ARTISTS

Arterial Streets Towards Sustainability

"NATIONAL REPORT OF SPAIN. Chapter 1 and 2"

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INTRA

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1. SPAIN AND CATALONIA

This chapter will mainly deal with how road planning in Spain and Catalonia is being done, the financial structure and the most important changes experimented during the last years in the reorganisation of main roads and streets.

1.1 FORMAL / LEGAL AND TRADITIONAL ROAD AND LAND USE PLANNING

The street planning in a superior level in Spanish towns is basically made through the general land use plan for the municipality. Normally, no special mobility study is used for the general land use plans (no legal obligation) and the mobility as integrated part of the land use effects is not taken into account. Major municipalities have elaborated some special traffic transport and/or mobility plans but not through out as input to the land use.

At this moment, a proposal for a mobility act is discussed in the Catalan Parliament. They will oblige major municipalities (> 20,000 or 50,000 inhabitants, not decided yet) to elaborate Mobility Plans according to the objectives of improved sustainability and better public transport.

All road projects, road modifications and major investments which create mobility in the Catalan territory need an environment impact study, which include the possible negative effect of the traffic on the territory and on the residents.

In Spain, the legal instrument of road planning is the Highway Acts. [1]
By law, Autonomous Communities have complete competence on all roads within their territory, except those which are integrated in the State Road Network due to their general interest (those being international routes giving access to border crossings, airports or ports; or linking different Autonomous Communities.

Thus, each Autonomous Community has formulated its own Highway Act for the roads on which they have the ownership.

Of the total kilometres of Spanish road network, a 3,69% is owned by the Central Government, a 10,84% by the Autonomous Communities, a 10,49% by the Diputació (Counties) and a 74,97% by the Municipalities.

The Catalan law [2] defines the different authorities with competence and ownership over the roads. Therefore, in Catalonia different institutions have ownership of the roads: the Central Administration (the Central Government), the Generalitat de Catalunya (Autonomous Government), the Diputaciones (county councils) and the municipalities. There are 4 county councils in Catalonia (Barcelona, Girona, Lleida and Tarragona), and 942 municipalities.

The interurban road network is divided as follows: a 46% is owned by the Generalitat de Catalunya, a 37,5% by the 4 counties and a 16,2% by the Central Administration.

In Catalonia the Catalan Road Department (Direcció General de Carreteres) is the institution with responsibility in planning, coordination and the follow up on road policy. It takes care of the planning of the network, direction and management of the road projects, the construction, the exploitation, the conservation and the protection of the roads owned by the Generalitat de Catalunya and Diputaciones.

Also, the process of planning, construction, financing and exploitation (including the maintenance) of the roads is regulated by law (Catalan Government).

In the planning process, a preliminary proposal is made and is submitted to public information during 30 days and published in the official press of the Generalitat (Diari Oficial de la Generalitat) so that anybody can formulate claims and alternative proposals. This preliminary project has to be submitted to the affected administrations (Municipalities in the case of through roads).
After the month of public information, the formulated claims are answered and the road plan is finally elaborated and approved by the Parliament to begin its execution.
1.2 FINANCIAL STRUCTURE

Because Catalan roads belong to different institutions, all of these entities are financing the new roads, and have to invest a part of their budgets in improving them.

In general, and according to the law, a new road can have different kinds of financing:

- Directly by the institution which owns the road. In this case, the budget of the work has to be included in the general budget of the Administration.
- By public companies, created on purpose to take care of the financing and being authorised to contract public debts.
- Through administrative concession systems, in which roads are paid once the project is finished and the road opened, through road-pricing paid by users of road: compulsory payment of a toll.
- Due to private enterprise; private companies which take care of all construction expenses.
- In the cases in which the road gives access to a certain location and it is for specific users, the construction can be financed with contributions from the administration in charge as well as by special contributions from those who benefit from the new street. The corresponding percentage to these special contributions fixed by the law, depends on the type of street. For instance, as a general trait it’s a 25 %, and for streets with private access for homes or urbanisation it’s up to a 90 %.

Other elements, which form part of urban roads, as traffic lights, street lighting, information panels or traffic signs are financed by the road owner and are implemented and maintained by companies specialised contracted by the administration in charge of the road.

