

# Urban design versus traffic regulation



Tim Pharoah has more than 35 years experience of transport and land use planning. He works independently and as a retained consultant for Lewelyn Davies.

In the last issue we published articles on 'mixed-use streets' by Daniel Moylan and John Dales. Urban design and traffic design have to be seen in context, says Tim Pharoah.

The move towards high quality urban environments, and away from characterless housing estates is accompanied by a range of advice and guidance on better urban design and street layout. But urban designers who attempt to promote quality streets and spaces with a genuinely "urban" character run up against traffic and highway planners with a different set of concerns. Frequently it is the latter who call the shots, and final designs are undermined by adherence to rules and standards that are inconsistent or even incompatible with the new principles of urban design.

This article briefly shows how some "best practice" principles of urban design can be inconsistent with the traffic principles that have guided more traditional housing layouts. Highway engineering and layout principles originally devised for safety reasons are now seen to impede the creation of high quality urban spaces, and ways of resolving these conflicts must be found. But there are important safety aspects of street and road design, and these need to be better understood by urban designers. Equally, engineers need to consider what is sensible rather than simply hiding behind the rule books.

I have chosen four issues where conflicts arise, and where satisfactory resolution requires better understanding by all concerned. This is followed by some brief suggestions as to how this might be achieved.

## 1. "Grid" versus "culs-de-sac and loops"

Residential layouts of the past half century have been characterised (or more accurately "de-characterised" by arranging house plots around culs-de-sac and loop roads that connect to main or distributor roads that have no frontage development. In terms of creating places of urban quality and character such layouts have been a disaster, though we must acknowledge that many people have bought into such areas, and apparently value the benefits they bring such as low traffic volumes and protection from strangers.

The call now is for streets which bring life and diversity, and accommodate housing densities at least twice those found in the average suburban estate. There is plenty of historic precedent for successful streets, and in all cases there are arranged in ways that provides easy and frequent connection between the. In other words, they are "permeable". To create permeability, masterplans from the leading urban designers more often

than not depict a "grid" layout where streets intersect at crossroads.

Grid layouts, however, conflict with an important principle of design for traffic safety, which militates against crossroads. From a vehicular traffic point of view the grid brings a number of problems, and these are of sufficient importance that grid layouts were all but abandoned from the 1950s or even earlier.

Grid layouts are potentially dangerous because only traffic regulations stand between drivers and collisions from the side. Priority has to be established for either one direction or the other direction to create a reasonable degree of traffic safety. In continental Europe a measure of protection is afforded by the default priority rule whereby drivers must give way to vehicles crossing or entering from their right (our left). This means that crossroads can be left "open" without priority markings, which is simply not an option in the UK. If we want grid layouts, therefore, we must be prepared to modify them to reduce the dangers of cross-movement. This can be done by managing the streets for different modes of travel so that, for example, at junctions one street is closed except for pedestrians, another has a bus gate, or opposing one-way streets remove a "straight ahead" conflict. There are many examples of such grid modifications throughout Europe and north America. The main point is that permeability and convenience is provided for those on foot, and less so for those in motor vehicles.

But to the highway engineer, the question is why build grid layouts and crossroads when they bring traffic dangers, and can easily be avoided in new developments? Here, then, is an issue where clearer understanding and common dialogue are needed.

## 2. "Traffic bundling" versus "traffic dispersal"

The pro-grid, pro-permeability argument runs something like this: Efficient access from all parts of an area to all other parts means creating a network of direct routes. This will encourage local journeys to be made on foot. Providing a choice of routes into and through an area means that traffic is dispersed rather than being funnelled through one or two distributor roads, and through a limited number of junctions. This avoids the creation of congestion hotspots, but also the need to create large-dimension roads and junctions, which also deter local movement on





A vision for Sloane Square (and below)

foot and can be very unsightly. Certainly, the grid format makes for a legible layout, easy to navigate whether in a car, on a bus or on foot or bicycle. There is an aesthetic argument as well, though not universally shared, that grid layouts produce a more "urban" character. The fine terraces and regular streets of areas such as Belgravia and Edinburgh New Town are called on to support the point.

