DFID

TRANSPORT RESEARCH LABORATORY

TITLE: Towards good urban design

by: G Gardner and R Evans

Transport Research Laboratory
Crowthorne
Berkshire RG45 6AU
United Kingdom
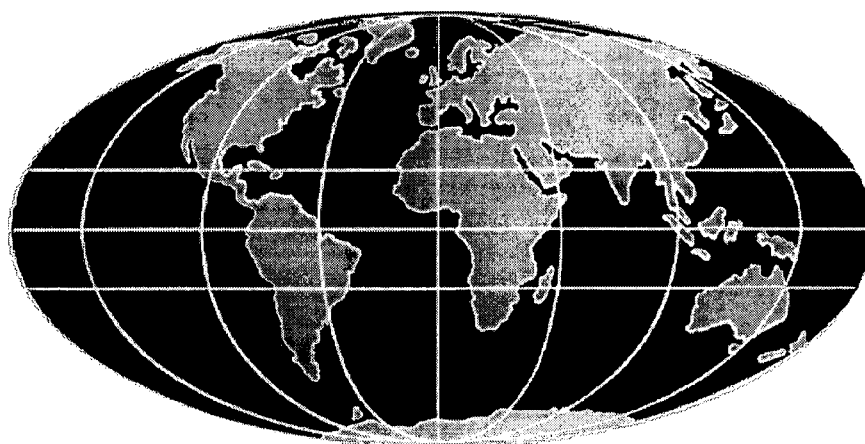
PA3379/98

PA3379/98   GARDNER,G and R EVANS. Towards good urban design. *World Conference on Transport Research, Antwerp, July 1998*

TOWARDS GOOD URBAN DESIGN.

Paper for 1998 World Conference on Transport Research.

by G. Gardner and R. Evans

The increasing emphasis on sustainable and integrated transport has been reflected in the need for multi-disciplinary working. Traffic and transport teams must now cover more than just technical and engineering aspects. This paper looks at the contribution of Urban Design to traffic management and transport planning. Urban Design goes beyond the aesthetics of individual buildings and considers the form and function of urban areas. Good urban design, in reconciling form and function, may well be aesthetically pleasing, but it can also improve urban viability in vitality.

A good solution in any field will be one that meets its objectives. Suitable objectives for urban areas throughout the world are those based upon sustainability, as endorsed by all nations at the Habitat conferences in Rio and Istanbul. How then can Urban Design contribute towards good, sustainable, urban areas?

At the strategic level, two trends of human settlement need to be addressed for sustainability, and quality of life, reasons. The first is the move towards the suburbs. Across the world, from Los Angeles to the home counties of England, those who have the choice are moving out of traditional urban centres. Although commuting back to the town centre is one result, Hall (1989) has identified a `doughnut' effect in which employers follow the workforce and also move from the centre to the suburbs. Travel patterns become peripheral rather than radial. This produces a vicious circle in which traditional forms of public transport lose patronage on radial routes, while being delayed by cars on peripheral routes.

In developing countries, meanwhile, the opposite is occurring. Migration to urban areas continues unabated, and the IBRD has forecast that major cities in India, for example, will grow by 60-90 per cent by the year 2015. In the absence of good urban design, this can lead to town cramming with people living at unacceptably high densities in cities where traffic congestion reduces economic efficiency and the quality of life.

At the regional level, the urban design approach, as recommended in the new TRL publication Guiding Good Urban Design (TRL 1998) is for decentralised concentration. A dispersed network of self-sustaining small communities is clearly preferable to a crammed and impenetrable (in all senses) city. According to research by sociologists an ideal neighbourhood will be around 1-5km in diameter (coincidentally these are comfortable walking and cycling distances, respectively). In a community of 6000 people is ideal in that almost everyone will be either a friend, or at least a `friend of a friend'.

> The need for an urban environment that is responsive is achieved through:
> þ   Permeability - so that people can go where they want
> þ   Legibility - so that people can understand their surroundings.
> þ   Robustness & Richness - the space should be flexible and interesting

Box 1: The Essential Requirements for Good Urban Design

The lengths to which people go to minimise travel time suggests that transport itself is not what is needed, rather it is the *access* to goods and services. A community, of any size, where all major requirements are available within walking or cycling distance will clearly be more sustainable than one in which a traditional master plan approach which has created single use zones that must be driven between.

Whatever measures are taken to minimise the need to travel, some form of transport will be required. The transport modes favoured by planners should be selected according to specific criteria. Some criteria can favour efficiency, others safety and environmental impact. Research by Fouracre et all (1989) and Gardner et al(1990,1993) has shown that an approach using mass transit and based upon the movement of people rather than vehicles will always be the most efficient. As the most sustainable modes are also the most vulnerable, then provision for them will enhance safety and the environment.

