levels, the government proposed *"limited or no off-street car parking in areas with good public transport accessibility and where effective on-street parking control is present or can be secured."*

Paragraph 60 - The guidance introduced local authorities to the mandatory use of maximum parking standards, and also suggested that *"Developers should not be required to provide more car parking than they or potential occupiers might want, nor to provide off-street parking when*

there is no need, particularly in urban areas where public transport is available or where there is a demand for car free housing"

Paragraph 61 - Particular situations where this approach was deemed suitable included:

- *"town centres, where services are readily accessible by walking, cycling or public transport;*
- *housing for elderly people, students and single people where the demand for car parking is likely to be less than for family housing; and*
- *the conversion of housing or non-residential buildings where off-street parking is less likely to be successfully designed into the scheme."*

Paragraph 62 - It also gave guidance that *"Car parking standards that result, on average, in developments with more than 1.5 off-street car parking spaces per dwelling are unlikely to reflect the government's emphasis on securing sustainable residential developments."*

3 Parking Provision and housing density

Background

The Campaign to Protect Rural England[3] (CPRE) identify the link between car parking provision and development density, stating *"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".*

But it is important to remember that it is not just car parking that controls densities – people exercise choice, and often it is not in line with planners aspirations. According to a recent article in Planning[4] *"As high-density building becomes the norm, planners will be alarmed to hear that consumers are clamouring for ever bigger homes. The reason for this is not more space for their children to play or a bigger garden to grow their own vegetables. Furniture is to blame. Sofas and televisions are getting bigger and fuelling the need for more space…According to removal firm Cadogan Tate, the average sofa has grown by 1cm in depth and 30cm in width since 1978. Chair backs are getting taller, king-size beds are now the norm, even kettles and toasters are getting bigger."*

Nevertheless, according to the CPRE, 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.

This rhetoric is all well and good but very little research actually appears to have been conducted into how far residential density can increase. We are not seeing incremental increases, but step changes in the amount of housing that can be provided on a given site. Precedents from the 1960's should remind us that new ideas do not always work as expected. Great care should be taken to ensure that we are not creating the slums of tomorrow[5].

Defining density

PPG3 and PPG13 define density as households per hectare. This is not the only approach available; indeed some argue that much better definitions exist. CPRE[6] for example suggest that bedspaces per hectare may be a more suitable measure because it gives a closer approximation to the number of people who might be living in a development.

[3] Sprawl Patrol, CPRE, March 2002
[4] Planning, Minimalism takes a back seat, Diary, P52, 28.07.06
[5] Planning, the legacy of modern housing developments, Roger Tanner, P9, 21.07.06
[6] Sprawl Patrol, CPRE, March 2002

Density and parking requirements

These alternative density definitions may give a better understanding of the true built and visual density of a development. However, it is impossible to 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[3]. Density figures are, therefore, at best a starting point; the raw figures tell you very little about the number and demographic profile of potential occupiers and consequently even less about the number of cars likely to be owned and the number of parking spaces likely to be required.

This is demonstrated in the graph below, Figure 2, where the relationship between average density (households per hectare) and car ownership is explored[7].