The urban designer's aspiration is to create "permeable" layouts, and grid layouts in particular runs into other difficulties to do with traffic movement and impacts. With permeable layouts there will be frequent junctions and cross-streets, Greater permeability argues for smaller street blocks, but reducing the frequency of intersections to benefit traffic and pedestrians argues for larger street block sizes. In Portland, Oregon, street blocks are a mere 100 feet, compared to Barcelona's "Eixample" district with 300 feet street blocks. Where should the balance be struck?

A permeable street layout also means that all streets are potentially open as "rat-runs", thus spreading the noise, pollution and danger impacts throughout the residential area. This runs counter to the principles espoused in the Buchanan Report (Traffic in Towns, HMSO, 1963) whereby layouts created "environmental areas" from which through traffic was deterred and was "bundled" onto perimeter distributor roads. Milton Keynes is the largest scale example of this principle applied in the UK. The avoidance of rat runs and confining traffic and environmental impacts to a limited number of roads are the principal motivations for the standard distributor road and cul-de-sac layouts that still typify much new suburban housing. Concerns about security also have tended to limit the "ways through" provided for pedestrians in such layouts.

Freedom from disturbance and danger by traffic is indeed an advantage of such layouts, and this must be acknowledged in the creation of better streets layouts. So the issue is how much permeability, and of what type?

### 3. Narrow streets

Residential design guides (from DB32 onwards) argue for tighter street dimensions as a way of limiting traffic speeds and maximising site capacity. It is true that wide streets encourage speeding, and can look bleak. Narrow streets can encourage slower driving and are generally safer,

but where the carriageway is less than about 5.5 metres drivers find it difficult to pass and this can be counter-productive - drivers speed up to get to the end of the street before another car comes in the opposite direction.

Tight corners can have a good speed reduction effect, and establish priority for pedestrians crossing at junctions. Yet large kerb radii and wide visibility splays continue to be insisted upon, often with hugely damaging impacts on the overall street design, and creating unpleasantness and danger for people on foot.

The value of narrow streets can be questioned, especially where they serve anything other than a few dwellings. Wide streets allow better transport choices by enabling on-street parking in suitably structured bays, comfortable footway widths, and a "quality margin" for private open space or a verge or tree planting. (The commonly adopted minimum footway width of 1.8 metres is inadequate and is tantamount to an admission that few people will actually be walking.) For the more important streets, room for decent cycle lanes or paths may also be valued.

### 4. Parking

Parking, without doubt, is the factor that most challenges our ability to create attractive new housing. Standards of provision, such as the "average" figure in PPG3 of 1.5 per dwelling are widely and wildly misunderstood. In any case, it is not only the quantity of provision but the manner of provision that is important. Provision of dedicated off-street parking for individual dwellings is incredibly wasteful of space. Communal provision

is much more efficient, enabling demand to be met with an overall lower number of spaces. This enables either higher densities or more open space, or some combination of the two. Basement parking or other off-site communal provision is the best way of reconciling high environmental standards with high levels of parking provision. This is standard practice across much of continental Europe, so why can't we do the same? In my view all parking should be communal, and preferably all parking should be publicly available as well. This will make low overall parking ratios workable, and in areas with good accessibility will encourage lower levels of car ownership. This in turn creates scope for high quality residential and mixed use designs.

### How can we resolve these issues?

We need to end the litigation culture, or rather the fear of litigation culture, so that highway staff can play a more constructive role in the development control process. For their part, urban designers should take more care with layout between buildings, and develop a greater understanding of the traffic issues such as those outlined here. Planners should take responsibility for the highway, traffic and parking requirements in new development, and not just cut and paste the advice given to them by their highway colleagues.

Finally, the divided cultures of engineering, planning and design need to be tackled head on. Some consultancies have shown how this can be done, but the case for cross-disciplinary training is stronger than ever.