The private car is a very attractive mode for essential journeys for which no alternative is available. It is therefore understandable that universal car ownership should be a goal for people throughout the world. It is not the *ownership* of these cars that will destroy the environment, but their *use* which may in future years need to be restricted by fiscal means.

In the UK it has been accepted since 1963 that it is not possible to design cities to cater for

unrestricted car use. Freed from this limitation, urban designers can work towards the creation of urban space that is more `human' in scale. Ground breaking research by Lynch (1960) first defined what it is that people use to understand, and then to enjoy, the urban scene (Box 1). It is then up to an experienced urban designer to analyse these factors in an existing area, and develop methods for improvement. It is highly unlikely that in the improved scheme there will be a place for the tower block, so beloved by modernist architects and speculative developers. In its place the new TRL guide strongly recommends the perimeter block. This highly versatile layout lends itself to a variety of pedestrian-friendly layouts and yet, in certain Parisian arrondissements, can have densities to rival Manhattan.

Unlike the barren wasteland around high-rise towers, the space between perimeter blocks results in a network of streets at a human scale. Blocks can accommodate a mixture of uses that can make walking an attractive option. The legibility of a network of streets in a 'lattice pattern' and the availability of a choice of routes also makes these an attractive area to live in. Within a planned hierarchy, there will always be streets that are for people, not for cars. Social interaction in lattice networks is enhanced by the opportunity to meet others at the many street corners.

It is at the street corner where urban design and traffic management might appear to disagree, rather than meet. Networks with a lattice pattern are proven to have a higher accident rate than the more modern tree-shaped layouts with their emphasis on culs-de-sac. Although safer, however, the insularity and the lack of 'passers-by' in a cul-de-sac does not foster community spirit at the neighbourhood level. Fortunately there is a compromise, and it is one that works well with the aims of sustainability. The essence of a street corner is that it acts as a node, and a landmark, and as a meeting point and these are much more important for those travelling at a human pace. Therefore, the preferred approach is for the permeability of an area to be maintained for sustainable modes whilst closing through routes for car traffic.

The traffic square is a particular form of traffic control device that merits further attention. In this, junctions on minor residential roads are slightly larger than usual but have in their centre an island, similar to a roundabout, but not necessarily circular. Traffic entering the square will do so from one corner of the square and usually leave at the opposite corner. In extreme cases,

uncontrolled parking can be allowed in the square to further add to the calming effect. Previous attempts to calm traffic to speeds and flows that can accommodate sustainable modes have used horizontal or (worse) vertical displacements to reduce traffic speeds. The traffic square has the double benefit that it reduces traffic speeds, whilst concurrently making a junction an acceptable, even desirable, place to live.

Other features involving the careful manipulation of deviations and sight lines can be creatively used by a good urban designer to create a street scene that is compatible with the function of a street as social space and not just thoroughfare. It is also pertinent at this point to warn against the in-discriminant use of alien urban features. Although historic precedent exists for block paving in a Northern high street, for example, their use in a Dorset Georgian market place may be thoroughly out of character. The English Heritage Towns Forum provides guidance on this, and particularly warns against unthinking unchallenged adherence to engineering specifications.

There is a place for continuity of road design. The UK has one of the lowest rates of road accident occurrence of which it can be justifiably proud. If this has been achieved at the expense of freedom of movement and loss of urban quality for sustainable modes however, then this is an improvement that has not been achieved without cost.

The joy and pleasure of so many features in nature occur when form follows function. Good urban design, as promoted in the new TRL Guidance Manual, is an example of this in which there is much to gain, and little to lose.

REFERENCES

HALL, Peter, 1990. London, 2001   Unwin Hyman

TRANSPORT RESEARCH LABORATORY. Towards Good Urban Design. TRL/Roger Evans Associates, Crowthorne. 1998

FOURACRE P R, R J ALLPORT and J M THOMSON, 1990. The performance and impact

of rail mass transit in developing countries. TRRL Research Report 278. Crowthorne: Transport Research Laboratory.

GARDNER G, PR CORNWELL AND JA CRACKNELL, The Performance of Busway Transit in Developing Cities, TRRL Research Report No. RR329, Transport and Road Research Laboratory, Crowthorne, UK 1991.

GARDNER G, RUTTER JC and F KUHN, The performance and potential of light rail transit in developing cities. TRL Project Report No. PR69, Transport Research Laboratory, Crowthorne, UK 1994.

LYNCH, K (1960) The image of the City. Technological Press/Harvard University Press, Cambridge.