The following table show the percentages of the investments and the origin of the incomes related to the different public entities in Spain [ 3 ]:
Financial organisation | Percentage of arterial street construction budget
--- | ---
Local road administration: Country councils and Municipalities | 6.7% 
Regional road administration: Autonomous Communities | 28.4% 
National road administration: Dirección General de Carreteras (General Road Authority) | 57.3% 
Public agencies | 7.6%

Table II Origin of Funds

1.3 RECONSTRUCTION EXPERIENCE AND TRADITION

**Individual design elements**

Road markings
In all roads of new construction or restructuring, road markings are painted. It is a not expensive measure, with a flexible application and this permit a better-organised traffic.

New arteries created after the demolition of buildings
In many cities, there exist roads which were opened (in accordance with the land use plan, general or local) after the expropriation and the demolition of buildings, which in some cases were buildings now considered historic, with some architectural value...
The demolition of the building was usually provoked by the need to continue longitudinally a road, aligned with an already existing one. This is not a usual practice nowadays.

New arteries in non-build up areas
In non-build up areas, the arteries are constructed according to the land use plan.

Regulation and signing of intersection
Depending on the kind of intersection, it is regulated with traffic lights or only with signs and road marks painted on the pavement: pedestrian crossings among others.
Green wave
In important roads (arterial) with not too long distance between the traffic lights these are co-ordinated to obtain a continuity of green band for vehicles.

In the case of Barcelona, for example; there is also a believe that this continuity should be applied to public transport, i.e. public buses and trams, and there are already tests implying GPS to know the situation of the vehicle and the start of green of the traffic light at the arrival of the bus/train.

Roundabouts and other kinds of intersections (new ones and reconstruction)
In Spain, the implementation of the roundabout began not more than 20 years ago.

Today it is one of the most used elements in new or reconstructed roads, when there are two roads or more that intercept, for urban roads as well as highways, when space permit it, where speed control seems needed, where fluent traffic in two crossing is recommended and with few pedestrians.

In urban roads, in some cases, it is possible that there is an “abuse” of this type to resolve an intersection and roundabouts have been implemented in places where another kind of intersections were possible and equally valid.

There is a series of norms layouts which define the different kinds of roundabouts, specific signs, etc, edited by the Ministry of Public Works.

Many arterials in middle sized towns are owned by higher road authorities, which reject the use of light signals on their through roads.

Parking – parking prohibition, legal-parking, etc.
Another of the proceedings most used in streets is the parking regulation; often prohibition of kerb parking in some stretches. In arterial streets this is most often used, especially if the road authority is superior al municipal.
Another parking measure, basically in larger cities, tourist areas or in commercial streets, is the implementation of paying parking places, (parkmeters) at kerb and with limited time. It is called “zona azul” (blue zone).

Usually the limited time is from 1 to 2 hours, the price by intervals of 5 minutes, and outside the established hours of regulation, the parking is free of payment.
This is a measure that generally is disapproved by the residents in the areas in which is implanted, but highly used in comercial areas in order to improve short time parking.

**Lane marks: more or less traffic lanes.**
In the last years, the number of traffic lanes has tended to diminish, and /or the width of lanes from 3,5 m (road design) to 3,0 m (urban design). The width gained is often used for the enlargement of the sidewalks or in some cases for motorbike or car parking.

**Trams**
In some Spanish cities there used to be tram networks until the mid sixties, but due to a series of reasons these were substituted by urban buses. This took place in Barcelona, with a history of trams of about 100 years, which happened to have an extensive network until its complete elimination of this transport system in 1971.

Actually, in several important Spanish cities we find new projects of implementation of trams as a way of improving public transport and give an alternative to the demand of mobility. Nowadays, in Barcelona city two new tramlines are being constructed (the first shall be operative at the end of this year), and there is as well several tram projects to be approved.

In Valencia city, there are since some years ago a couple of tramlines, which function successfully.

**Segregated bus lane**
Segregated bus and taxi lanes are only found in major cities; and they are not always continuous through the whole street even if the buses need the measure in order to avoid the traffic congestion and maintain regularity.

This is an option which nowadays slowly is being implemented, although with difficulty, because it implies the elimination of a lane for private traffic.