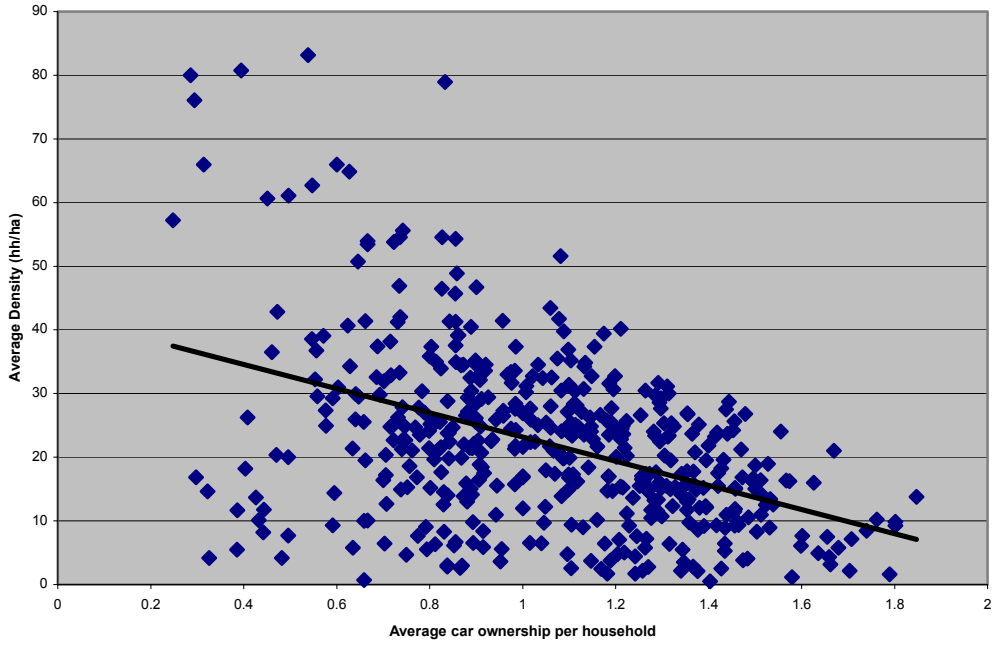


Figure 2, Average car ownership vs. average household density

Whilst a general trend appears showing that car ownership does on average decrease with density, the wide variation in results indicates that any relationship between the two is weak.

4 Residential parking policy – from PPG3 to PPS3

Public perception

Public acceptance is always going to be an important factor in whether a government policy will ultimately be effective or not. A recent CABE publication noted that the development control system faces political pressures from planning committee members, stating *"planning committee members will not usually stand up for an unpopular project, even when it is a high quality design"*[8]

Historic experience of restrictive parking

Older towns and villages achieve their much higher housing densities because people park on the road (or round the corner if the street is full). However, these older developments are often not without their own problems in terms of available car parking.

[7] Graph calculated from 2001 Census data for Census Output Areas in Ipswich
[8] The cost of bad design, Robin Nicholson (Architect), Essay, CABE 2006

Figure 3, the traditional (pre-car) approach to higher densities

PPGs 3 and 13 appear to advocate a return towards the traditional (pre-car) approach to residential developments, although increasing stress on on-street car parking is often viewed unfavourably by local residents, councillors, local authority officers and planning inspectors. Given peoples' experience of older housing, as shown in Figure 3, this is perhaps not surprising.

Lack of research

Despite government assurances that the policies set out within PPG3 would enable the creation of sustainable communities - and especially given the less than favourable public opinion of restrictive parking (unless it applies only to other people!) - it is concerning that these policies now appear to have been introduced without considering fully (or perhaps even partially) the impacts they may have on society.

A recent conference paper[9] identifies some fundamental gaps in research, including:

- no research on social impacts of restrictive parking;
- little research on on-street parking and accident rates;
- little research on tenure and car ownership; and
- little evidence of relationship with public transport provision

Furthermore, the purpose of maximum standards for parking provision has always been quite (deliberately?) vague. Depending on whose interpretation you listen to is it (a) an attempt to limit car ownership and use? (b) merely an attempt to avoid waste of land by provision above actual levels of demand? Or (c) a view that superfluous parking will *cause* higher levels of car ownership and use, undermining public transport and increasing car-dependency?

Local authority approach

Regional and local authorities have, therefore, been required to implement the government's policies without any real understanding of their purpose, of the best way to apply them, nor of their social and physical impacts. Some regions' RPGs (e.g. the North East and London) have tried to address the variability in car ownership and in alternatives to car use by setting standards within a matrix framework, which account for location, dwelling type and public transport accessibility. However, there does not appear to be any empirical evidence justifying the standards set nor the methods of assessing variables such as public transport accessibility. In Yorkshire & Humber (2000), by contrast, the matrix proposed included most employment and visitor attractions, but did ***not*** include housing precisely because it rejected the implied control of ownership[10].

