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For a Safer City. A Friendlier City. And a More Beautiful City.

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ABSTRACT

The issue of the safety of mobility in the urban environment has been emerging as a primary social topic for some time now due to the number of casualties and, more generally, due to the impact on living conditions in the city.
If correctly formulated, in fact, this subject has implications primarily and fundamentally with regard to the quality of urban life, as the citizen, and the vulnerable road user in particular, is severely restricted in their use of urban public spaces.
Consequently, an increasingly greater focus is being placed on acquiring methods, techniques and strategies for addressing the issue of planning, constructing and managing roads, squares and urban green spaces (and above all, applying the logic of reclaiming the historic and consolidated city) in order that the city can be used to its full potential by the citizen.
The subject itself therefore presents an opportunity to re-establish urban planning regulations (and, more generally, city regulations) in accordance with the renewed interest in public spaces.
The article discusses this matter and includes supporting elements and examples, also referring to the implications on the urban landscape.

Over fifteen years of scientific activity in the area of safety of the vulnerable road user in the city[1] have resulted in the forming of certain methodological considerations aimed at changing the regulatory culture.

The aim here, therefore, is to propose some ideas and thoughts in this regard, which may be of help in adopting a better approach to urban planning[2], whilst not claiming that these are by any means exhaustive or systematic.

First of all, it is only right to set the theme conceptually in terms of the attention that needs to be paid to the issue of accident rates. The following summary of references should suffice in this regard[3].

In Europe alone, road traffic accidents play a major role in the causes of mortality, leading to over 120,000 deaths every year. On a worldwide scale, over one million fatalities per year are estimated to have been caused by road traffic accidents. This is, in fact, equivalent respectively to a catastrophic event every year destroying a major town in Europe or a small metropolis in the world . Around two thirds of these victims occur in an urban environment, particularly in the case of pedestrians.

These events tend to escape public opinion as they are not newsworthy; it is generally, in fact, a case of a constant trickle of micro-accidents, each involving perhaps one victim only, normally occurring on urban streets and of which even the bystanders are only slightly, if at all, aware, often only becoming apparent when the silence is interrupted by the arrival of a police car or an ambulance[4].

One of the first points to consider, then, is that of becoming aware of the phenomenology and knowledge, both quantitatively speaking (in terms of the large numbers at stake) and, above all, qualitatively speaking (in terms of the ways in which the accidents are manifested[5]).

The next step, in line with the substantially interventionist culture of the engineer and the architect, is then to identify methods, techniques and policies to reduce the accident rate[6]. To this end, it is of course necessary to avoid certain expert points of view which are now dated and obsolete, even if on occasion they are still proposed and implemented whilst lacking any reason other than supposed common sense, with no theoretical basis and completely contradicted by established practices.

Thus, when implementing urban and land planning and design, it is necessary to lean with conviction towards approaches to the issue which are informed by what, for decades now, has been produced and established in the scientific and operational fields in terms of safety in mobility.

For the purposes - and within the space restrictions - of the scientific article, the summary references shown below should suffice in this respect[7].

Having established, first of all, the primary interest in the vulnerable road user and in the urban environment, it must also be noted that a similarly primary objective is to improve the performance level of spaces for mobility. However, the measures that have been implemented in relation to the individual causes of accidents have a negative impact, as they are in fact clumsy measures.

The performance level of spaces for mobility is, in turn, raised by the use of appropriate techniques for equipping these spaces; this involves a fascinating and fruitful field of research and operation which has seen progress on an unexpected scale over recent years (and which continues to be seen today!), where the field of urban planning finds the appropriate opportunity to collaborate and cooperate with those of transport, road construction and urban street furniture. Excellent results, which go by the name of "traffic calming[8]", have been achieved, and continue to be achieved! Traffic calming can be achieved with the maximum benefit, as we know, by operating on the horizontal and vertical geometry of the road, as well as with construction materials and urban street furniture so as to enable on the one hand the drivers of a motorised vehicles to perceive the characteristics of the urban environment within which they are moving, and consequently to adjust their style of driving to these characteristics (maximum speed being an essential factor); and on the other hand to provide the vulnerable road user with attractive environmental characteristics, allowing them easy access to various different parts of a street or square, thus making them the actual owner of the urban space.

