



EUROPEAN
COMMISSION

Community Research



New Means to **PROMote** Pedestrian Traffic in Cities



Summary of the PROMPT project and its results



ENERGY, ENVIRONMENT
AND SUSTAINABLE DEVELOPMENT

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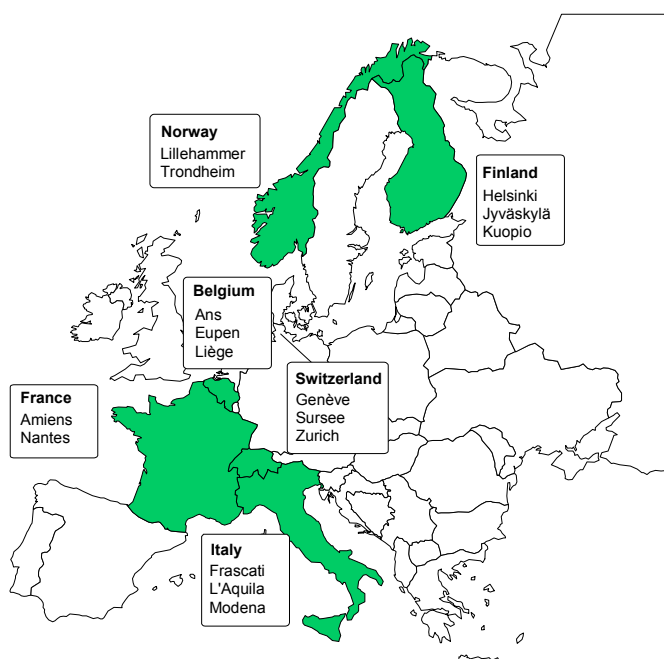
Case cities

Home pages of the project:

<http://prompt.vtt.fi>

Photos and graphs are from the partners' own collections.

Drawings: Lorenzo Urbani (Families of Solutions A1, A2, B1, B2, C1, E1, E2, F1, F2, F3) and Mario Tashi (Families of Solutions A3, D1)



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5th Framework—EESD, The city of tomorrow and cultural heritage



Promotion of walking in cities: Guidelines for decision makers, planners and designers of urban public spaces

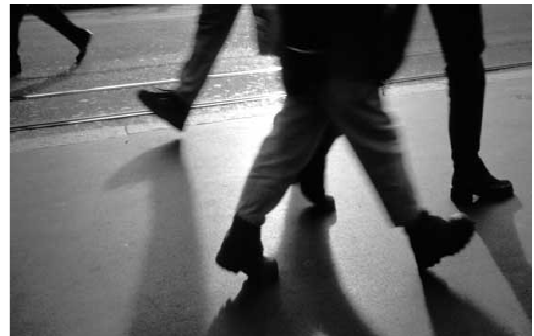
The main objective of the PROMPT project was to develop new innovative tools and solutions for use in urban planning and decision making for improving the conditions of walking in cities. Their scope ranges from the urban level to the detailed street level. They are aimed at problem identification, design and planning as well as at the implementation of considered measures in widely different situations

This brochure presents the main principles of the project. Furthermore, it gives an overview of the best practice examples and solutions presented in the *PROMPT Solutions Report* (in English). The *Solutions Report*, as well as some other project material, are available on the PROMPT websites <http://prompt.vtt.fi>.

1 Why promote walking?

Walking is our original and natural way of moving. It is the most harmless mode of mobility and is exactly the same for different social groups. The main purpose of the PROMPT project has been to improve the sustainability of urban mobility as well as to upgrade the liveability of urban environments by the promotion of walking. Increased walking is also expected to increase the use of other sustainable transport modes, like public transport and cycling, and thus reduce the use of private cars in general. All this will:

- abate harmful impacts of transport on the environment,
- improve the accessibility and quality of the public spaces,
- improve the health of the citizens,
- improve the social equity and inter-generational solidarity in the fields of mobility and access to urban opportunities,
- maintain and improve the urban heritage, as well as reinforce the cohesion between the city centres and their outskirts,
- reduce the costs of road investments, accidents, building repair, pollution abatements, etc.



2 How to promote walking?

As a mode of transport, walking is very difficult to predict because so many different factors have an influence on it. The essential aspects for deciding to walk or to use some other means of transport are the ease of the trip, the distance to the target, the available means of getting there, the trip purpose, safety, comfort and the pleasantness of the itinerary, as well as the accessibility of the target. Furthermore, one also usually considers the possibilities of combining several different trips for several different purposes. Other decisive factors are one's personal health and fitness, and anything to be carried.