Despite the view of key stakeholders[8] that access to public transport is the least important factor in determining parking requirements (after development mix, local context and type of parking), many authorities use accessibility as their primary variable in calculating parking standards. This

[9] Residential car parking – quantity and quality, MVA, TRICS conference 2005
[10] Regional Assembly for Yorkshire & Humber (2000), *'Policy paper C: Parking Standards'*, paper submitted to Public Examination, June 2000

is difficult to explain except in terms of local authorities' perceived (and often explicitly stated) purpose: that lower parking provision will reduce car ownership and use in favour of public transport – despite whatever central government might claim as the objectives of PPG3.

Most authorities use a subjective approach to calculating public transport accessibility, London however uses a *"consistent London wide public transport assessment tool"* PTAL[11] to determine permissible development densities and parking provision. Research into measuring public transport accessibility (for development control) suggests that the PTAL methodology has many serious drawbacks and that better alternative approaches exist (such as GIS based journey time catchment analysis using census population data and computer programs such as Accession) and should be considered[12].

Some evidence suggests that car use reduces as accessibility to public transport increases, and that therefore car-parking levels should be reduced as PTAL scores increase, to prevent overprovision[13]. However, it should be noted that a reduction in car use is not necessarily indicative of a reduction in parking requirements. It is possible that this link to accessibility could be solely due to increased journey to work trips by non-car modes, leaving other accessibility needs (such as weekend car use) unchanged.

Little relationship between public transport accessibility / mode share / car ownership

Indeed, other research[14] indicates that there is no apparent relationship between:

a) public transport accessibility (as measured by PTAL) and mode share, and;
b) car ownership and peak period car use.

This research also suggests that (in London) areas with apparently low levels of public transport provision have high levels of public transport use and can have car ownership levels significantly lower than 100%.

This research is particularly significant as it highlights that trying to predict likely car ownership (and thus parking demand) through simple linkages to public transport accessibility is unlikely to provide reliable results.

Parking restrictions

It is sometimes suggested by local authorities' officers that a restriction of off-street parking should be coupled with a restriction in on street parking (via Controlled Parking Zones, lease clauses, or otherwise); possibly to appease existing local residents' opinion that on-street parking stress will be increased.

If enforcement is required, it suggests that the developer and council have failed to minimise car parking but have restricted it below actual demand, thus requiring action that in effect controls car ownership. This control of car ownership via residential car parking is contrary to the stated objectives of the PPG3 and PPG13[15]. Nevertheless, it may be tempting for developers to sign up to these terms in order to gain a planning consent.

Growth in car ownership

These types of restriction in supply will not necessarily stem parking demand. Indeed, after five years of government policy reducing household parking provision through the planning system, car ownership continues to rise. Currently, average car ownership is in the range of 1.1 cars per household[1] and predictions indicate that by 2036 it will have reached an average of only 1.3 cars

[11] Transport Assessment best practice, Appendix B, PTAL methodology, TfL, 2006
[12] Advances in measuring public transport accessibility for development control – a proposed methodology, Capita Symonds, Transport Practitioners Conference 2005
[13] Report on the travel issues raised by the proposal to redevelop the site 432-434 Merton Road, Dunthorne Parker Architects and Servite Houses
[14] 21st Century London Living, TRICS conference 2004
[15] Better Streets, Better Places, ODPM and DfT

per household[16]; still well below the average car parking provision of 1.5 spaces per unit suggested by PPG3 and 13 as a maximum.

However, the *spread* of car ownership per household is also relevant– for example although the current *average* is 1.3, Figure 1 shows that 30% of households have 2+ cars, so depending on how the 1.5 spaces per household (PPG3 average) are distributed, there could be quite a lot of cars without off-street parking, even at the maximum provision. A key point is that nobody really has much idea how car ownership is related to household size (no. of occupants), still less to dwelling size (no. of rooms; which is the only available information at the time provision is being determined).

Supply and demand

Perhaps most significantly, MVA[6] found that ownership can still increase even where demand already outstrips supply. This suggests that restricting car parking below its required level is not a disincentive to car ownership, as is proposed by some transport planning professionals and as implicit in the rationale for maxima in many local plans.