Without claiming to be systematic, here is a possible initial list of good measures for calming traffic:

– reducing the section of carriageways and lanes[9];
– reducing the length of the straight stretches[10], also through the introduction of chicanes[11];
– regulating traffic at intersections by means of physical structures (such as raised crossings or roundabouts[12]), avoiding traffic lights[13];
– enabling the carriageway to be crossed from one side to the other by means of raised crossings[14];
– using suitably rough surfaces for the carriageway[15];
– alternating painted backgrounds and colourings in the road environment (particularly on the carriageway) in order to vary what the driver sees[16];
– introducing urban areas that are equally and methodically equipped for traffic calming, to ensure that the level of infrastructure provided is uniform and to meet relevant expectations with regard to safety[17].

The aim of achieving suitably high levels of road safety, however, does not provide a solution to the complexity of the issues relating to urban mobility.

Safety, particularly that of the vulnerable road user, is in fact just one (albeit totally defining and absolutely essential) step in attaining higher levels of quality of urban life[18].

The analysis of road traffic accidents in the urban environment, with a particular focus on the vulnerable road user, provides a distinct cue as to how the road traffic accident effectively represents a tragic instance, fortunately rare or indeed exceptional, of a more general phenomenology of urban hardship which is widespread and experienced on a daily basis by so many: that of the low level of usability (or, indeed total lack of usability) of urban public spaces on the part of the vulnerable citizen.

This is the case with children as well as the elderly or the disabled; the city and the land are too often designed in such a way as to prevent them being used easily and calmly by the more vulnerable citizens. The city is therefore seen by them to be inaccessible and even hostile.

The issue of safety in mobility in the city is thus referred to the more general issue, of which it forms part, of the quality of urban public spaces. This is, in fact, an absolutely central and defining topic in the field of urban planning which has sadly been overlooked in recent decades. Urban planning must now take possession once again of the themed spaces that were once its own, establishing, among other things, regulatory basics for these.

It may be useful at this point to mention the effect on the observer of the charming image of the graphic reconstruction of Ancient Rome, that we so often come across, even unintentionally, hanging in the capital's bookshops or newsagents. We are actually struck, if not astonished, by how a large number of the urban areas, systematically organised, were made up of urban public spaces, of an open nature. The nature of the urban planning functions of what was the city par excellence was in fact defined by the masterly selection of areas of this kind, whilst living spaces performed a minor role and were even wedged in between the urban public spaces of roads, squares, forums, etc.

The reality is that even living spaces derive functional benefit and a higher quality, less from the focus on the internal elements than from the functional level that the urban public areas -and in particular the open ones- are capable of achieving and then instilling in them. That is how it was for Ancient Rome. That is how it was for the cities that, over time, at best knew how to put the stones that formed them to the use of the society that had created them and is expressed in these.

But this is not how it was, sadly, for the urban expansion activities that shaped Italy (and not only Italy, but Italy especially) after the

Second World War, when areas of housing began to emerge[19] and open urban public spaces were, if provided at all, relegated to a residual role.

Starting out from the focus on the vulnerable road user as the greatest victim of urban accidents, we then come to the point of highlighting how the future of the city is at stake according to its ability or inability to define itself primarily by its open public spaces[20], and of how this attitude is formed in the way of re-establishing city regulations aimed at restoration (in the consolidated city), in the appropriate design and implementation (through expansion and new projects), and in the proper management and (continued) appreciation of these spaces. In each case with specific consideration and with every intervention targeted at the vulnerable citizen.

What virtuous logic can delay the achievement of these results?

First of all the pursuit, wherever possible, of soft mobility. In this regard, there is a need to reserve and equip as many spaces as possible for pedestrian and cycle access and to ensure that they are adapted to these needs through their very nature and equipment. And so, primarily, to create pedestrian areas.

Critical analysis of ongoing experiments, over the length and breadth of the land, since the experiment of pedestrianisation of urban areas began over recent decades, has however shown beyond any doubt that it is idealistic to believe that, in the contemporary city, large parts, or a significant number of sections of the urban area can be reserved for pedestrian areas pure and simple[21]. The reality of the situation demonstrates, in fact, that we are so dependent upon motorised vehicles, and the car in particular[22], that only modest parts of the extent of the urban settlement can be fully pedestrianised even with the best intentions in this regard.