Walking can be favoured, especially on shorter trips. Even for them, the use of one's own car is the probable choice, if it seems to be more comfortable and practical. Unfortunately, most children today are already accustomed to being taken to school by car, for several reasons. Walking can also be favoured as part of longer trips, such as work trips or trips to the city centre, if a good public transport service is available within short and comfortable walking connections. In this way, the use of public transport will also be promoted as an alternative to the use of one's own car.

In general, to promote walking means to improve all conditions for it. It is important that most of the factors affecting the decision are in favour of walking at the same time. For example, it is not sufficient that the route is short if it is not safe. Furthermore, awareness of the benefits of walking should also be increased through education and specific promotion campaigns.

How to find effective means and guidelines for achieving these objectives is what PROMPT has particularly aimed at. The objective has been to find a variety of best practice examples and develop new tools and generic solutions to promote walking, to be offered to the decision makers, planners and designers. The scope of these tools and solutions ranged from problem identification to their solutions. However, many different obstacles can be confronted in implementing these measures. These have also been considered in PROMPT.

3 Impediments to walking

An essential part of the whole PROMPT project was to reveal the problems with walking in the existing pedestrian environments. For this purpose, 22 case areas were analyzed according to five different themes. The analysis material is presented in national reports theme by theme and in thematic summary reports. The summary reports are available on PROMPT's website. More information on the case areas and the analyses can be obtained from the people responsible for the corresponding themes.

Lack of **safety** is one of the key issues impeding walking. High car speeds and interference with other traffic modes in general are the main safety problems. However, accidents caused by poor maintenance of the pavements are also significant.



Poor **accessibility** is another general impediment to walking. Unsuitable facilities for pedestrians crossing streets or getting to public transport stops are the most common problems. Other shortcomings are isolation caused by high-volume and high-speed traffic, segregated land-use, urban sprawl, centralised shopping malls and car-oriented city planning in general.

Comfort issues - i.e. a feeling of security and good walking conditions, like good lighting and surface, freedom from traffic or noise, sufficient provision of benches and other necessary facilities, etc. - are most important for people with mobility problems and for elderly people. Poor maintenance of the pedestrian routes is a common comfort problem.

Promotion of walking requires that the pedestrian environment must also be **attractive**. The environment must positively respond to the needs and desires of the pedestrians. In this respect, an intensive physical and visual impact of vehicular traffic and a shortage of appropriate pedestrian spaces are common problems causing a reluctance to walk. Other problems relate to the poor visual and functional quality of the environment, to its lifelessness or lack of natural elements.



The linking of walking with other modes of transport - i.e. **intermodality**, especially with the public transport system - is essential for promoting walking in cities. The main problem is a poor supply of public transport. One reason for that is too low an area density value. Other problems stem from poor walking paths to stops and poor stop facilities, or a feeling of insecurity at stops, especially at night.

4 Holistic solutions

Good solutions should solve all the relevant problems **simultaneously**, because partial solutions may lead to contradictions. The solutions must be holistic. One problem can be solved in many different ways, but, on the other hand, one solution can address several problems simultaneously. Solutions are also hierarchical, from general to detailed solutions. Thus all solutions can be grouped into intertwined 'family trees' of 'parent' and 'child' solutions. The revealed problems were composed in six more or less discrete **problem clusters**. All the solutions gathered according to these problem clusters, about 200 in all, were grouped into twelve **families of solutions**. These are presented in detail in the *PROMPT Solutions Report*. The problem clusters and their relevant solution families are:

Cluster of problems A:

A Lack of or scarce offer of physical and social space

- Shortage of physically and socially appropriate pedestrian spaces
- Poor maintenance and management of open spaces
- Poor infrastructure for the most vulnerable pedestrians (hindrances and barriers)

Families of solutions A:

A1 Give priority to pedestrians in transport planning



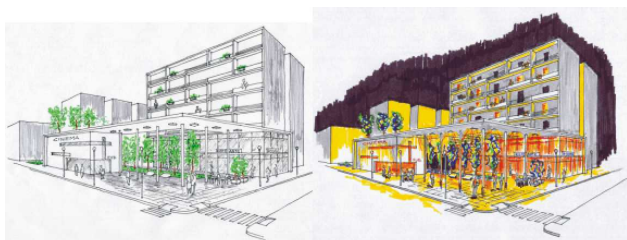
- 50 % of public space for pedestrians; priority to pedestrians
- A continuous and dense pedestrian network
- Good architectural design of the public spaces

A2 Each Municipality should have a pedestrian policy



- Establishment of favourable walking policies
- Training, education, dialogue, awareness of users' needs
- More investments in public spaces
- Follow-up of implementation processes

A3 Living streets day and night



- Mixed use in districts, public facilities along the streets, multiple use of public spaces
- Private and public spaces: appropriate continuity and separation
- Loose borders between buildings and streets

Cluster of problems B:

B Lack of equipment and services in outdoor spaces

- Lacking or inappropriate lighting
- Lack, deficiency or long distances of daily services, facilities and commercial activities
- Lacking or unsuitable urban furniture and equipment

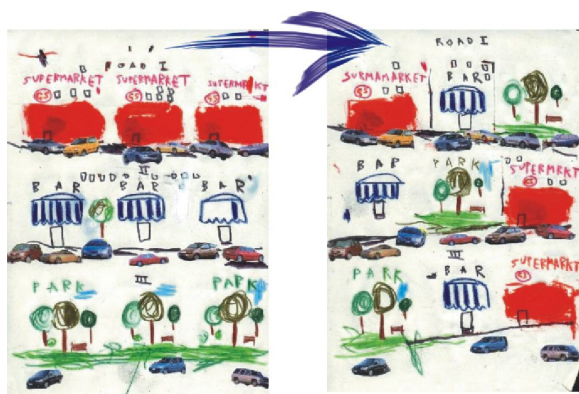
Families of solutions B:

B1 Public space as a living room



- Appropriate high-quality pavements
- Sufficient and appropriate urban furniture with good design and maintenance
- Differentiated and appropriate lighting
- Easy orientation
- Weather protection

B2 Implementation of policy regarding localization of facilities



- Shops, other services and meeting points at close range
- Set-up promotion of daily shops and services near the homes
- Prevent establishment of supply competition in city peripheries

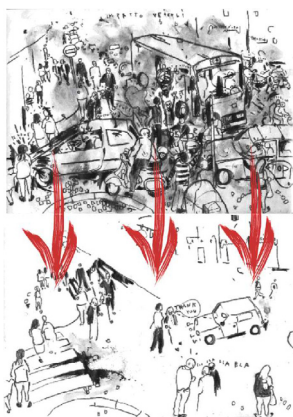
Cluster of problems C:

C Interference with motor vehicles

- Cars invading the pedestrian space
- Poor pedestrian network: discontinuity of paths and inappropriate crossings
- Physical, visual and psychological interference with vehicular mobility: speed and flow inconsistent with the pedestrian pace

Family of solutions C:

C1 In each development, consider that you have to move as a pedestrian and not only as a car driver



- Avoid through traffic
- Minimize traffic around schools
- Car-free residential areas
- Zones with traffic limitations, parking restrictions, use of urban tolls.
- Speed control by design
- Mixed use zones
- Give pedestrians general priority over traffic

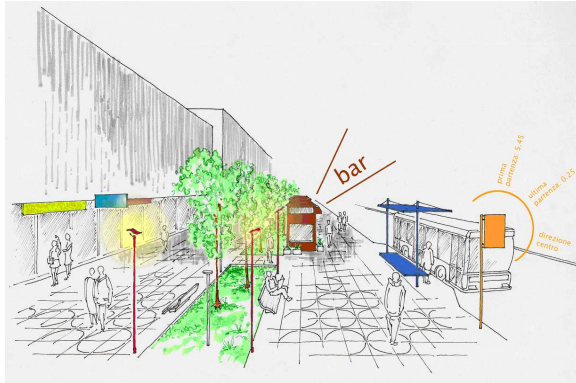
Cluster of problems D:

D Poor support by and connection to other modes of transport

- Poor public transport services
- Poor and unsafe crossings to bus/tram stops

Family of solutions D:

D1 Public transport for all



- Dense network of stops within short walking distances
- Direct pedestrian access to stops from all directions and for all users
- Secure and comfortable bus stops, day and night
- Attractive public transport supply