Benefits of car ownership

Indeed, some local authorities' approaches to restricting household car parking do not appear to consider there to be any potential benefits to car ownership. Conversely, research[17] has shown that many non-car owners aspire to car ownership, a variety of reasons for this are given including:

- Comfort and security – people feel more relaxed and less threatened using their own car as reflected in comments such as " safer, easier for child commitments" and "public transport is dangerous at night";
- Time pressure – delays and waiting are seen by many as an integral part of the use of public transport and journeys by car are perceived by some respondents as a quicker alternative;
- Cars are viewed as being more convenient reliable and flexible;
- Several respondents cited the complexity of journeys using public transport and the number of changes required as being a strong disincentive to using public transport;
- Cars are seen as easier for transporting children, the elderly and large packages;
- Car travel is preferred especially by those who are night workers or whose work involves travel during the day as part of their working requirements;
- Disability.

Low impact solution?

Given the information presented above, the question must surely be asked, why would people to chose to live in developments with low parking provision rather than existing more desirable alternatives?

In areas with very good public transport accessibility, such as central and inner London, it is possible that the non-availability of car parking spaces may act as a disincentive to car ownership (especially the ownership of second cars). However, if the public transport is not good enough then restricting the amount of parking available is likely to reduce land value and occupancy (contrary to desires for greater intensity of land use).

In June 2006 it was reported[18] *"While demand outstripped supply, consumers were content in a rising market to 'take what they could find'. But as the market has begun to slow, it is likely that developments which have been pushed to the extreme by planners – fewer than one car parking space per home, social housing above 25% provision – are likely to struggle."*

[16] Tempro forecasts of car ownership growth, Great Britain
[17] No Parking, Genesis Housing Group et al.
[18] Property Week 30.06.06 "Car parking and carbon"

Even if a real market exists for high-density developments with limited household parking the impact of these policies are surely limited by speed at which the stock of housing is replaced (Approximately one percent per year)[19].

Clearly there are still some significant gaps in our understanding of the likely of impacts low parking provision. Not least of these is how low the provision can actually be before adverse impacts start to outweigh any potential benefits. Some recent research by MVA[20] may help to redress this balance.

Quantitative research

MVA's work indicates that a reasonable approach to quantifying the likely parking demand of a development is possible if account is taken of dwelling type, size and tenure. Figure 4 (reproduced from their paper), for example, indicates that car ownership varies significantly by size of dwelling for dwellings of more than three rooms. A typical eight-room dwelling has around twice the number of cars as a four-room dwelling