It is useful to note the following: as we know, the pedestrian prefers to move in straight lines. From this observation, we come to the "axis of life[23]" concept, which refers to urban linearity with a view to making the best use of services aimed at socialising[24]; the axis of life is essentially characterised by pedestrian movement, whether with purpose or just strolling.

Therefore, realistically speaking, forced pedestrianisation may be most advantageously restricted to the axes of life; and to little else.

Meanwhile, in the rest of the city a prevailing role in making pedestrian movement safe and free can be provided by the widespread use of traffic calming techniques at a suitable level of severity,on a case-to-case basis, to allow for extensive expansion of spaces which can be calmly and positively used by the pedestrian in harmony with motorised vehicles which are adequately regulated in terms of their movement by the appropriate traffic calming measures.

The issue of cycling access can then be properly addressed on the basis of the result now obtained. The extensive recovery of public areas by implementing traffic calming techniques also grants full access to the cyclist, who is then able to move safely within the most diverse urban environments, without being restricted in their routes and paths. Cycle paths can thus be restricted to the smaller urban areas where the need to allow motorised vehicles to move quickly makes it necessary to separate the traffic elements.

It is appropriate, at this point, to stress the important theoretical and operational role (which is often sadly ignored or unacknowledged!) adopted by the "functional classification of roads", an essential document of the Urban Traffic Plan[25]. This is in fact the document that adopts the determining role of linking urban planning with mobility planning. In this area, based on the zoning of city environments as defined in the urban planning instrument, there is a requirement to define the consequent suitable physical layout of public spaces for roadways. It is, in short, the moment of choice, on a case-by-case basis, between total pedestrianisation, the integration provided by traffic calming measures, and the separation of the traffic elements. There is, thus, an incentive to focus on the cautious drafting of the functional classification of roads, moving away from seeing this as a tedious official obligation, as often happens, unfortunately.

It is, incidentally, also worth mentioning here that the availability of a suitable collective mobility system which is efficient due to its reliability is of help to the cause with which we are concerned: this is, in fact, the most effective means of containing and indeed reducing individual motorised mobility.

This, in turn, must not be the object of preconceived rejection; it is in fact a generally useful way of moving around, which is even indispensable on routes which would otherwise be impossible with shared transport because they would lack carriers or because too many carriers would be involved. The problems created for the city and the land by individual motorised mobility are not, in fact, due to its structural causes, but rather to the inappropriate use made of it by so many, particularly in the urban environment, whenever they are used indiscriminately when one should resort, even in a combined way, to walking, cycling and to shared transport systems. And thus helping to make the movement of the vulnerable road user unsafe or even impossible – exactly what we have provided some contributions to overcome[26].

Finally, I would like to outline the landscape implications of soft mobility.

First of all, we must remember the acquisitions already available on the subject with regard to the use of the landscape through pedestrian and cycle access.

This is a plentiful mix of opportunities, especially in relation to the area of tourism or leisure. In any case, we must be aware on the one hand of the wealth of results created by otherwise impossible opportunities to appreciate the assets of the landscape as we move slowly within it[27]. On the other hand, we must highlight the opportunity resulting from creating greenway systems particularly in regional networks , restoring and using historical roads, as in the case of Roman or medieval roads, river and canal towpaths, sheep tracks and herd trails, disused railway lines and military roads dating back to the last century[28].

And it is also worth saying a few words about the impact on the urban landscape of the restoration of open urban public areas. The traffic calming measures mentioned earlier have the effect of enhancing the visual elements that make up the urban fabric by introducing greenery, artwork, street furniture and technological components for the diversification (micro-environment by micro-environment) of spaces for pedestrians and of roadways. In other words, useful factors for differentiating one space from another, in order to create personalised and pleasant places[29]. In itself, then, the operation contains the seeds for the aesthetic improvement of the city in terms of those parts of it (the open public spaces, specifically), which, by their very nature, are the urban sections most subject to the regular use of people and where, therefore, investments produce the greatest synergy.

