

Sustainable Walkability and Place Identity

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Abstract—The sustainability of a place depends on a series of factors which contribute to the quality of life, sense of place and recognition of identity. An activity like walking, which in itself is obviously “sustainable”, can become non sustainable if the context in which it is carried out does not meet the conditions for an adequate quality of life.

This work is aimed at proposing the analytical method of PlaceMaker to identify the elements that do not feature in traditional mapping and which constitute the contemporary identity of the places, and the relative complex map to represent those elements and support sustainable urban identity design. The method’s potential for areas with a predominantly pedestrian vocation is illustrated by means of the case study of the Ramblas in Barcelona.

Keywords—Place-identity, PlaceMaker, sustainability, walkability.

I. INTRODUCTION

THE presence of a dense mixture of contrasting elements and perceptions can detract from the image of a city and contribute to both urban and human decline, also at times fostering episodes in which personal safety is put at risk [1]. In places with a predominantly pedestrian vocation, and in particular in urban thoroughfares featuring cultural tourism, we now find a growing number of places created as a result of globalisation which transmit messages arising from uncontrolled modalities and designed to condition users’ patterns of thought and action.

The elaboration of suitable projects for the conservation and enhancement of place identity in these areas, often particularly representative of their city, together with the adoption of measures for traffic calming and active transportation in the areas adjoining the pedestrian zones, require typologies of analysis and tools for representation which are able to identify and represent the urban elements that go to make up contemporary cities [2]-[6]. Recognising the value of a place as a fundamental component in urban identity serves as a reference point both in terms of the wishes of the collectivity and in safeguarding and constructing a sustainable urban image and design [7]-[9].

Starting from these premises, this work is aimed at proposing the use of the analytical method of the PlaceMaker to identify the elements that do not feature in traditional

mapping and which constitute the contemporary identity of the places [10]. The method was conceived in 2001 and has been continuously elaborated and enriched during experimentation since 2002. The final product of PlaceMaker is a complex map and the relative legend, designed to integrate the traditional planimetry and support the sustainable urban identity construction and design. In order to illustrate the method’s potential for areas with a predominantly pedestrian vocation, we present the case study carried out in the Ramblas in Barcelona.

The paper is organized as follows. The PlaceMaker method and the description of the case study are illustrated in Section 2. In Section 3 the observation and conclusion are presented.

II. PLACEMAKER

PlaceMaker method comprises five phases and a Phase 0 that consists in the construction of the grid required for the operations which are to be implemented later.

The different types of database have to be created to contain the different types of data collected: there are data from the anticipatory analysis (sketches, poems, collages, etc...); the denominative and perceptive (through words), the graphical (signs and symbols), the photographic (fixed images), the video (moving images) reliefs; the elements deduced from the study of traditional planimetries (graphic signs, symbols etc...); the questionnaire administered to visitors to the places in question (sketches, words, etc...). It is necessary to decide the categories of elements to analyze, which are connected in a particular way to the urban events identified above, and the corresponding measurement parameters. Moreover, it is necessary to establish which days are the most significant and the time slices for the reliefs.

The first phase of PlaceMaker is devoted to an anticipatory analysis aimed at a primary investigation of the place; after the preliminary choice of the city and of the part or parts to be analyzed, the ideas about that particular area can be described using any type of instrument or tool of expression, using the information known before the first inspection. These notes can be represented in different ways and the result of this phase will be a map of the emerging ideas.

The second phase is that of the five reliefs (surveys). The first relief, the denominative one, consists in the collection of the data regarding constructed elements (presence of monuments, buildings, etc...), natural elements (presence of urban green areas, trees, animals etc...), transportation mode (presence or transit of cars, buses etc...), people (presence of tourists, residents, etc...). The localization of all these elements and the kind and amount, expressed as a low, medium or high percentage, are indicated. As well as the denominative data base there is a cognitive one which

constitutes a kind of flexible input, where it is possible to insert elements which are not decided previously, but deduced during inspection. The second relief is perceptive; a survey is carried out of the smell, sound, taste, touch and visual sensations, and of the global perception, focusing on the localization, type, amount (present in low, medium, high percentage) and quality (non-influential, pleasant, annoying perceived feeling). The survey of the amount and quality of the data, the three options regarding, respectively, the percentage of presence and the feelings induced, are intended to summarise the processing of data that can however be extended during collection. The next relief is the graphical one that consists in sketching the places; the sketches will represent the area in question according to a visual-perceptive standpoint and will be supported by annotations where necessary. This operation constitutes a preliminary study for the construction of the graphical symbols for the complex map. Photographic and video reliefs of the whole study area are carried out, taking care to record facts rather than an interpretation of the places. The product of the five reliefs is a map visualizing the results obtained from the different reliefs.