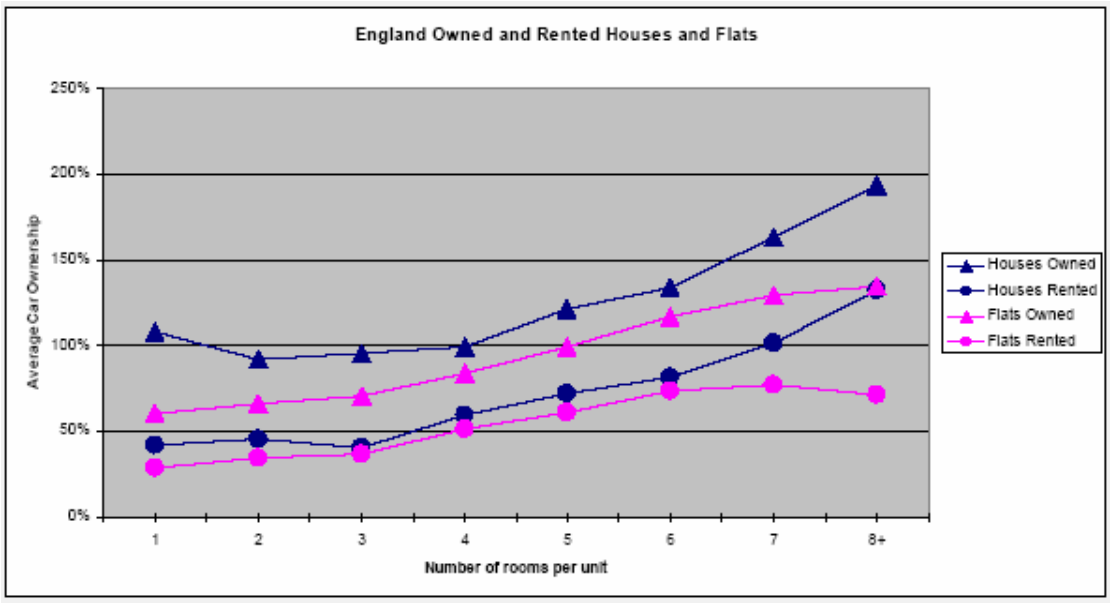


Figure 4, Number of rooms per unit vs. average cars per unit

Car ownership is also affected significantly by tenure. With, on average across the whole of England, owner-occupied households owning approximately 0.5 more cars per household than an equivalent sized and type (house or flat) renter occupied household.

They found that demand varies to a lesser degree by type of dwelling, particularly between dwellings comprising two to seven rooms per unit where the number of cars per flat is slightly less (around 0.1 to 0.2 cars per dwelling) than the number of cars per house of equivalent size and tenure.

Their census analysis indicated that whilst there is some regional variation, it is not necessarily as significant as one might expect. With the exception of inner London, only 0.2 cars per household (approximately) separated each variation of household type, size and tenure, between the highest (South East) and lowest (North) regional averages.

Allocated or unallocated parking?

Allocated bays can be on driveway, within garage (where over 50% of residents with a garage do not use it for overnight parking), or reserved in communal areas. Unallocated bays are available for anyone to use so should cater for predicted demand when looking at an average car ownership

[19] Kate Barker (2003) *'Review of Housing Supply – Interim Report'*, report commissioned by HM Treasury and ODPM, p26, para 1.30
[20] Residential car parking – quantity and quality, MVA, TRICS conference 2005

over an entire development. However, individual household's parking needs vary and if some spaces are allocated then additional spaces will be required. So, the key point is that you do not know which household will occupy which dwelling at the time of applying the parking standard to the layout

Example:
the average car ownership for 5 room houses is 1.1 vehicles per dwelling of which, on average, 19% have no car, 54% have 1 car, 23% have 2 cars and 4% have 3 or more cars.

- Therefore, if all spaces were unallocated, the demand would be **1.1** spaces per dwelling.
- BUT, if each dwelling is allocated 1 space, the additional demand would be:
  (1 x 0.23) + (2 x 0.04) = 0.31 cars/dwelling;
- Overall demand would be 0.21 spaces per household greater, at **1.31** spaces/dwelling

Visitor parking

Visitor parking has been found to be important to residents[21]. In general, the research indicated that visitor peaks were at evenings and weekends and were balanced to some extent by resident trips. It was recommended that if more than 50% of parking is unallocated that no extra provision should be made. However, if less than 50% is unallocated, 0.2 spaces per dwelling should be added.

5 Draft Planning Policy Statement 3 (PPS3) (December 2005)

Planning Policy Statements are gradually replacing Planning Policy Guidance notes; The relevant paragraphs (19 and 20) within the latest draft of PPS3, which will replace PPG3, are reviewed below, as they provide an indication of the government's intentions in relation to housing density and car parking provision.

Paragraph 19 - "*Local planning authorities should develop density policies for their plan area with local stakeholders and local communities, having regard to: the approach set out in Annex C; the need for additional housing; the need to use land efficiently; the impact on service provision and public spaces; the importance of promoting good design; the importance of resource efficiency; the minimisation of environmental impacts; and the desirability of maintaining the character of particular residential areas or environments. The presumption is that in developing density policies, the minimum density should be no less than 30 dwellings per hectare."*

Perhaps as a result of the problems that have been associated with an over-zealous interpretation of PPG3 by some local authorities and planners, and the recent research into demand for car ownership and its associated parking requirements, PPS3 retreats significantly from the PPG3 rhetoric of minimising residential parking provision.