It goes without saying that projects in these kind of areas must enjoy priority of investment in order to maximise the positive results.

Also because, in a mature society, the focus on the aesthetic quality of the city has to be positively considered among the top priorities of the administration as it bears results which are particularly enjoyed and appreciated by citizens and by city users.

Notes

[1] The concept of the vulnerable road user is important in every approach to the subject under discussion.
As we know, the issue can be addressed primarily with a comparative criterion: from this viewpoint, the vulnerable road user is the person who, in the event of a collision, suffers the most damage; so, for example, the car is vulnerable in relation to the truck, the motorcycle in relation to the car, the bicycle in relation to the motorcycle, and the pedestrian in relation to every other road user.
It is, however, with a focus on the absolute value of the entities involved that the concept of the vulnerable road user demonstrates the conceptual potential appropriate to it, establishing new and determining regulatory conceptualisations for the city context; it is, in fact, the focus on pedestrians and, in particular, on the most vulnerable of these , such as children, the elderly and the disabled, that needs to be the absolute priority when revisiting urban spaces, especially public spaces, with a view to meeting the requirements of these users.

[2] Specific in-depth analysis is possible due to the vast amount of scientific literature produced on the subject over recent decades. Of particular significance are the Proceedings of the International Conference Living and walking in cities (and the extremely extensive bibliography included therein), which has been held regularly on the initiative of the University of Brescia since 1994, always in the month of June. The Conference, maintaining continuity of the dominant, defining theme, effectively and strongly illustrated by its title, centres every year on a significant and contemporary interpretation of “living and walking in cities”, as demonstrated by the subtitles of the various conferences: Town planning and infrastructure project for safety in city life (1st edition, 1994), Ripensare vie e piazze per la serenità e la sicurezza (2nd edition, 1995), Going to school (3rd edition, 1996), Handicap in mobility (4th edition, 1997), Elderly people’s mobility and safety (5th edition, 1998), Policies for safety in mobility: from the community level to the municipal one (6th edition, 1999), Pedestrian mobility and public transport (7th edition, 2000), Town and infrastructure planning for safety and urban quality for pedestrians (8th edition, 2001), The place of bicycle (9th edition, 2002), Non motorized mobility and land resources (10th edition, 2003), Historical centers (11th edition, 2004), The outskirts (12th edition, 2005), The place of green (13th edition, 2006), Space for public shows and trade fairs (14th edition, 2007), Minor communities: renewal and valorization (15th edition, 2008), Young peoples and urban spaces (16th edition, 2009). Each Conference is held over a period of one to three days in Brescia and other venues (Bergamo, Cremona, Milan, Parma, Piacenza), also in collaboration with other universities (Polytechnic of Milan, Catholic University of the Sacred Heart, University of Bergamo, University of Milan, University of Parma) and with the involvement of the city councils, of professional associations, municipal bodies and interested local institutions and associations. The Conference Proceedings, all regularly published, each contain the texts of around forty or so reports, sometimes by various authors. The editors of the relevant volumes have been: R.BUSI and V.VENTURA (I, II, III and IV), R.BUSI and M.PEZZAGNO (V, VI, VII and VIII), M.PEZZAGNO and K.SANDRINI (IX, X and XI),

M.PEZZAGNO and E.CHIAF (XII, XIII, XIV, XV and XVI). For the scientific purposes of this article, please see in particular the Introduction to the single volume, also edited by the Chairman of the Conference, R.BUSI.

[3] The order of magnitude that follows is taken from the following online publications relating to World Health Day, 7 April 2006, edited by the World Health Organization and by the World Bank: World report on road traffic injury prevention and Preventing road traffic injury: a public health perspective for Europe. These sources can be referred to for an in-depth study of the quantitative values of the phenomenology.

[4] Public opinion is, however, sometimes effectively aroused by the mass media with regard to events which are catastrophic because they involve several vehicles, typical of non-urban and motorway accidents in particular. In these cases, in fact, the number of victims resulting from the same accident, combined with the horrific images of crushed vehicles, are factors which lead to a strong and, rightly so, appropriate awareness of the dangers of mobility. Whilst it is always helpful for people to become involved in these issues, it is essential to remember that, as stated above, the urban environment is where the issues relating to lack of safety on the roads is prevalent.