The third phase involves the analysis of the traditional cartography of the selected sites of the city. The types of maps used in this phase derive from different disciplines and depend on the nature of the place; the study is carried out at the urban scale, in order to identify the characteristic elements and their relationships with that particular area, and at the areal scale, in order to identify the relationships between the site and the whole city. The result of this phase is a map with the identification of the components required for the description of the site that can be found only through a traditional planimetric reading.

The fourth phase is that of the questionnaire administered to visitors to the area in order to gain an idea of the place as perceived by those who are not involved in the study and are not specialists in related fields, but only perceive the site as users, at various levels: the inhabitant, the passer-by, the tourist. The questionnaire consists of questions asked on the basis of images of the area or an inspection visit with the interviewee. The information deduced from the questionnaire will be transferred onto a map that, like the previous ones, will constitute the basis for the construction of the complex map. The fifth phase is that of assembling the collected information. In this phase, we test the maps produced, the congruence of the various collected data, and choose the useful elements to construct the final map. The recorded data represent the basis for the construction of the graphical system of symbols to represent the elements of the urban landscape and the elaboration of the complex map [11].

A. First Phase

The **first phase** of PlaceMaker is devoted to the anticipatory analysis. Prior to carrying out the initial site inspection, we were aware of the Ramblas as one of the city's most symbolic sites. It is a long broad avenue, with traffic flow along the two sides and a tree-lined walkway in the middle, the perfect place for a casual stroll. The Ramblas bisects the historical quarter and the Gothic *barrio*. It is very

popular with tourists and full of vendors of souvenirs and local produce. Along the two carriageways we can see some historical shops and businesses. There are also many fast-food outlets catering for the tourists, producing smells which mingle with the traditional ones and giving an overall impression of disorder. The walkway is on the level, and the paving induces no particular tactile sensations. The trees and the proximity of the sea ensure the presence of birds. The sea does not make a strong impact, or at least does not contribute to the feel of the Ramblas. The proximity of the historical centre, on the other hand, does have a strong impact, in terms of architecture and the people frequenting the area. The predominantly warm weather, frequently bright and sunny, also influences the atmosphere of this thoroughfare.

B. Second Phase

The **second phase** involves the construction of the five relief maps. We begin by presenting the results of the nominal and perceptive reliefs. The study area comprises a broad, lengthy street, the Ramblas, with running down the middle a dense tree-lined thoroughfare devoid of public benches except for a short stretch off Placa Catalunya, and on either side two carriageways with wide pavements. In spite of these pavements there is no doubt that most pedestrians are attracted to the central tree-lined thoroughfare, which is thronged with people at all hours of the day and night. Each stretch of the Ramblas has a name and presents a particular urban townscape, especially in the central section covering Rambla de Canaletes, Rambla dels Estudis, Rambla de Sant Josep, Rambla de Caputxins, and Rambla Santa Monica. The buildings which characterise the Ramblas are in different styles dating from different eras, mainly of a high architectonic quality which sometimes attains excellence, although not always in a good state of conservation. For the most part they stand six or seven storeys tall, comprising a predominantly unbroken façade along the two carriageways. Our analysis starts from Rambla de Canaletes and finishes at Rambla Santa Monica, with the results of the reliefs being presented stretch by stretch. In the first stretch, Rambla de Canaletes, the central pedestrian zone is broad. The tree-lined perspective dominates perceptions, excluding the lateral carriageways from the field of vision. A tall structure ornamented with friezes and lamps marks the beginning of this stretch and is used by passers-by to sit or lean on. Then come the access points of the metro station. Just beyond them there are seats on both sides of the thoroughfare where people can pause and watch the comings and goings. Here the pace is quite rapid but discontinuous. Further on there is a kiosk for tourist information and some living statues miming different scenes and street performers, to attract the attention of passers-by. In some cases the "statues" wait for a donation before embarking on their number.