**New bus services**
By law, cities of more than 50,000 inhabitants must have urban bus service. This has provoked, in recent years, the creations of urban bus lines in several medium-sized cities. In towns with less than 50,000 inhabitants the municipality has decided to start urban lines even if the cost is relatively high for the Town’s Hall’s budget.

New bus lines have also been created in big cities, to meet the social need and as an incentive for not using the private transport.
Pedestrian streets
During decades, pedestrian streets are the model most frequently used in urban centres where the street network is being reconstructed.

The change in the typology of the streets (transversal continuous pavement, traffic restrictions, priority for the pedestrians, specific signals, etc.) is quite successful.

In the traffic plans in several cities it is foreseen that streets with special characteristics (width, traffic intensity, and so on) will be reconverted into pedestrian priority streets or streets of combined mobility.

Bicycle lanes
Even if the number of cyclists is very limited, presently there are kilometres of cycle lanes in most large and medium-sized cities, with a quite uniform criteria (type of pavement, security elements, location of the cycle lane: sidewalk or pavement, ...). Implementation of cycle lanes is a reality in many Spanish cities.

Right now the idea is to extend or create new cycle lanes a measure in order to improve sustainable mobility. Politicians under pressure from cyclists organisations have accepted to define a policy of implementation of lanes as a measure to encourage the use of the bicycle, as well of providing an appropriate infrastructure to bicycle users.

There is also the intention of creating interurban networks of cycle tracks, which can connect towns, using the non-urban spaces as the riversides, old railway in disuse, etc.

Road humps to reduce the speed
At present it is quite usual to find the implementation of speed reducing road humps in certain long street sections. The humps are needed to lower the speed of vehicles passing through, and implicitly to improve road safety.

The humps are set up in already existing roads with high or low traffic volume, in city centres, and near schools and hospitals.

In new or reconstructed streets in city centres, these humps are created with continuous humps in the whole transversal section with continuity of the pavement and often there is information of its existence by way of vertical road signs and transversal road markings.
Sound-reduction pavement
Traffic noise is an important problem in Mediterranean cities. Due to its high cost, the substitution of the standard pavement for one with high porosity and with sound reduction properties only takes place, but with success, in urban streets with high levels of traffic and in certain municipalities. Especially in Barcelona city, a major programme with sound reduction takes place these years.

Greenery
The incorporation of trees or plants along urban streets is a highly successful measure, because it is often the only “green” present in the streets. The streets in Mediterranean cities are fairly hard. Wider sidewalks permit plantation of trees.

Accessibility to public services (public transport and public buildings)
The Catalan Government approved in 1991 a law for accessibility which affects public transport, public buildings, and streets network. Therefore, ramps should be constructed following defined standards (maximum slope, minimum width,...) to facilitate the access for people with reduced mobility.

In all the streets which are renewed, ramps have to be constructed to access the kerb, the accesses to underground lines must have elevators, and pull-down ramps in the case of buses. This is a measure which is being progressively integrated in all cities and transport systems.

Location of waste containers
The collection of household waste pass through containers located on sidewalks or on carriageway (normally in a parking lane). The containers are normally grouped next to the households: normal household waste, paper, glass and plastic. These containers are difficult to maintain organised in a specific place. Especially those for general household waste with wheels may change place-creating problems for pedestrians and/or drivers.

New container systems under street level, and therefore very expensive are under experimentation in Barcelona and a few other cities. Lack of street space will probably increase this type of systems in coming years.

Location and type of pedestrian crossings
Till now, a certain restriction in the location of pedestrian crossings have taken place. The basic idea of stimulating the car traffic has resulted in elimination of natural crossings (facilitate turn movements) and in moving the crossing point to a 6-10 m distance from the straight pedestrian walking line. This measure facilitate turning cars. These actions lead to less use of
the crossings by the pedestrians and to an increase in indiscipline. These problems can not be solved without a political decision implying changes in priority between drivers and pedestrians.

In some municipalities, elevated (at sidewalk level) pedestrian crossings in arterial streets have been installed as a special measure to control too high driver speeds.

**Street furniture – public lightning**
In many cases, street furniture, electrical poles, kiosks, telephone cabins, signs, etc., have been located in the sidewalks in a way that the pedestrians cannot walk comfortably.

