

11: Crossroads in the Buxtehude 20 mph zone, with raised plateau and corner extensions on alternate sides to create a lateral shift. The raised area is distinctively paved in red with white brick borders. (Photo: T. Pharoah)

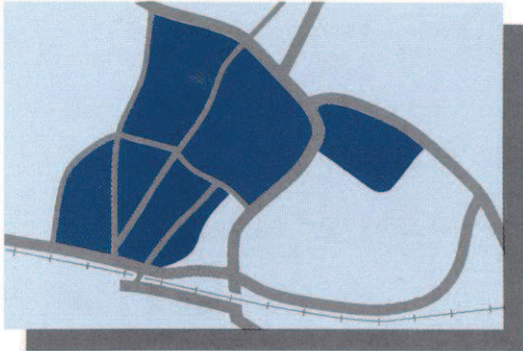
BUXTEHUDE - AREA-WIDE PROJECT - GERMANY

CONTEXT

Buxtehude is a medium-sized town (population about 30,000) lying 35 km west of Hamburg, Germany. The northern half of the town, with a population of 11,000 and including an historic town centre, was chosen as one of the six Federal demonstration projects for area-wide traffic calming. The scheme has been widely acclaimed as achieving all-round benefits at reasonable cost.

OBJECTIVES

The aim was to relieve some of the problems typical of a medium-sized town, namely: intrusion from a high density of



through traffic; danger resulting from high traffic speeds in residential areas; and a physical and commercial environment in need of upgrading. The aim was also to promote pedestrian and cycle traffic and public transport.

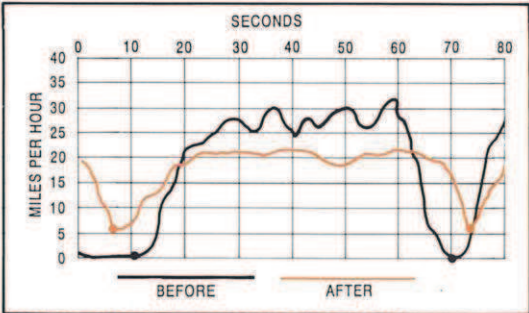
DESCRIPTION

The approach was to avoid the barrier effect of traffic streets running through the area by introducing measures to restrain or discourage traffic.

The area-wide scheme was implemented in two stages. The first stage



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REPRESENTATIVE SPEED REDUCTION IN ALTLANDER STRASSE



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was implemented at low cost and included a change of speed limit from 30 mph to 20 mph (apart from a central pedestrian zone and two "slow speed" areas), a change of priority rule at junctions whereby drivers must give way to traffic entering from the right, and some narrowing of carriageways using plant tubs and other temporary objects.

Stage two involved more permanent physical measures to create a self-enforcing speed limit of 20 mph, and to improve both the functional and aesthetic elements of the streets involved. This included the provision of new surfaces and lighting at all entrances,



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footpath and cycle crossings at important junctions, carriageway narrowing, redesigned on-street parking, and the creation of more and better facilities for pedestrians and cyclists. A planned third stage to exclude through traffic by road closures and barriers turned out to be unnecessary.

COST

The total investment up to completion in 1987 was about £1.7 million, or roughly £70 per head of population living in the area, spread over four or five years. The final cost per m² of road space (including footways) was about £4.60 at 1986 prices. One street (Altlander Strasse) was in need of reconstruction anyway, and this was carried out at a cost of about £40,000.

ASSESSMENT

Speeds have been reduced to an 85 percentile value of slightly more than 20 mph, but the measures enable a calm style of driving in third gear with low engine revolutions. This is considered to be within

12: Speeds are kept to 20 mph on this distributor road with a series of narrowings and flat top humps located where pedestrians need to cross. Speed reducing features are readily identified with the distinctive red and white paving. Planting and new lighting improves the overall appearance of the street.

(Photo: T. Pharoah)

13: This residential street has been closed to motor traffic except for access, and converted to a two-way bicycle road linking with the town centre. The effective width has been halved using planted areas on one side.

(Photo: T. Pharoah)



BUXTEHUDE MODEL PROJECT - KEY TO PLAN

MEASURES

- pedestrian zone
- 30 kph zone
- 50 kph streets
(Bahnhof Str. now 30 kph)