Then comes the Rambla dels Estudis, also known as des Ocells, where there is a break in the line of trees and the carriageways predominate, together with the buildings lining them. Here too mimes presents their scenes. Along the lateral carriageways tall buildings adorned with friezes alternate with others whose façades are not decorated, in a good state of

conservation, making for an attractive urban townscape. Along the right-hand carriageway we see the historical Pharmacy at the corner of Via Bonsucces and beyond it some fast-food outlets. Continuing along the left-hand carriageway we see a building with a colonnade, and on the right-hand side the baroque church called Iglesia de Betlem followed by the concourse with the building of the Liceu. A characteristic feature of the Rambla dels Estudis are the stalls selling birds and small animals, all along the central thoroughfare. When the stalls are closed the carriageways dominate perceptions with traffic noise, whereas when they are open it is the sounds made by the birds and animals and the voices of on-lookers which prevail, blotting out the traffic noise. The stalls are interspersed with streetlamps where one can usually see bicycles parked. Here the overall perspective culminates in a single point and does not run in a straight line: we have the impression that people crowd together and become confused with the line of trees.

The central section becomes narrower and the lateral carriageways broaden out. This is where Rambla de Sant Josep begins, and flower sellers' stalls dominate the scene. Here too the stalls are interspersed with streetlamps and the carriageways occasionally impinge on perception. Looking ahead the press of people is even denser and the backdrop of buildings is largely concealed. Along the left-hand carriageway we see souvenir shops; on the right-hand side perception is arrested by a large publicity hoarding covering up building work. Then there is the Palau de la Virreina in rococo style, housing an office providing information on current events in Barcelona. Beyond this on the right-hand side there is the old covered market called the Boqueria with its elegant façade, offering characteristic glimpses of fruit and vegetable stalls, a magnet for residents and tourists alike. Past the market there are more fast-food outlets, and further on the Antigua Casa Figueras with its traditional Escribà pastryware and yet another fast-food outlet. This is the only stretch in which the trees are planted in raised beds; where the flower sellers' stalls end the trees thin out and come to an end. The right-hand side culminates in the modern theatre and two more fast-food outlets. The left-hand carriageway is characterised by a modern building with a large L-shaped open space providing a view through to the belltower of the Church of Santa Maria del Pi. This is followed by a concourse with an old residence adorned with eye-catching sculptures of dragons and umbrellas making for a distinctive urban backdrop. As we go on we look down a long straight cross-street with old-fashioned lighting down the streetfronts to a belltower. In this stretch, near the fast-food outlets, we are assailed by food smells. This is the central section of the whole Ramblas, characterised by an image by Mirò reproduced on the walkway and, a little further on, two access points for the metro station Liceu. Here the prevailing perception is one of chaos on account of the numerous intersections for both pedestrians and traffic. On the left-hand side after the image by Mirò we come across the first open-air cafés, and on the right-hand side more living statues featuring particularly original scenes.

The next stretch is Rambla de Caputxins. The first part of this pedestrian area is characterised by the open-air cafés on

both right and left. Ahead of we rises the tall monument to Cristoforo Colombo. Along the left-hand carriageway there is a building with a colonnade giving access to the old Placa Real; then comes the Placa del teatres with its statue of Frederic Soler, a gathering place for pigeons. On the right-hand carriageway we see a street leading up the hill and the Hotel Oriente. This stretch of the Ramblas is characterised by the booths of painters, first on the right-hand side and then along both sides. People pause to buy or merely inspect the pictures, or to have their portrait or caricature painted. Here the Rambla is curving. The prospect changes and in the distance we can see the cablecar line. One prevailing acoustic perception here is the wind; the trees and urban features gradually thin out.

At the beginning of the last stretch, the Rambla Santa Monica, the thoroughfare once again becomes straight and broad. There are open-air cafés on both sides, and the acoustic perception of wind is still quite marked. The long-range view features the statue of Cristoforo Colombo and the cablecar. On the left there is the Dressanes metro station. There are fewer people here, and the pace quite rapid. There is a general sense of dispersion, as if the tension had been relaxed. Along the left-hand carriageway there is an underground carpark and beyond it the way into the old waxworks museum. On the other carriageway there is the Parrocchia Santa Monica and Santa Monica cultural centre; at the crossroads a broad street leads off, dominated by a sky-scraper. Along the central pedestrian zone of the Ramblas, where the painters' booths come to an end, there is an "empty" space given over at weekends to a craft market. A modern fountain on the right serves as a meeting and resting place. The view moves from the towering statue of Cristoforo Colombo onto the street leading to the harbour with palm trees, making for a perception characterised by lack of definition and dispersion. For the graphic relief graphic-perceptive sketches were made of some of the places considered significant for the analysis, accompanied by a few notes and preliminary indications concerning the symbols to be used in constructing the final map.