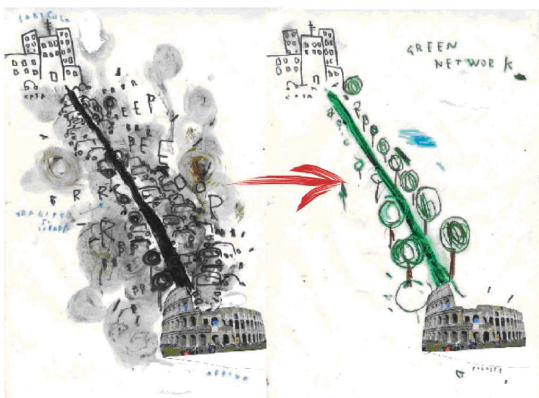
Cluster of problems E:

E Poor natural, architectonic and psychological features of the environment

- Insufficiency or lack of features enhancing the feeling of identity and orientation
- Inappropriate or monotonous material use, detail or finishing
- Lack or insufficiency of natural features
- Unfriendly or overwhelming built environment

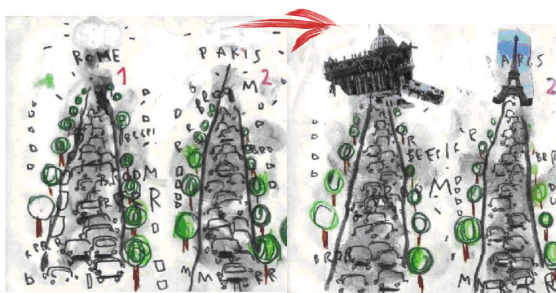
Families of solutions E:

E1 A green network in every city



- Built spaces mixed with green nodes densely interconnected
- Connections between green nodes by comfortable pedestrian paths
- Water and green elements, with their seasonal variation, integrated in the design
- Search for variety in design and utilization of green spaces

E2 Pedestrians always have to feel at home



- Design, materials, furniture and use of public spaces should enhance the local identity.
- Sequentially varied views
- Diurnal variations by lighting
- Essential and entitled pedestrian space

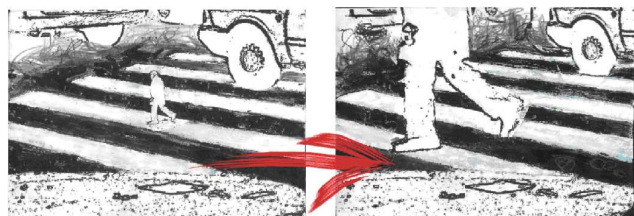
Cluster of problems F:

F Poor environmental performance

- Poor environmental response
- Insecurity

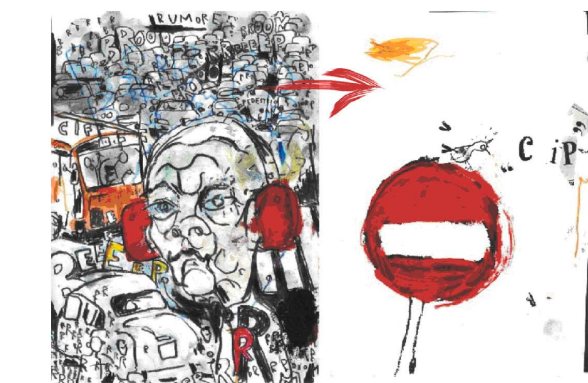
Families of solutions F:

F1 Integrate pedestrian scale in the city design



- City plans for people on foot
- Human scale and attractive detail design and lighting
- Manifold use of signs

F2 Noise control standards for outdoor spaces



- Urban planning and strategic measures
- Traffic management
- Creative design and land use planning for mitigating noise problems: barriers, low-noise materials, design of facades, disguise annoying sounds behind pleasant ones, etc.

