Certu

Basic road safety information

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Urban

▷Certu 2006/26

Pedestrians at the heart of urban public space planning

Walking must first and foremost be considered as a mode of transport in its own right, as giving priority to pedestrians in the planning of towns restores a safer, pleasanter and more convivial living environment. This approach is therefore favourable to the expression of local life and the development of all alternative modes of transport to the car, including cycling and public transport.

Pedestrian facilities are often designed as one-off solutions to resolve specific problems, without forming part of a coherent whole. After reviewing the issues around walking and the needs of pedestrians, this information sheet argues the benefits of a global approach based on the production of a Pedestrian Plan. A number of basic principles and technical measures are then presented to better cater for these users in urban public space design.

Better understanding of pedestrians

⇨Issues relating to this mode of transport

Walking is the second most widely used mode of transport in town: representing on average 20 to 30% of journeys (not including public transport or car journeys ending on foot). It is even the predominant mode of transport in town centres.

Pedestrians are greatly affected by road safety, as they are involved in a quarter of accidents and represent approximately a quarter of major casualties (deaths or serious injuries). Among these, children under 15 years old and the elderly are the most affected. In 2004, 60% pedestrians killed in town were over 65 years of age.

Pedestrians are also essential for the life of the town and for ensuring its economic and social vitality, and walking is an efficient, cheap, non-polluting form of transport that is also good for the health.

⇨The needs of pedestrians

Three main types of need can be distinguished:

1 – **Freedom of movement** : pedestrians travel short distances in all directions. They are very mobile users, who are to be found everywhere in the town. Their journeys are not restricted to a few well-established routes.

2 – **Practical links** : pedestrians move slowly. Consequently, in seeking to reach their destination as quickly as possible, they do not take kindly to diversions, or waiting at crossings.

3 – **Safety, security and amenity of routes** : hazardous itineraries from the point of view of the risk of attack or unsafe roads, or those of poor quality will not be used.

In addition to these, there are also some needs that are specific to certain pedestrians:

- **elderly people** have difficulty crossing the road, in particular because they move slowly.

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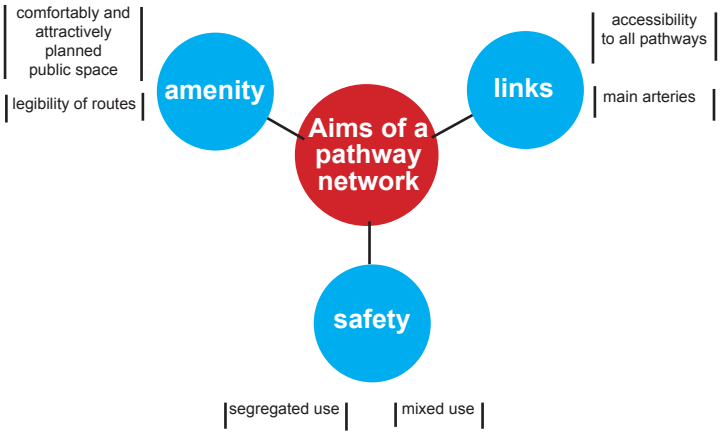
● **Children**, for reasons of morphology, perception and cognition, do not appreciate the complexities of road traffic as adults do. Because they are small, they can easily be obscured from sight.

● **People with reduced mobility** are faced with many obstacles that impede their mobility on a daily basis, such as high kerbs, haphazard arrangement of advertising signs, street furniture or shop stalls, obstructive parking, etc.

⇨The objectives of a genuine pedestrian network



The needs of pedestrians determine the requirements to be met by a network of pathways. These can be summarised as follows:

PROVIDING CONNECTIONS
This involves firstly identifying the main arteries used by pedestrians, those linking the busiest nodes of activity. These major links require particularly careful planning.
However, it also and especially means providing pedestrian access everywhere within the neighbourhoods, which in particular means removing all obstacles to movement, providing uninterrupted itineraries, creating shortcuts, etc.

PLEASANT ROUTES
The routes provided must be attractive if they are gong to be used, as pedestrians are very sensitive to the comfort and quality of their environment. Attention must also be paid to the legibility of routes.

ENSURING SAFETY
Finally, the third objective is to ensure safety of travel.

Not including pedestrian areas, which have their own specific characteristics, there are two possible approaches for achieving this:

1 – Segregated use on routes where motor traffic is largely predominant. On these routes, the pedestrians should be separated from vehicular traffic in such a way as to ensure their safety. Pedestrian traffic will be protected on the pavements (footpath) and pedestrian crossings will be organised and situated in safe locations, i.e. almost exclusively at junctions. These arteries can be estimated to represent 10 to 20 % of a town's network.

2 – Mixed use and the cohabitation of all modes of transport on other roads, i.e. the very great majority, in particular using speed calming measures. This planning solution applies to both relatively heavily trafficked roads and those with low or moderate traffic. The concept of the 30 kph zone is ideally suited to such roads.