[5] Of particular significance in relation to this aspect is the approach taken to the issue through studying "accident scenarios", according to a useful technique that we owe to the Institut National de Récherche sul les Transports et leur Sécurité (INRETS). For a systematic view of the subject, cf. D.FLEURY, Sécurité et urbanisme. La prise en compte de la sécurité ruotière dans l'aménagement, Editions Presses de l'Ecole Nationale del Ponts et Chaussées, Paris, 1998. An interesting methodological approach, also rigorously applied in some representative case work, can be found in: G.MATERNINI, La sicurezza del pedone in città. Il caso di Brescia, Sintesi editrice, Brescia, 1994.

[6] Specific in-depth analysis is also possible in this case due to the vast amount of scientific literature produced on the subject over recent decades. Of particular significance are the Proceedings of the Refresher Course on Tecniche per la sicurezza in ambito urbano (and the extremely extensive bibliography included therein), which has been held regularly on the initiative of the University of Brescia since 1997, published in a specific series by Egaf Edizioni of Forlì, edited by R.BUSI. The Refresher Course, maintaining continuity of the dominant, defining theme, effectively and strongly illustrated by its title, centres every year on a significant and contemporary interpretation of safety in the urban environment, and on the relevant techniques which need to be applied in order to achieve it, as demonstrated by the titles of the various courses: La protezione del pedone negli attraversamenti stradali (1st edition, 1997), La classificazione funzionale delle strade (2nd edition, 1998), Le normative europee per la moderazione del traffico (3rd edition, 1999), Intersezioni stradali: le normative europee (4th edition, 2000), Integrazione tra autoveicoli e traffico non motorizzato (5th edition, 2001), Le normative sulla progettazione stradale e l'analisi di sicurezza (6th edition, 2002), Elementi per la redazione del regolamento viario (7th edition, 2003), Gestione delle strade in presenza di cantieri (8th edition, 2004), Interventi per incentivare la mobilità non motorizzata (9th edition, 2005), Le intersezioni stradali a raso (10th edition, 2006), Criteri per una corretta segnaletica stradale (11th edition, 2007), Progettazione e gestione degli spazi esterni alla carreggiata (12th edition, 2008), Linee guida per la realizzazione delle fermate del trasporto pubblico locale (13th edition, 2009). Each Refresher Course is held over a period of two days in Brescia (the first three courses) or in Desenzano del Garda (all subsequent courses), with the involvement of the Province of Brescia, the Municipality of Brescia or of Desenzano del Garda, the Association of Engineers of the Province of Brescia, of Stradamica (Association for the Safety of Vulnerable Road Users), of the AIIT (Italian Association for Traffic and Transport Engineering), of ASM (Municipal Services Company) Brescia S.p.a., and of ACB (Automobile Club of Brescia). The Proceedings of the Refresher Course, all regularly published and sometimes the subject of future courses, each contain the texts of around a dozen reports, generally by various authors. The editors of the relevant volumes have been: R.BUSI and L.ZAVANELLA (I, II and III), G.MATERNINI and L.ZAVANELLA (IV), R.BUSI and M.TIBONI (V), G.MATERNINI and S.FOINI (VI, VII, VIII, IX, X, XI, XII and XIII). The director of the Refresher Course is R. BUSI and the vice-director G. MATERNINI.

[7] The issue, whilst now in fact of great importance in its own right, must of course always be seen as an integral part of the broader subject of the relationships between technological components of the city and the quality of urban life (cf. G.DUPUY, Urban networks, network urbanism, Techne Press, Amsterdam, 2008.

[8] The following essential bibliographical references should suffice on this topic, which is the subject of major scientific studies and of significant international application: R.TOLLEY, Calming traffic in residential areas, Brefi Press, Brefi, 1990; C.HASS-KLAU et al., Civilised streets. A guide to traffic calming, Environment and transport planning, Brighton, 1992; L.HERRSTEDT et al., An improved traffic environment. A catalogue of ideas, Danish road directorate, Copenhagen, 1993; COUNTY SURVEYORS SOCIETY, Traffic calming in practice, Landor Publishing, London, 1994; P.NOYES, Traffic calming primer, Pat Noyes and associates, Boulder, 1998; R.EWING, Traffic calming. State of the practice, Institute of transportation engineers, Washington, 1999.