Paragraph 20 - *"Local planning authorities should develop parking policies for their plan area with local stakeholders and local communities having regard to expected car ownership for planned housing in different locations, the efficient use of land and the importance of promoting good design."*

This likely requirement for planning authorities to have regard to expected car ownership could be achieved using data similar to that found in MVA's research (see Section 4). However, it could be interpreted that this is a move away from maximum parking standards; which is itself concerning, as this was perhaps the most innovative part of PPG3.

The efficient use of land relies (in part) upon car parking not being overprovided. To ensure that this occurs it would probably be better for planning policy place the onus on developers rather than planning authorities to *require developers' planning applications to demonstrate that their proposals cater for expected parking demand* ***but*** *do not provide more parking than is likely to be*

21 Jenks and Noble (1996), Parking; Demand and Provision in Private Sector Hosing Development (Oxford, School of Architecture, Oxford Brookes University)

necessary. This approach rather than a broad application of parking standards is likely to be far more successful in achieving the policy's aims.

6 Conclusions

PPG3 suggested that restricting household car parking below an average of 1.5 cars per household would promote more sustainable travel patterns. Ignoring the fact that many authorities have since tried to restrict parking well below this level (and in some locations are now only permitting development with zero parking provision), the use of averages like this in government targets is pretty meaningless. A one size fits all policy target is almost certainly detrimental to achieving the real objectives of a policy.

The indications of this research are that the PPG3 and PPG13 objectives of increasing housing density and minimising household parking are not in themselves unachievable. However the tendency of some practitioners to interpret this policy as a remit to reduce parking below likely ownership levels appears to be flawed.

Other means of reducing car use

A reduction in car use (and perhaps, therefore, car ownership) might be brought about by a variety of other policies, such as:

- choice of development location, which minimises the need to use a car to access a wide range of activities/services;
- improved public transport;
- travel Plans;
- car clubs;
- individualised marketing to encourage travel by public transport, walking and cycling; and
- provision for cyclists (secure storage and safe routes).

Thus, it would appear sensible to link development locations and permissible densities to public transport, walking and cycling accessibility so that unnecessary car journeys from the site can be minimised, and in particular so that journey to work can be made by public transport.

Making the right car parking provision

However, while restricting car ownership through residential parking provision appears to be both undesirable and unrealistic, sensible levels of car parking provision could be linked to dwelling type, size and tenure, a real possibility – as demonstrated by MVA's work[22].

One possible approach to reducing the land take of car parking – and thus removing one of the principle barriers to increasing densities – would be to provide at least some spaces for short cars only (i.e. one 4x4 can use over twice the space of a Smart Car). It may be more acceptable to people to replace their car with a smaller model rather than lose the facility altogether.

The onus of proving that car-parking provision is adequate, but not excessive, should perhaps be placed on individual planning applications. Each application can then be judged on its merits, rather than its adherence to parking standards that are likely to be broad and not always appropriate.

Reversing the logic behind reductions in household parking

Probably the key point of this paper is that the currently applied logic for reducing household parking provision should work in reverse. Much current practice implicitly works on the basis that: **lower parking provision**→lower car ownership/use→more public transport use→**greater sustainability**. The research set out in this paper suggests that: **greater sustainability** arises from better choice of locations, better public transport, making walking/cycling more attractive, car clubs, travel plans, and better design with more unallocated spaces→lower demand for car use →lower car ownership→lower demand for parking → **lower parking provision.**

[22] Residential car parking – quantity and quality, MVA, TRICS conference 2005

How can car use be reduced realistically? – some suggestions for further research

If it were more difficult to travel by car to key trip generators, such as workplaces, town and city centres, and other places with good alternative transport links then many car trips could be prevented. In London, travelling along a rail corridor by car takes so much longer than travelling by public transport (rail based) and parking is severely restricted. Consequently, most journeys of this type are made by rail with the connection at either end potentially supplemented by bus usage.