F3 A clean and healthy outdoor space

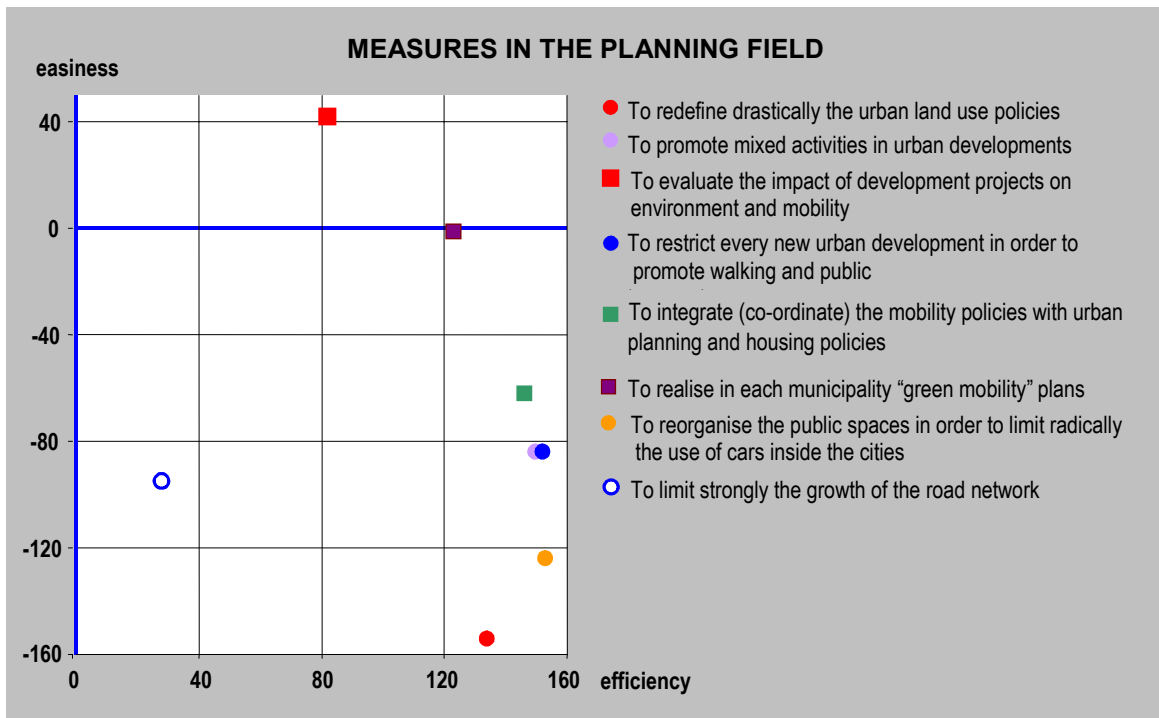


- Standards and strategies for controlling air pollution
- Separate waste disposal for dog faeces
- City planning and traffic management that promotes cleanliness and healthiness
- Appropriate waste collection and street cleaning
- Maintenance programmes and strategies
- Utilization of water and green elements

5 Obstacles and opportunities for implementation

Implementation considerations were also included in the project. Implementation of proposed solutions can encounter different types of resistance from the community, politicians or officials. For example, a solution can be judged as inefficient or too difficult to be implemented. Consequently, the aim of the project was also to provide a means for avoiding inadequate or uncoordinated interventions and focusing on reachable goals, taking account of the local political and technical environment. Several possible general interventions within the fields of **research**, **planning**, **operation**, **legislation**, **incentive** and **communication** were defined for this purpose. Their **easiness** of implementation and **efficiency** were assessed by an enquiry sent to stakeholders of the participating countries.

According to the results, it seems that in general the most effective fields of measures are the planning and operational fields and the least effective the incentive and communication fields. On the other hand, it seems easiest to implement measures in the communication, research and operational fields, while this seems to be generally most difficult in the planning field. Consideration of both the easiness and efficiency together suggests that one should, in the first place, concentrate on the operational and research fields. In the figure is an example of the overall assessment of the considered measures in the planning field.



6 Examples of families and solutions

A1 Give priority to pedestrians in transport planning

Give priority to pedestrians means to change the usual perspective of transport and land use planners: walking is one of the transport means, has to be considered as such and needs to be looked at as a privileged means of transport. In this sense, space has to be provided for, organized and designed.

A1.II Organize the space

The supplied space has to be organized with pedestrians in mind, both for moving and for resting, either for the activities they have, or they wish to perform. Spaces must be connected in a dense network that allows pedestrians to walk along a continuous route that, providing differentiated spaces, fulfils all various needs.