[9] As we know, the increased width of the carriageway or lane is a factor, all other things being equal, in increasing the speed of the

vehicle. The proximity of the edges of the road to the vehicle, on the other hand, leads the driver to moderate their driving. The driver, in fact, sees the increased road width as reassuring; this characteristic is moreover typical of non-urban fast roads and the driver therefore tends towards the style of driving corresponding to these type of road conditions.

[10] As we also know, the increased length of the straight stretch is a factor, all other things being equal, in increasing the speed of the vehicle. The presence, however, of a nearby feature causes the driver to moderate their driving. The driver's field of vision, in fact, as soon it can focus on a nearby background, tends to widen, thus perceiving features in the surrounding (urban) environment and causing the driver to adapt to the style of driving in keeping with the location.

[11] The chicane, well known as a means of slowing down vehicles in motor sports, also has a beneficial role in calming traffic. Rather than simply using horizontal signs, it can take the form of background features aimed at diverting the path of the traffic. These background features can consist of physical and visual obstacles made up of urban greenery (trees, shrubs, etc.), parking spaces (in line, herringbone), monuments and, more generally, elements of urban street furniture.

[12] Raised crossings and roundabouts, as well as being important and effective mechanisms for reducing speed (breaking the continuous path of the vehicle by interrupting the horizontal and vertical lay of the land), are also highly efficient at dividing traffic as they enable flows to be self-regulated.

[13] Traffic lights, in fact, are notorious for making traffic less safe as they cause vehicles to speed without creating any means of mitigating the outcome of accidents. Traffic-light-controlled crossings are, in truth, generally the scene of very serious accidents. Furthermore, traffic lights have a modest capacity for self-regulation as the size of the traffic flow varies along the different routes. Neither has fitting traffic lights with all the more complicated mechanisms ever achieved significant effects in terms of increasing the safety of the crossing equipped in this way or in terms of improving the regulation of the traffic flow at different times of the day, week, season or year. Incidentally, one can appreciate the groundlessness and indeed the oddness of attributing the adjective "intelligent" to traffic lights when, as has unfortunately been the bad practice for decades now, some inventor expresses his creativity from time to time by fitting them with some device. Intelligence, far from being displayed by traffic lights, is in fact an aptitude exclusive to the human species, consisting of exercising one's critical capacity.

[14] The focus on the vulnerable road user is effectively illustrated by removing the need for them to deal with variations in level. This objective can best be achieved, when possible, by maintaining the same level for both the carriageway designed for vehicles and for the pedestrian areas. In order for them to be able to move around easily, it is necessary in these cases, firstly to ensure that the traffic is calmed significantly (so as to achieve perfect harmony between vulnerable users and motorized vehicles without the former being disturbed in the slightest), and secondly to ensure that the areas strictly reserved for pedestrians are bordered by vertical elements (posts or similar). When, however, it is necessary (or appropriate) to resort to the conventional solution of a pavement, the crossings must be appropriately raised to the level of the pavement to which they are to be linked, both to enable the crossing to be at the level of the vulnerable user from one side of the road to the other, and to form an additional significant means of calming the traffic, consisting of interrupting the vertical layout of the carriageway by raising the height to that of the pavement.

[15] Which transmit sufficient micro vibrations to the vehicle when it exceeds speeds which are incompatible with the urban environment. Stone paving with a suitably rough top surface can generally be used effectively for this purpose.

[16] In fact, it is advisable to avoid, in particular, bitumen or asphalt surfaces , which with their monotonous coloring suggest to the driver a non-urban road, causing them to adopt styles of driving which are inappropriate to the urban environment. It can, however, be advantageous to make (ample) use of appropriately emphatic horizontal signs; or, better still, to paint the carriageway in suitable alternating colors or with designs. One excellent technique is to use stone surfaces with various different sizes of stone and colorings.