This problem can be solved enlarging the sidewalks combined with new types of street furniture not invading the minimum needed pedestrian space.

Public lightning is normally posted on the sidewalks even if is will normally not light up the sidewalks but only the carriageway. This problem is under way to be solved in some Catalan towns with special lightning for the pedestrians.

The following table resumes the general traffic planning experience in Spain, the present point of view of the different projects, and if today it is a valid option for the artery authorities.

| Scheme on arterial streets | Experience | A realist option today (yes/no)? | Today’s view?
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Road/Street Markings</td>
<td>Road markings are painted in all roads of new construction</td>
<td>Yes</td>
<td>Minor success</td>
</tr>
<tr>
<td>New arterial streets in build up areas</td>
<td>It is not very usual</td>
<td>No, some cases</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>New arterial streets in non built-up areas</td>
<td>It is not very usual</td>
<td>No, some cases</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Implementing of signal-control at junctions</td>
<td>It is usual</td>
<td>Yes</td>
<td>Major success**</td>
</tr>
<tr>
<td>Green waves through signalised junctions</td>
<td>More fluently mobility.</td>
<td>Yes, some cases</td>
<td>Major success for car drivers. Not for bus</td>
</tr>
</tbody>
</table>
### Scheme on arterial streets

<table>
<thead>
<tr>
<th>Scheme on arterial streets</th>
<th>Experience</th>
<th>A realist option today (yes/no)?</th>
<th>Today’s view?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>passengers and pedestrians</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Round about</td>
<td>Better safety and more fluently mobility</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Prohibit car parking</td>
<td>Usual practise</td>
<td>Yes</td>
<td>Minor success</td>
</tr>
<tr>
<td>Legalise car parking</td>
<td>Higher mobility</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Marking of car bays</td>
<td>Improvement for pedestrians</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Parking tolls</td>
<td>Improvement for pedestrians</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>One-way to two-way traffic</td>
<td>It’s not very unusual</td>
<td>Yes, in some cases</td>
<td>Minor success</td>
</tr>
<tr>
<td>Two way to one-way traffic</td>
<td>It is usual</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>More traffic lanes</td>
<td>Higher mobility</td>
<td>No</td>
<td>Minor success</td>
</tr>
<tr>
<td>Fewer traffic lanes</td>
<td>Improvement for pedestrians</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Traffic closures</td>
<td>Improvement for pedestrians</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Streets without kerbs</td>
<td>Easier mobility for pedestrians. Improved safety. Lower vehicle speed</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Closure of tramlines</td>
<td>The last tram lanes in Barcelona disappeared at the end of the 70’</td>
<td>No</td>
<td>Major failure</td>
</tr>
<tr>
<td>New tram lines</td>
<td>Presently the construction of new tramlines is promoted in the biggest cities</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Closure of bus lines</td>
<td>It is not unusual</td>
<td>No</td>
<td>Minor success</td>
</tr>
<tr>
<td>New bus lines and services</td>
<td>New lines are created to attend actual mobility need</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Closure of cycle lane/track</td>
<td>Only few experiences in Spain.</td>
<td>No</td>
<td>Minor success</td>
</tr>
<tr>
<td>New cycle lanes/tracks</td>
<td>New bicycle lanes and tracks are created. Networks are created to improve continuity</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Narrowing footways</td>
<td>Higher mobility for cars. More parking space</td>
<td>No, in seldom cases</td>
<td>Major failure</td>
</tr>
</tbody>
</table>
### Scheme on arterial streets

<table>
<thead>
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<th>Experience</th>
<th>A realist option today (yes/no)</th>
<th>Today’s view?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widening footways</td>
<td>Higher and improved mobility for pedestrians. Better safety</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Pedestrians streets</td>
<td>Higher mobility for pedestrians. Better safety</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Pedestrians crossing</td>
<td>Better safety for pedestrians</td>
<td>Yes</td>
<td>Major success</td>
</tr>
<tr>
<td>Road humps</td>
<td>Speed reduction effect</td>
<td>Yes</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Chicanes</td>
<td>It is not very usual</td>
<td>No</td>
<td>Mixed attitudes</td>
</tr>
<tr>
<td>Median / median islands</td>
<td>Better safety for pedestrians</td>
<td>Yes, few times</td>
<td>Minor success</td>
</tr>
<tr>
<td>New greenery</td>
<td>It is usual</td>
<td>Yes</td>
<td>Major success**</td>
</tr>
<tr>
<td>Accessibility to public services</td>
<td>Higher mobility for all street users.</td>
<td>Yes</td>
<td>Major success</td>
</tr>
</tbody>
</table>