A global and integrated approach

Walking is not catered for by constructing pedestrian facilities on an ad hoc basis, in response to specific, isolated problems without any overall vision

⇨Consistent urban planning and transport policies

Walking must be considered at a very early stage in the planning process, at the time of determining the town planning and transport planning policies. For example, the Urban Travel Plan (PDU) is proving to be a very useful tool for addressing the question of pedestrians within these issues and thinking about the proper integration and development of walking. From the more practical point of view, as walking is a local activity, coordination should essentially be achieved through «micro-PDUs» (neighbourhood level PDUs).

⇨A pedestrian plan for coordinating and planning the facilities

Considering pedestrians as users in their own right calls for a travel infrastructure that is adapted to their needs. It is therefore necessary to start by carrying out a general analysis of existing needs and problems for the whole of the town, or at least at a neighbourhood level. Analysis and discussion then lead to improvements which, in order to form a genuine pedestrian network, must form part of a coherent whole. Coordination and planning are therefore necessary. A few years ago, the city of Geneva successfully undertook such an approach, known as the Plan Piétons (Pedestrian Plan). This simple-to-adapt approach is not common in France and should be further developed.

The general methodology of a Pedestrian Plan

- **Identify the «generators» of pedestrian traffic and provide the links** (at least two levels of investigation need to be distinguished; that relating to local journeys within the neighbourhood and that covering longer-distance links).
- **Identify problems** in terms of insecurity, diversions, lack of continuity, loss of time, lack of comfort, etc.
- **Characterise the necessary actions** : type of action, level of urgency, actors and financing. At this level, coordination must be ensured with other works within the public space.
- **Programming** i.e. establishing priorities, initiating design studies then schemes.

Road improvements

⇨Basic principles

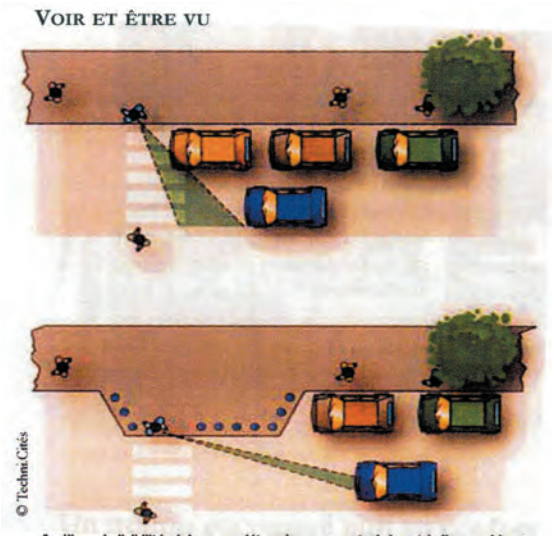
REDUCING SPEEDS

Controlling the speed of motor vehicles is essential for improving the safety of all users and most particularly that of pedestrians.

It is a fact that the chances of fatal injury to a pedestrian when hit by a vehicle are virtually always 100% at 70 kph, between 50% and 80% at 50 kph, and of the order of 10% at 30 kph.

It also caters for the full range of uses (residential, travel, trade, leisure, communication, etc.) and restores the city's role as a living space.

SEE AND BE SEEN



Improving the mutual visibility of pedestrians and motorists is essential for improving the safety of pedestrians when crossing the road.One solution is to add pavement build-outs along link sections or at junctions.

Visibility is essential to the safety of all road users, and particularly that of pedestrians preparing to cross the road. All obstacles that reduce or obscure visibility should therefore be removed, such a vehicles parked too close to a pedestrian crossing, poorly positioned street furniture or advertising, high vegetation, etc.

SHORTENING CROSSINGS

Another basic principle is to reduce the time of exposure to risk on the road. Possible solutions include traffic islands, neutralised central lanes, extended pavements, reducing the number or width of lanes.

ENSURING CONTINUITY OF ROUTES

This first of all implies clearing all obstacles from the pavement over an «effective» path width.

Congested pavements adversely affect the comfort of pedestrians as well as their safety when they are obliged to step into the road.

The accessibility provisions specify a minimum recommended clear width of 1.80 m. The legal minimum, for its part, is 1.40 m, which can be reduced to 1.20 m in the absence of obstacles on either side.

This also assumes locating road-crossing facilities to take account as far as possible of natural pathways and to lower the pavements in such a way as to better meet the needs of persons of reduced mobility.

⇨Answers to a few technical questions

Question 1 : ARE THERE SEVERAL TYPES OF PEDESTRIAN CROSSINGS?

There is only one type of pedestrian crossing according to the regulations. It is described in detail in the Interministerial Directive on road signs, Book I – part 7: *« ... Pedestrian crossings are marked by white rectangular or parallelepipedic stripes parallel to the centreline of the road, with a minimum length of 2.50 m in town and a length of 4 to 6 m in open country or where the road passes through small built-up areas. The width of these stripes is 0.50 m and they are spaced a distance of 0.50 m to 0.80 m apart, ..*

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It is strongly advised not to use bright red for these crossings: See circular of 16 May 1996 relating to the use of colour on the road.
It should be specified:

- that it is not obligatory to mark pedestrian crossings;
- but that, where they exist, pedestrians are obliged to use them for crossing, by virtue of the highway code, if they are situated less than 50 m in either direction.