For the photographic relief some 200 photographs were taken during the various site inspections and along the whole of the itinerary, recording all the elements which may contribute to the analysis. Finally, the footage shot for the video relief had the dual function of recording data concerning both timescale and pace and noises heard.

C. Third Phase

The **third phase** involves the *traditional analysis* carried out on cartography of both the city and territory.

The study area comprises a long, slightly curving axis of variable width. Known as the Ramblas, this traverses the historical centre of Barcelona from Placa Catalunya to Placa de la Porta de la Pau with the statue of Cristoforo Colombo, dividing it into two parts. The Ramblas comprise a tree-lined walkway in the middle with traffic flow along the two sides. There are no areas of vegetation bordering on the Ramblas, only visible further off. The north eastern area of the historical quarter, away from the sea, is characterised by irregular, winding streets and blocks, with a concentration of historical

buildings round Placa de Sant Jaume, whereas the north western area is more regular and features many historical buildings. The main elements of interest to emerge from our analysis on the urban scale include: public squares with both regular and irregular outlines, places of historical and cultural interest, urban voids, axes, striking sightlines.

On the territorial scale we observed, in addition to the confines of the study area, its position with respect to the city, its orography, set on an area of flat land within the city, the presence of urban areas going back to Gothic times, public squares outside the study area, buildings of historical and artistic interest, the hills and the sea as viewed from the study area.

D. Fourth Phase

The **fourth phase** involves the *questionnaire*. This is designed to take between 10 and 30 minutes to complete. The questions are listed below, together with analytical summaries of the answers provided.

0) Nationality, age; as you walk through the study area: 1) What are the elements which strike you (people, things, etc...)? 2) Are there one or more elements which produce a particular sensation? 3) Is there an element which brings to mind a particularly significant moment for you for any reason? 4) Are there any things which disturb you? 5) Is there an element which causes a strong sensation? 6) If you could change something, what would it be? 7) Can you compare this area to another area in this city or elsewhere? 8) If so, why? 9) What is the symbol of this city?

The people interviewed, mostly tourists and passers-by aged between 25 and 65, generally responded quite readily to all the questions.

From our summary of the replies the elements of particular significance include: the general atmosphere, the variety and multitude of people who pass through at all hours of the day and night, the cafés with tables in the openair, artists, flowers, the architecture, trees, the general feeling of happiness and goodwill. The most significant elements which produced a particular sensation were: the old covered market of la Boqueria, the enormous throughput of people, the living statues, the building with the sculptures of dragons and umbrellas, the mosaic fountains, all arousing positive sensations apart from the living statues, which for some people introduce a note of sadness. The elements recalling a particularly significant moment were: the stretch of the Ramblas alongside the sea, with its hint of holidays; the statue of Cristoforo Colombo, with various reminiscences including the discovery of America; strolling along the Ramblas took some people back to schooldays; the various fine buildings and also the trees could evoke people's hometowns. Among the things which were disturbing: traffic, noise, the attempts of some beggars to get money from passers-by, bad smells, cripples begging, the lack of benches to sit down on, the overall sensation of insecurity, the continuous throughput of people, making it impossible to keep the Ramblas clean. Among the elements causing a strong sensation: the statue of Cristoforo Colombo, the atmosphere, the flowers, the throng of people from all over the world. Ideas of things interviewees would like to change include: removing the stalls in which

animals are sold, eliminating traffic along the carriageways, making them pedestrian zones too, introducing more benches, encouraging local businesses in place of commercial chains, and improving security. The study area was compared to: the Kantestrasse, Vienna, for the similar crowds out for a stroll; the Paseo Aumada, Santiago, Chile, another broad pedestrian thoroughfare with a craft fair on Saturdays and Sundays; Central Park, New York, with its artists, etc; the pedestrianised streets in Denmark, viz. Copenhagen, where one can stroll; Malaga and Puerta del Sol in Madrid, for the general atmosphere. Finally, the following elements were considered symbolic of Barcelona: the harbour, the sea, the statue of Cristoforo Colombo, the Sagrada Familia, the Ramblas, Placa Catalunya, the architecture of Gaudí, Miró's paintings, Parco Guell.