[17] A typical case is that of "30 Zones", especially identified and their borders defined not only by means of signs but above all, by means of "gates" which are physically constructed in order to convey as well as possible to both the vulnerable road user and to the vehicle driver the message of the presence of a spacious urban surface characterized by traffic calming elements aimed at preventing the speed limit of 30 km/h from ever being exceeded. However, the 30 Zone concept is much more complex (and beneficial, due to the wide range of possibilities available), than is suggested by reference to the upper speed limit effectively permitted for vehicles. In effect, a 30 Zone corresponds to a district, as has been established for some time by urban planning regulations, thanks also to the studies of Vincenzo COLUMBO (cf. V.COLUMBO, La ricerca urbanistica. Organica urbanistica, Giuffrè, Milan, 1966). The 30 Zone corresponds, in fact, to the most appropriate mechanism in urban public spaces for mobility in a district. For an in-depth analysis of the technical implications of 30

Zones, cf.: CERTU, Guida alla "Zona 30". Metodologia e raccomandazioni, translation by V.VENTURA, Editoriale Bios, Cosenza, 1999; C.SOCCO and C.MONTALDO (edited by), Linee guida Zone 30, Regione Piemonte, Turin, 2007. See also the bibliographies listed therein. Another example of a type of urban zone that has been equally and methodically equipped for traffic calming is the Dutch woonerf, from which the English term "home zone" derives. This is an urban zone, the road network of which is moderated by stricter means than the 30 Zone. Focusing on the basics of urban planning regulations and on the contributions we owe to COLUMBO, we can confirm that the woonerf corresponds to the most appropriate mechanism in urban public spaces for the mobility of a neighborhood. For an in-depth analysis of the technical implications of the woonerf, cf.: M.SOUTHWORTH and E.BEN-JOSEPH, Streets and the shaping of towns and cities, Island Press, Washington D.C., 2003.

[18] On this subject cf. R.BUSI, Sicurezza è bellezza, in F.BRONZINI, A.BEDINI, S.SAMPAOLESI (edited by) , Il profumo della città, Il lavoro editoriale, Ancona, 2009.

[19] Often (sadly!) on a speculative basis.

[20] Of primary scientific and operational interest to this subject in relation to accessibility (cf. M.TIRA, *Accessibilità e sicurezza degli spazi pubblici urbani*, in A.ARENGHI (edited by), *Design for all. Progettare senza barriere architettoniche*, UTET, Milan, 2008.

[21] In all cases it must be remembered that the pedestrianisation of an urban area can never be absolute. There is in fact a need, at any time, for access on the part of public safety services (the various police forces) and emergency services (fire brigade, ambulances, etc.), and during particular hours, for supply vehicles (for shops, etc.), refuse collection and works vehicles (road works, underground services, construction, etc.). It may also be appropriate to grant access to taxis and other means of shared surface transport. On the whole, the presence of vehicles is not negligible.

[22] Cf. G.DUPUY, Automobile e città, Il saggiatore, Milan, 1997; G.DUPUY, La dépendance automobile: symptomes, analyses, diagnostic, traitements, Anthropos, Paris, 1999.