NARROWING

- one side
- both sides
- one side with ramp
- both sides with ramp



ramp



additional ramp/narrowing



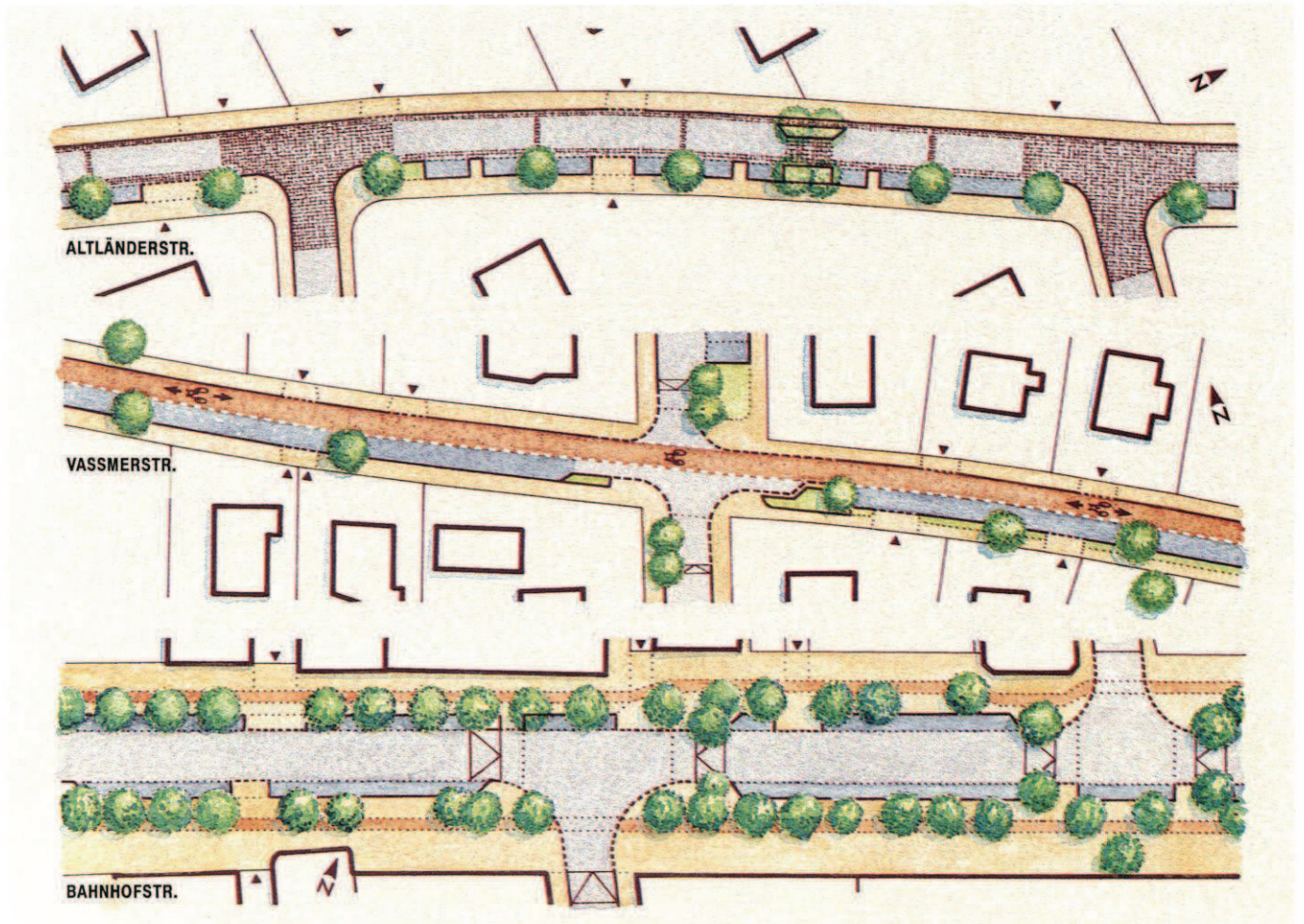
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cycle street (cars for access only)



Research measurement location



the spirit of traffic calming, and has produced considerable environmental as well as safety benefits.

Within the 20 mph zone, accident severity has reduced considerably, though the number of light damage accidents has increased. Cyclist accidents also increased compared to non-treated areas, though it is

not known whether this is due to increased cycling activity. Since the number of accidents is fairly low, the results can only be indicative of changes in safety.

Noise from passing vehicles has decreased by 4-5 dBA (equivalent to a halving of traffic volume) due to slower and calmer driving. Vehicle emissions have also

14: The footway and cycleway in Bahnhof Strasse are separated from the main carriageway by parking bays and a green verge with newly planted trees, which helps to reduce the dominating effect of heavy traffic. (Photo: T. Pharoah)



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15: Tree planting helps to create a boulevard atmosphere in busy Bahnhof Strasse, which also has a 20 mph speed limit. Shallow humps are provided at intervals, one of which is seen here being negotiated by a bus. (Photo: T. Pharoah)



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16: Footways and cycleways are kept at a continuous level across side roads and access ways, with ramped approaches to slow turning vehicles. The absence of any change of level is particularly comfortable for pedestrians with buggies etc., as shown here. (Photo: T. Pharoah)



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been reduced as detailed below, though petrol consumption has increased by 7%.
 Carbon Monoxide . . . 20%
 Hydro Carbons 10%
 Nitrogen Oxide 33%

Questionnaire surveys revealed a marked change in attitudes to traffic speed

after completion of the scheme. Drivers and residents were asked to say what speed they considered appropriate for residential areas and the results from the before and after surveys are as shown.

The traffic calming investment is also associated with an increase in Buxtehude's commercial vitality. Previous trends of decline have been reversed with more people shopping in Buxtehude and fewer people driving into Hamburg for this purpose. Environmental enhancement has also attracted more tourists to the town.

Appropriate speed in residential areas	Drivers		Residents	
	Before	After	Before	After
20 mph	27%	67%	39%	76%
30 mph	46%	6%	49%	7%