E. Fifth Phase

The **fifth phase** involves the re-elaboration of the data collected in order to *construct the systems of symbols and draw up the complex map*. The form of the symbols, strictly related to the meaning of the different kind of places, has been created bearing in mind two components: the signs of the graphical relief and the comparison of the sign with the meaning. Another criterion adopted concerns the size of the symbols; three sizes were designed (small, medium and large) referring to the various percentages quantifying the presence of that given element (slight, medium or considerable). We also matched the symbols with a number in order to indicate in the legend the element to which it referred. Finally it was decided to summarise the feelings about the elements of perception in non-influential, pleasant, annoying and place beside each number the first letter of these words. The strong and contrasting colours that were used aim to attract and activate the visual perception and overall perceptions. The full closed circles are symbols which were chosen in order to visualize the concept of space, linked to the idea of a circumscribed area. For the places of casual socialization, instead of a precise shape, we chose an imprecise curved shape, that recalls the idea of aggregation. For a place possessing multiple values, we chose a circle with different colour arrows pointing outwards, to indicate the various different values offered by the site. The uncoloured square is used to recall the sense of empty space. For the symbols connected to perception, two fundamental types were created: one for permanent perceptions and one for transient ones, the former being denoted by symbols with a full line and colour, the latter with a dotted line and half-coloured.

The ten perception symbols recall shapes of body parts connected to the respective actions of seeing, touching, smelling, feeling and tasting. For the "evocative place" we chose a square with a coloured circle inside it to characterise the place's symbolic value.

For the stalls of flowers and birds and the painters' booth we chose square symbols with different colours and contents, referring to the shape of the stalls themselves and what is on sale.