[23] Among other things, we are indebted to COLUMBO for having systematised the "axis of life" concept, which is essential, as we know, for urban planning and design. He conceived and formulated this concept by developing certain ingenious intuitions of Giovanni MUZIO. Cf. (in addition to the aforementioned source, of 1966): V.COLUMBO, *L'organizzazione dell'abitazione nella comunità. L'unità residenziale elementare (unità quartiere)*, L'ingegnere, Milan, 1950, n. 6; V.COLUMBO, *La città articolata*, Atti del XIV Congresso internazionale di sociologia, società italiana di sociologia, Rome, 1950; V.COLUMBO, *I servizi pubblici nel quadro urbanistico. Ricerche sulle attrezzature sociali dei quartieri organici*, Atti del IV Convegno nazionale degli ingegneri italiani, Collegio degli ingegneri in Milano, Milan, 1951; V.COLUMBO, *La comunità, cellula umana del piano regionale, nell'organizzazione urbanistica sociale*, Rivista di ingegneria, Milan, 1953, n. 12; V.COLUMBO, *Il quartiere e la comunità*, Atti del VII Congresso nazionale di urbanistica, Bologna, 1958; V.COLUMBO, *Sulle ricerche sociali in urbanistica*, Atti del I Congresso nazionale di scienze sociali, Stresa, 1960; V.COLUMBO, *Ricerche sui quartieri coordinati*, Il corriere amministrativo, Empoli, 1960, n. 15 and 16; V.COLUMBO, *I quartieri CEP e il tema sociale*, Il giornale dell'ingegnere, Milan, 1960, n. 14; V.COLUMBO, *L'equivoco dei quartieri detti autosufficienti: Quartieri CEP o new towns?*, Il giornale dell'ingegnere, Milan, 1961, n. 6; V.COLUMBO*, Problemi economico-sociali di attualità urbanistica: i quartieri residenziali e la funzione lavoro*, Il giornale dei costruttori, Milan, 1961, n. 19 and V.COLUMBO, *L'equivoco delle unità urbanistiche autosufficienti: quartieri semiautonomi e comunità autosufficienti*, Rivista di ingegneria, Milan, 1964, n. 4. The subject was subsequently developed by those who continued his work and, in particular, by the Scuola di Brescia; among the many references, cf.: R.BUSI, *Le isole pedonali: l'aspetto ecologico-geoambientale*, Atti del Convegno "La pedonalizzazione delle aree urbane", CRSUL, Milan, 1974; R.BUSI, *Le funzioni della piazza nell'organismo urbanistico: il caso di Piazza del Duomo in Milano*, Atti del Convegno "Piazza del Duomo e dintorni", Università Cattolica del Sacro Cuore, Milan, 1984 in Arte lombarda, Milan, 1984 n. 70/71; G.MATERNINI, S.FOINI, *Proposta di classificazione ambientale delle strade*, Le strade, Milan, 2008 n. 7/8.

[24] Most significantly known by the term "life centres", as in the case (referring to the characteristic functions) of the "civil" life centre, the "religious" life centre and "commercial" life centre. Not every life centre of course is a single, specific structure, but rather a combination of elements (sometimes complex and intricate) aimed at making possible the moments of civil, religious and commercial living respectively, particularly in view of their associative implications. Life centres tend to align themselves along an axis (the axis of life) and, at the same time, generate and are enhanced by pedestrian movement, whether motivated by the actual need to go from one place to another or by the enjoyment of "passing the time" in an attractive environment designed for this purpose.

Incidentally, we must remember that a useful role of cities is also to allow the citizen to identify with the urban environment as much as possible through easy and free pedestrian movement (cf. D.DEMETRIO, *Filosofia del camminare*, Raffaello Cortina Editore, Milan, 2005). We are also indebted to COLUMBO for having

systematised the "life centre" concept (cf. the aforementioned extensive bibliography).

[25] Cf. G.PROTOSPATARO, *Codice della strada commentato*, Egaf Edizioni, Forlì, 2009.

[26] In order to systematise the absolute and reciprocal roles, in a land and urban environment of pedestrians, cycle access, shared transport systems and the individual motorised transport system, cf. R.BUSI, *Vivere e camminare sull'Adriatico*, Atti del Convegno "Mare nostrum: turismo e mobilità", Comune di Senigallia, Senigallia, 2007 (in the process of being published); R.BUSI, *Muoversi nella città amica*, Atti del Convegno "I "perché" di una metropolitana sotterranea in aree di media dimensione", CTM, Cagliari, 2008 (in the process of being published).

[27] "*...in automobile si traversa, non si conosce una terra. A piedi ...vai veramente in campagna, prendi i sentieri, costeggi le vigne, vedi tutto. C'è la stessa differenza che guardare un'acqua o saltarci dentro...*" by C.PAVESE, *Il diavolo sulle colline*, in C.PAVESE, *La bella estate*, Einaudi Editore, Turin, 1949.

[28] Cf. R.BUSI, M.PEZZAGNO (edited by), *Mobilità dolce e turismo sostenibile. Un approccio interdisciplinare*, Gangemi Editore, Rome, 2006; R.BUSI, M.PEZZAGNO (edited by), *Camminare sull'Adda. Un sistema di percorsi per la mobilità dolce*, Gangemi Editore, Rome, 2007.

[29] Cf. A.TOCCOLINI, *Progettare i luoghi piacevoli*, Maggioli Editore, Rimini, 2009.