The need to reduce reliance on car-borne transport comes from a desire to reduce the negative environmental impacts associated with this mode of travel. Therefore there is clearly a need to reduce the number of trips – particularly during congested peak hours, as congestion exacerbates the negative impacts. Consequently, the real need is to reduce the number of journey-to-work trips by car, as these are the primary cause of peak period congestion and therefore per mile travelled are far more valuable to reduce than free-flowing off-peak trips.

A real benefit of this is that journey-to-work trips should be much easier to control than other types of journey. Many workplaces tend to be in places accessible by public transport from a variety of location and so are immediately at an advantage over other land uses.

If government is serious about wanting to use parking restrictions to reduce car-use, it would be more effective, and less open to practical and 'moral' objections, for them to support local authorities taking the approach outlined above. However, when Nottingham made what seemed a sensible start with its Workplace Parking Levy this was inexplicably excluded from the DfTs Transport Innovation Fund (TIF), only for far more complicated and unwieldy solutions to be trialled by other authorities.

These types of policy could, if the government so chose, be implemented very easily in areas of existing good public transport accessibility. However, a particular area of concern would be the avoidance of perverse effects i.e. promoting existing workplaces with significant parking availability and poor public transport links. Even this could be resolved though, with tax-breaks for encouraging (and achieving) modal shift through travel planning or relocation.

Perhaps corporation tax rates could be linked to mode share data in some way. This would then encompass all journeys to work, not just those that are influenced through the planning system (i.e. a very small proportion of overall journeys).

Town and city centres can sustain extremely large densities of employment. If policies led to employment locations gravitating towards town and city centres and left unoccupied office space away from transport hubs, these areas could be redeveloped for residential use, as long as good radial public transport routes existed to the local employment opportunities (although it needs to be recognised that once you start overloading radial public transport routes, they can be exceedingly expensive to upgrade, i.e. Crossrail). This could potentially reduce pressure on demand for greenbelt land whilst increasing the supply of land for residential development.

Whilst there is no such thing as a universal panacea, agglomerating land uses in compact cities with dense multifunctional cores can offer important economic benefits and creates highly liveable spaces as continental examples show[23].

[23] M Parkinson (2006) 'State of English Cities' report for ODPM

7 Summary

The principles of minimising car parking provision and maximising the use of available land, as promoted by PPG3 and PPG13 appear to be fundamentally sound. However, there should be concern with the speed and distance that some practitioners have taken these objectives. There is a vast difference between: well proportioned carefully designed housing and not over providing parking; and cramming as many units as possible onto a site and not providing any parking at all.

Recently, some authorities appear to have been adopting stances much closer to the latter approach than the former, much to the delight of developers who are, after all, interested primarily in maximising their profit.

Little research has been conducted into the long-term effects of this approach to development planning, although historical experience, and the little research that exists suggests, that extreme caution should be taken. This is particularly important whilst policy is moving in the opposite direction to market trends (increasing car ownership and living-space requirements).

Both PPG3 and PPG13 state that their objective is to reduce car use and not car ownership, although a lack of enforcement of this assertion (when government inspectors have reviewed regional and local planning documents) has allowed different interpretations room to grow. Car ownership is necessary for many groups of people. Research indicates that there is no apparent relationship between peak hour trip generation and car ownership and that there are many benefits to car ownership that cannot be replicated by alternative modes of transport. However, there does not appear to have been any significant research into how much car parking can be reduced without denying people the opportunity to own cars.

It has been shown that car ownership can increase even when parking demand already outstrips supply; it is no wonder then that the public are concerned about increased on-street parking stress (selfishly perhaps) whenever a new development is promoted.

PPS3 appears to take a more pragmatic, less prescriptive, view of residential parking provision stating only that "it should meet the predicted demand". One hopes that this advice will be heeded and that developments will have to provide adequate, but not excessive, household parking. Developments with zero or low parking provision should have to demonstrate that there is a real demand for this style of development.

A better approach to reducing unnecessary car journeys could be to introduce more fiscal constraint on the journey-to-work (i.e. either through Road User Charging for individuals or through workplace parking levies and the like), which would be likely to have a significantly bigger impact than the planning system's limited remit could achieve alone.