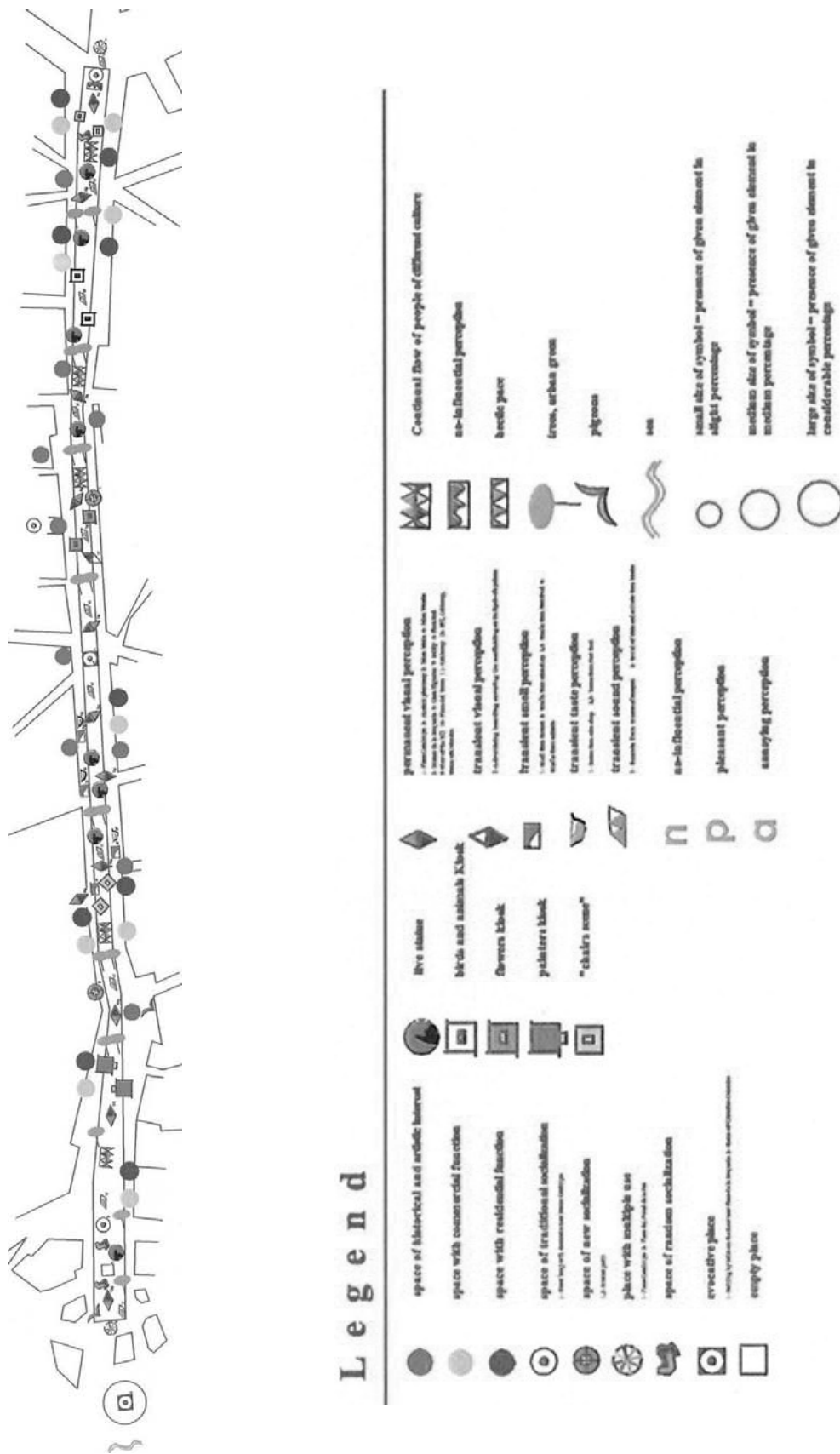


Fig. 1 Ramblas, Barcelona, complex map and legend

For the living statues we chose a solid circle with an irregular shape in movement within it, indicating the indefinite and dynamic nature of the scenes mimed. For the symbols denoting pace, we used signs that recall the speed to which they refer and the perceptions that derive from them. To symbolise the constant throughput of people of different cultures we used the symbol of rapid pace embellished with different colours to represent the various cultures. For the symbols of the natural elements we used the stylised real reference image.

When reading the map, one must pay attention to the size of the symbols (indicating the elements' quantitative presence), their meaning as given in the legend, and the meaning that may derive from the proximity of two or more symbols. For example, a large symbol indicating a place of traditional socialisation (such as a square) shows that the square itself is large. But if this symbol is close to the one indicating an empty place, this means that although the place should serve for socialisation, in reality it is not functioning as such.

Once the symbols were created, they were inserted in the map, whose graphical basis consists of the area boundary, placing them in the point where they were found (see Fig. 1).

III. OBSERVATION AND CONCLUSION

This article has illustrated the method of analysis constituted by PlaceMaker and a practical application carried out on a thoroughfares with a predominantly pedestrian vocation in the historical centre of Barcelona.

The case study features the area of the Ramblas in Barcelona using the PlaceMaker method made it possible to identify and represent on a complex map the current identity of these places. In this case the method served to establish whether the current identity of these places is sustainable with walkability and whether there are any critical points where one could draw up an urban plan to enhance identity and walkability.

In this case-study the profusion of both urban and non-urban elements makes it difficult to recognise the salient traits of its identity. Place identity here seems to concern above all the central walkway rather than the lateral carriageways: this pedestrian concourse features a constant change of urban scene, with a continuous throughput of passers-by who often become an active part of the scene. In some points the confusion of hybrid elements introduced from the side streets and in some stretches of the central walkway make the identity not sustainable, creating perceptions of unease among passers-by, as emerges both from the map and from some of the replies to the questionnaire. The enhancement of such elements as the image by Mirò reproduced on the walkway, vantage points with views of significant historical or natural elements, and the area towards the sea, close to the harbour, where there is dispersion and a drop in tension; institution of controls over the opening of further fast food outlets, above all close to significant historical buildings; provision of benches and areas for the public to congregate; introduction of measures for traffic calming especially at the crossroads and other places where traffic is heaviest: these are all indications that could be provided by urban design projects for improving

the walkability and sustainability of the identity of the Ramblas. The crucial points found during the experiment concern: the construction of a database which is as flexible as possible and able to collect different kind of data (mainly multimedia); the choice of the name of the categories, on which to address the observation; the parameters to be used to compare the selected elements; attention to collecting the data observed using the different tools of the relief and not using the logical conclusions deriving from the use of that particular tool. The PlaceMaker method and the complex map are proposed both as tools of knowledge for citizens and tourists and integrated and sustainable urban design support for guiding policy choices for walkability on the part of planners and administrators.

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