Question 2: WHEN MUST A PEDESTRIAN CROSSING BE MARKED?

The marking of pedestrian crossings allows pedestrian traffic to be channelled to certain crossing points but will not under any circumstances improve the safety of a crossing that is deemed to be dangerous if not accompanied by other measures.
The criteria for locating pedestrian crossings can very generally be summarised as follows:

- **on main roads where vehicular traffic predominates,** it is recommended to locate pedestrian crossings at traffic light junctions, so as to make pedestrians cross at those points, which are considered safest;
- **on neighbourhood roads where car traffic and local life are both important,** it is recommended to provide sufficient pedestrian crossings, approximately every 80 to 100 m (taking advantage of road junctions) in order to meet the high crossing demand;
- **on neighbourhood roads where local life predominates over traffic (town centre shopping streets, 30 kph zones), and leads to «spontaneous» pedestrian crossings at any point**, it is recommended not to mark any pedestrian crossings but to leave the pedestrians free to chose their crossing points. On the other hand, the safety of crossing must be ensued, in particular by means of speed calming measures.

Question 3: ARE ROUNDABOUTS DANGEROUS FOR PEDESTRIANS?

Despite certain perceived notions, the statistics show that roundabouts are not more dangerous for pedestrians than other types of junction and in particular traffic light junctions. The size of the roundabout, on the other hand, has a significant impact on the distance the pedestrians are required to walk. It is therefore better to provide small roundabouts, which also encourage slower driving speeds.
In terms of safety, roundabout entries and exits should in particular be limited to one lane of traffic, and a pedestrian island should be provided on each leg.

Question 4: HOW CAN PAVEMENTS BE PROTECTED AGAINST THE INCREASING DEMAND FOR CAR PARKING SPACES?

Various solutions exist:

- firstly, ensure that the law is applied. Waiting and parking on the pavement are forbidden under article R 417-10 of the French highway code. This is the first tool that must be used;
- the second solution, wherever justified and possible, is to keep kerbside parking, . as this provides good protection to the pavement and does not obstruct the path of pedestrians;
- finally, the final barrier, physically prevent cars from intruding onto the pavement, e.g. by installing anti-parking street furniture. This installation must, on the other hand, guarantee the continuity of footpaths and the accessibility of persons of reduced mobility, and not worsen the proliferation of existing street furniture (streetlights, dustbins, poles, boards, telephone boxes, etc.).

Question 5: WHAT LIGHTING?

Like all public space users, pedestrians must be able to see and be seen, both at night and during the day, not only to get their bearings and find their way but also to anticipate potential hazards (obstacles, interactions with other users). Lighting also serves aesthetic and social purposes, that can give increased urbanity to public spaces. Facilities must therefore not only be well designed, but also combined with high quality of roadway and roadside lighting. It should be noted that general lighting is preferable to point lighting (e.g. limited to pedestrian crossings). This type of lighting can have negative consequences (black holes, non perception of pedestrians crossing away from the pedestrian crossing, etc.).

Question 6: WHAT FACILITIES ARE NEEDED FOR BETTER COMPLEMENTARITY BETWEEN PUBLIC TRANSPORT AND PEDESTRIANS?

To begin with, good pedestrian access should be provided to bus stops, which involves providing signposting, safe and comfortable access pathways and distance-reducing shortcuts.
Stops on traffic lanes or with a platform built-out from the pavement are recommended. This latter type of bus stop has several advantages: it makes the bus stop stand out and makes it easier for the bus to approach the pavement, improves mutual visibility of pedestrian road users and busses, prevents illegal parking at the bus stop. The bus shelter and waiting users do not obstruct the circulation of pedestrians on the pavement because of the reserved bus boarding area, an arrangement that ensures the safety of pedestrians when crossing.

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Generally speaking, pedestrian crossings should be located at the back of the bus stop for increased safety.
Finally, in addition to the dimensional aspect, the design of the bus stop must also cater for the comfort of waiting pedestrians.

Question 7: HOW CAN THE URBAN PUBLIC SPACE BE MADE FREELY ACCESSIBLE TO ALL?

There is a legal obligation to make the roads accessible to people with disabilities. Various laws and implementing provisions set out the terms of the regulations in this regard (cf. Bibliographical references).
For information regarding this subject, please refer to the information sheet concerning Persons of Reduced Mobility (PMR).■

Associated subjects

Three information sheets:
1 - Controlling speeds through design
2 - Persons of Reduced Mobility
3 - Visibility

Bibliographic references

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- Une voirie accessible (Accessible roads), Certu/DR brochure, November 2003.
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- Decrees No. 99-756 and No. 99-757 and the order of 31 August 1999 regarding *disabled access to public or private roads open to public traffic.* Circular 2000-51 of 23 June 2000 of the Ministries of the Interior and of Public Works, Transport and Housing (METL) *regarding the accessibility of public roads for disabled persons.*
- Act No. 2005-102 of 11 February 2005 on equal rights and opportunities, participation and citizenship of persons with disabilities.

http://www.ville-ge.ch/geneve/plan-pietons/index.html
http://www.walk21.com *Walking forward in the 21st century...*

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