**Major success is planned for all street users: pedestrian, bus passengers, cyclists and drivers**

### Source of information

The most important source of information about road and street design is found in public publications from the Ministry for Public Works that usually edits specific norms and guides with recommendations for urban street design. Some of these publications are those mentioned in the references [4] to [6].

Some Municipalities and the Federation of Municipalities have also edited their own norms and recommendations for street designs, including different aspects: from the street layout till signing and street furniture or the vegetable spices more appropriated for every situation. [7].

It is also possible to some information about urban arteries in academic publications and in specific publications from architect/engineer associations.

In the following tables we can see the different sources of information and the real use of that information.
<table>
<thead>
<tr>
<th>Way of accumulating knowledge about arterial streets</th>
<th>Extent (none, little, some, a lot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines by national organisation (non-political)</td>
<td>A lot</td>
</tr>
<tr>
<td>Road standards and guidelines by national agency (cross party)</td>
<td>Some</td>
</tr>
<tr>
<td>University /college textbooks</td>
<td>Little</td>
</tr>
<tr>
<td>Research reports and reviews</td>
<td>Little</td>
</tr>
<tr>
<td>Local policies based on previous local experience</td>
<td>Little</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Used accumulated knowledge about arterial streets</th>
<th>Extent (not used, used seldom, used sometimes, used most times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidelines by national organisation (non-political)</td>
<td>Used most times</td>
</tr>
<tr>
<td>Road standards and guidelines by national agency (cross party)</td>
<td>Used sometimes</td>
</tr>
<tr>
<td>University /college textbooks</td>
<td>Used seldom</td>
</tr>
<tr>
<td>Other research and consultation reports and reviews</td>
<td>Used seldom</td>
</tr>
<tr>
<td>Local policies based on previous local experience</td>
<td>Used sometimes</td>
</tr>
</tbody>
</table>
2. CITY OF GIRONA

In this chapter we will treat the regulations (different types of land use plans defined in the Land Use Acts – State and Regional Parliaments) and street use regulation, which regulate the mobility and the land use in the urban areas of the city of Girona.

2.1 POLITIES AND RATIONALES

The city of Girona uses different norms: plans, bylaws and traffic regulations and land use regulations, which are related with the urban arteries:

- General Land Use Plan (PGOU) approved the 28th February 2002.
- Municipal Traffic Bylaw, approved the 26th June 2001.
- Municipal Bylaw regarding Citizen Cohabitation and Public Street, approved the 23rd July 1996
- Bylaw concerning Advertising and Installations for advertising, approved the 2nd July 2002.
- Plans and norms for a sector of the city (the old quarter): special conservation plan and interior reform of the old quarter of Girona, approved the 28th July 1983, by the County Council Land Use Commission and the Municipal Bylaw of the old quarter of Girona and other catalogued buildings. Approved the 8th January 1991.
- Technical project for the implementation of the bicycle lane in the basic street network, as an instrument of traffic management. April 1998.
- Recommendation of green routes in urban and non-urban areas – biological corridors.

There are other plans related to activities developed in public roads, installations which are located in the street, ... as for instance the Municipal Regulation of Internal Rules for markets in the Public Road, the Ordinance relative to gas pipes on façades; the Technical-Sanitary bylaw about Hygienic Conditions in establishments and shops selling food in the streets; and the Bylaw which regulates the Conditions of Installation of certain Public Establishments dedicated to the restaurant industry, performances and / or recreational activities ...

General Land Use Plan (PGOU)
The PGOU is one of the planning instruments which all medium and major municipalities must have. Thus, the objective of the Girona PGOU is the urban planning of the municipality. The plan has the characteristic fact of being original (it does not need to be previously approved by other superior entities). It classifies the soil depending on its legal regime (in urban soil, new urban land and land designated as not for urbanisation); It qualifies the land (uses and intensities of the land use) and it fixates the conditions for the growth of the city.