A1.II.1.1. Simple, efficient and dense schemes

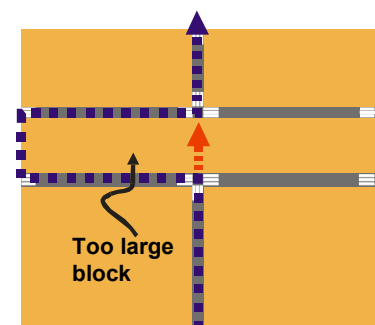
Description:

Pedestrian's movements are slow and need effort. The effort is highly dependent on the characteristics of the path such as height differences.

Recommendations:

A well-designed pedestrian network scheme must fulfil the following requirements:

- *Density of links:* a dense network allows users to always choose the shortest path to the destination, without excessive detours. Paths with outstanding appeal can be an exception to this rule. Detours can be a consequence of large building blocks, inaccessible areas or poor crossing facilities. These problems can be faced by creating shortcuts, using public space inside private buildings, and making methodical observations of users' behaviour.
- *Density of destinations and landmarks:* pedestrian networks must be short, or at least have to appear short to the users. To this aim, users



A poorly designed network in terms of its density.

should come across different points of interest along the paths: facilities, landmarks and attractions.

- **Legibility:** every “error” (in choosing the way) costs a lot of time and effort, therefore the network topology should help pedestrians in easily finding their way. Bad legibility can be a consequence of irregular schemes, of long distances and large spaces. A rectangular grid gives the easiest orientation capability also to non-residents, and can also offer shorter routes, if complemented with short cuts.
- **Ease of use:** the effort needed to move around is not only dependent on the length of the path, since pedestrians, and in particular the elderly and disabled people, are very sensitive to its steepness or the presence of steps. When other solutions are not possible, mechanical aids, such as escalators, may be used.



*Antique shortcuts from street to street through buildings.
Chambery, France*

A3 Living streets day and night

Streets can be alive day and night if a high quality of life is provided around the clock for every user of the public spaces, and, above all, pedestrians. This can be achieved by:

- I. Providing enough housing and variety of facilities and meeting points in buildings along these streets and their close environment.
- II. Secure and comfortable spaces between the private and public realms and by proper continuity and separation of those realms with varying levels of privacy.

A3.I Enough housing and variety of facilities and meeting points in buildings along streets and their close environment

More detailed means for this are:

1. Mixed use and a guaranteed minimum share of flats
2. Social mixture of people and events
3. Public facilities in every sub-district
4. Multiple use of public spaces for unofficial activities

A3.I.1 Mixed use and a guaranteed minimum share of flats

Description

Mixed use of buildings along the streets: sufficient share of flats on the ground and first floor and a high share of services and other activities.

Recommendations

- Minimum 50 % share of flats per sub-district
- Minimum 10 % share of facilities; shops, social services and meeting points
- Maximum length of uninhabited façades on the ground and first floors to be 50 m along 100 m of street.

Best practice example:

The co-existence of flats, shops and restaurants keeps the streets alive day and night.



Josefstrasse, Zürich, Switzerland

C1 In all developments, consider that you have to move as a pedestrian and not only as a car driver

This new approach calls for a complete re-thinking of the process, from the research to the implementation level.

New solutions for mixed traffic and the co-existence of different modes of transport should be studied, aiming at a harmonic cohabitation of pedestrians with other street users. It must be based on equity in user repartition, so that everyone respects the needs of the others. In this way pedestrians will no longer become heavily injured. This approach also needs to be supported by analyzing the possibility of giving pedestrians general priority over traffic, at least in the city centres and the residential areas.

C1.II Speed reduction of motor vehicles

The harmonic cohabitation of different road users cannot be ensured unless the speed of motor traffic is moderated. This is an essential condition for ensuring the safety of the most vulnerable road users, like pedestrians and cyclists. This would make it possible to share the road in a convivial manner, without a battle for the strongest.

To begin with, speed should be reduced by the layout of the streets. This can have a major effect on user behaviour. Other possibilities are to create 30 km/h speed limit zones, even for the whole city, and to develop special mixed traffic areas or, as a last resort, to use police control.

C1.II.4 Mixed use zones

Description

In some places, such as residential or shopping districts, some countries have developed intermediary concepts between pure pedestrian precincts and 30 km/h zones. In these zones, space is shared between all users, but pedestrians generally have priority and the speed limit is 10 to 20 km/h. There are nuances between these concepts. Examples are:

- “Woonerf” streets (The Netherlands)
- “Home zones” (Great Britain)
- “Meeting zones” (“zones de rencontre”, Switzerland)
- “Natural” co-existence (Italy)

Best practice examples:



“Meeting zone”, Yverdon-les-Bains, Switzerland



“Natural” co-existence, Frascati, Italy

E1 A green network in every city

The goal is that everyone can reach every part of the city on foot along pleasant paths with alternating "green" and "grey", and be independent of the car.