The objective is to define and incorporate new infrastructures and gives new criteria about planning.

It determines future actuation on new urban land, areas for services, city equipment, and it marks the infrastructures and services as parkings and basic road network.

In their proposals there is the definition of new urban infrastructures, ways to facilitate the implementation of new equipment to cover the city needs, definition of soil as land for urbanisation, ...

Municipal Traffic Bylaw

This bylaw refers to the municipal competence in subjects as the ordinance of traffic of people and vehicles in city streets, always acting under the basic rules of autonomous and state acts and regulations, following the European application guidelines.

The bylaw is structured in different chapters each dedicated to a subject: signing, obstacles, pedestrian mobility, vehicle parking and stopping, tow away and immobilisation of vehicles, pedestrian areas, general traffic measures, loading and unloading of goods, passenger transport, school transport, bus stops, bus terminals, restricted uses of streets, circulation of heavy vehicles and dangerous goods, driving under the effects of alcohol and other substances.

Some paragraphs from this bylaw can be indicated:

- Maximum vehicle speed: “the speed with which vehicles are driven in the urban area have to respect is generally, and even without special signalling, of 50 kilometres per hour, except for those vehicles with dangerous goods which can only drive at a maximum speed of 40
kilometres per hour, and cycles and mopeds at a maximum speed of 45 kilometres per hour.”

- Driving and parking of heavy vehicles: “the circulation of heavy vehicles with a maximum authorised weight (MMA) superior of 6 tones is forbidden from 0 to 24 hours in the Girona municipality.” For other vehicle weights special permit is needed. “Within the municipal limits of Girona the parking of vehicles with an MMA over 6 tones, trailers, semi-trailers, articulated vehicles, trucks, tractors, caravans and autocaravans is forbidden except in areas especially authorised.”

This norm also typifies the infractions and imposes the different sanctions (fines) to the offenders.

**Municipal Bylaw regarding Citizen Cohabitation and Public Street**

The objective of this bylaw, approved in 1996, is to regulate the use of urban streets and facilitate the citizen coexistence in the whole city of Girona, defining as well the corresponding fines in case of failure to comply.

It also treats the correct use of the city properties (the street, street furniture, public municipal installations, ...); about the citizens behaviour concerning noise inside buildings as well as in public streets; the cleaning, conservation and use of public roads.

Some extracts of this norm are:

- Behaviour with respect to public streets; any behaviour which supposes an incorrect use or generate dirtiness or damage of public streets and its structural elements (street lamps, traffic lights, vertical and horizontal street signs, physical protection elements or delimitation of the territory: pillars, chains, registry lids, gutters, railings, façades and other ornamentations) constitute the breaching of this bylaw.

- Noises: The activities of loading and unloading of goods, manipulation of boxes, containers, construction material and similar actions are forbidden from 22:00 until 7:00. Except for night operations of garbage collection and cleaning, which will have to adopt the necessary measures to reduce to a minimum the level of noise in relation to the citizens peace.

- Use of the public street: its an exclusive competence of the Municipal Administration the executions of necessary works for the perfect conservation of the public streets, the structural elements and street furniture. Therefore, nobody will be allowed, even if it is to improve the conservation of public streets, to carry out works of
 reparations, conservation or rehabilitation of the mentioned elements without having first a municipal licence.

- Use of the public street: the activities, use and installations which represent a common use of the public street are also subject to a municipal licence. This occupation affects the ground as well as elevated spaces.

**Bylaw concerning Advertising and Installations for advertising**

This ordinance has the objective of regulating advertising installations and activities situated or carried out in the public domain inside the municipal area of Girona as well as protect and promote the urban landscape to guarantee an adequate life quality for its citizens. This norm regulates the advertising in the urban streets. For example, it’s also about advertising in sidewalks (occupation of sidewalks by shops).