The aim is to create or enlarge the green areas within the cities (so-called "green nodes"). These should be fairly shared out with regard to the main urban activities and residential areas. Further on, all these green nodes should be interconnected by green paths (so-called "green corridors"), specifically planned and designed for walking and cycling. Means of creating such a network are:

- I. Built spaces interlaced with densely interconnected green nodes
- II. Comfortable pedestrian paths to connect the green nodes
- III. Water and green elements, with their seasonal variations, integrated in the design
- IV. Variety in the design and use of the green areas
- V. A clear hierarchy of the different green areas
- VI. Diverse roles given to nature in cities

E1.I Built spaces interlaced with densely interconnected green nodes

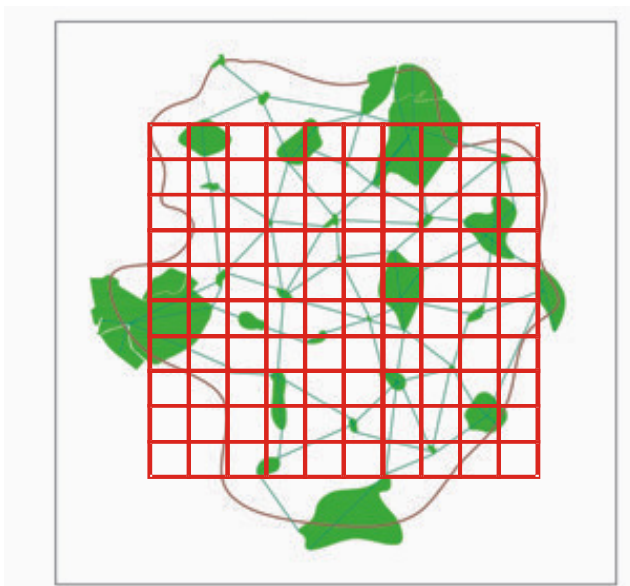
Description

A green network with a dense grid is an ideal scheme that has to be adapted to the local situations using the opportunities offered by the site and, at the same time, ensuring that every resident has direct access to this network. The objectives can be aimed at by:

1. providing a sufficient grid density
2. exploiting the existing natural green framework
3. exploiting urban wastelands, river banks and shores to create and enlarge the green areas
4. arranging the green spaces as closely as possible to the places of everyday life (maximum distance 200 m).

Recommendations for land use planning:

- Theoretical mean distance between two green areas should be about 400 metres.
- The catchment area of one green node should be about 200 metres all around it.



A diagram of interlaced green and pedestrian networks.



Eupen, Belgium

F1 Integrate the pedestrian scale in city design

Pedestrians have to be at the centre of the planning and design of urban spaces. First of all, planners and decision makers have to think like pedestrians, wishing to be happy while walking. The solutions should meet the needs of all the pedestrian groups, especially the most vulnerable. Taking account of these needs will also serve all the other pedestrians.

Both the physical and psychological needs should be met.

F1.III Pedestrian-friendly design

The pedestrian scale can be taken into account separately in the design of space, furniture and detail, which all affect the pedestrian's perceptual world. The height of buildings, width of streets and squares, details of facades, furniture, plantations, etc., must be designed according to the pedestrian pace and angle of view, and should correspond to the pedestrians' expectations and desires.

F1.III.1 Pedestrian-based space design

Description

Pedestrian views should vary and be interesting - and even exciting - and correspond to the pedestrian pace.

Recommendations:

- Avoid designing too long and monotonous buildings.
- The needs of different pedestrian groups, especially vulnerable ones like elderly, children, etc., should be taken into account in the design.
- Provide interesting views through a combination of old and new elements.
- Provide exciting views by splitting the path into separate segments.
- Utilize the terrain and surrounding landscape for creating exciting and surprising views.
- Consider the walking experience as a "movie" with varying scenes.

Best practice examples:



Liège, Belgium



Tallinn, Estonia



Nijmegen, The Netherlands



Lillehammer, Norway



<http://prompt.vtt.fi>