Some of the items mentioned in this norm:

- “The only identifying message of the premises is the trade name of the establishment. The incorporation of trademarks, logo’s or product codes is not allowed…”
- “Projections, paintings and visual effects of any kind on the urban landscape are forbidden, except those needed for traffic and municipal authorities.”
- “All advertising activities are forbidden in forest and parks”
- “The spreading or dissemination of advertising material is forbidden in any kind of road.”

**Technical Project for the implementation of cycle lanes in the basic street network, as an instrument of mobility planning, April 1998.**

This project determines a network of cycle lanes for the city of Girona. It adopts different routes connected as a network so that it reaches the most important points of the city. It determines different protection elements to create priority for the cyclist. The project doesn’t define when the cycle lanes have to been executed.

**Recommendation of green itineraries in urban and non-urban areas – biologic corridors.**

It shows the network of cycle lanes, the network of green tracks, preferential pedestrian network, trail networks, river network, existing green areas, protected areas and future parks, future equipment, areas of special study...
The city of Girona also has a Plan of Urban Improvement (approved the 28th February 2002 by the Town Hall) which deals with 15 different actuation in different areas and city streets to be carried out during the next years. Among the different actuation units the Barcelona street of Girona is included, where there will be a global planning of a sector of 56.600 m2, as a consequence of the excavations to cover the train. This plan marks the planning conditions, construction and use of the ground indicating the maximum square metres of construction; the suitability for building (m2 of roof /m2 of ground); the supply of land for road use, free space and equipments; and the maximum ground for private use.

It also defines the administrative steps (systems defined by the Spanish Law of the Urban Planning) which will be used to carry out this actuation.

### 2.2 PROCESSES AND EXPERIENCE

**No basic main street or traffic plan has been approved in Girona – only for the old city centre. Each street and traffic change proposed is discussed within a general unwritten idea of the main street network. The planning is made ad hoc.**

Before the execution of the renovation of the street a series of identification phases, decisions, definitions, ... take place.

**Phase of Identification of the Project**

Usually in the annual general budget of the Municipality, there are already the assigned amounts for public road projects. This means, that often the identification of the project, the decisions which have to be taken, are marked well in advance.

Therefore the technicians and the elected responsible for the roads are those who identify the reconstructing of a determined street, a road...

An in a smaller measure, this process begins with demands made to the Town Hall by the neighbours, where they ask for a specific change which could mean an improvement for them.

**Design Decision**

When it is decided to renovate / reconstruct a street, the Municipality technicians normally carry out more than one alternative to the project,
always within the needs of the mobility and the street and with the characteristics they believe necessary.

These alternatives are presented to the citizens affected by this project (street neighbours and shopkeepers) so that they can give them opinion on which alternative to follow.

Project Definition Phase
The Town Hall technicians re-elaborate the project with the agreed alternative.

Reconstruction Decision
The reconstruction project is approved in a special session in the Town Hall, where all political parties represented in the Town Hall assist.

Execution
Once the project is approved, then it is executed.

In the following pages a description of streets which have been restructured in the city of Girona are given. The photos, and of the reality shows, that the physical solutions are often of high quality, good materials are used, etc.

The results often depends on the technical staff in each municipality as there doesn’t exists general norms or methodologies concerning traffic calming, pedestrian areas, etc.

Carrer Ciutadans:

Reconstructed in 1998. This street is situated in the middle of the urban centre which corresponds with the Old Quarter of the city of Girona.
In its reconstruction the idea was to give it a pedestrian air, with the section of sidewalk + pavement + sidewalk constructed with a small level change, but made of the same material: concrete tile.

This street pertains to the “traffic calmed area”, which means that the access is only for neighbours and for loading and unloading in shops of the area. The municipal police takes care of the enforcement.

This is another characteristic which changed as result of restructuring.

*Carrer Agudes:*

Reconstructed in 2002. The remodelling works consisted in modifying the section of the street increasing sidewalks and diminishing the carriageway, arranging the kerb parking from parking in angle to parallel to the kerb. All the public lighting system was also renovated and new trees were planted.

*Carrer Pare Coll:*

Reconstructed in 2002. In its remodelling the width of sidewalks was increased, the pavement was completely renovated and new public lighting was set up.
Carrer Nou:

Reconstructed several times. In the last one the access for vehicles was completely eliminated. A continuous section was created but with a difference transversal due to the use of different materials.
REFERENCES


