

## **Resilient and Smart Public Spaces: the Div@ter Digital Platform**

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### **1 ABSTRACT**

Terms such as smart and resilient seem nowadays to have captured the scientific literature in different fields: from urban design and planning to technology from economy to sociology. The sustainability adjective does not help to circumscribe the question and may contribute to the vagueness of the argument. One of the possibility is represented by the process to become "smart" in a sustainable meaning, with particular attention to the ecological, as well as social and economic sense.

As regards, the paper aims at presenting the Div@ter digital platform, in course of development. Div@ter is a dynamic and interactive platform for the complex-sensitive management of the qualitative data of a territory. The project is financed by POR FESR Lazio Region 2007/2013 Axis 1- Activity 1.1. The synthesis of the Market Street case study in San Francisco (CA) - interested by two considerable earthquakes, carried out using the Div@ter platform, will conclude the paper.

The objective of this case study was to identify the place identity and provide for interventions able to restore the identity of Market Street as a whole and make it smart and more resilient to possible future period of crisis.

### **2 RESILIENT AND SMART PUBLIC SPACE**

Terms such as smart (Duany et al, 2010; Townsend, 2013) and resilient (Eraydin, Taşan-Kok, 2013) seem nowadays to have captured the scientific literature in different fields: from urban design and planning to technology from economy to sociology. The sustainability adjective does not help to circumscribe the question and may contribute to the vagueness of the argument.

What is correct is that territories need to be able to respond to situation of crisis, so to be adaptive, recomposing their balance. One of the possibility is represented by the process to become "smart" in a sustainable meaning, with particular attention to the ecological, as well as social and economic sense.

As regards, in the last years, the public space topic is become a central theme both in the literature and in the practice field, because is not anymore considered the last step of an urban project, but as a part of a transformation process. Indeed the quality of an urban transformation project is more and more measured with respect to the quality of public space (Bain et Al, 2012; Cabe, Detr, 2000; Carmona et Al., 2010; Friedmann, 2010; Gehl, 2010; Kent, 2008; Madanipour, 2003; Oc et Al. 1997; Sepe, 2013a).

Accordingly, the design of smart and resilient public spaces could represent a factor of success for the whole operation of transformation.

Starting from these premises aim of this paper is to present the Div@ter digital platform, in course of development ([www.divater.it](http://www.divater.it)). Div@ter is a dynamic and interactive platform for the complex-sensitive management of the qualitative data of a territory. The project is financed by POR FESR Lazio Region 2007/2013 Axis 1- Activity 1.1. The synthesis of the Market Street case study in San Francisco (CA) carried out using the Div@ter platform will conclude the paper.

The San Francisco post-seismic reconstruction, which has seen many earthquake including those of 1906 and 1989, was carried out in different stages. The Community Safety Element identified specific objectives and relative policies. With respect to the topics of the Market street case study, Objective 2 states: "reduce structural and non-structural hazards to life safety, minimize property damage and resulting social, cultural and economic dislocations resulting from future disasters: Most earthquake-related deaths and injuries will result from the failure of buildings and other structures as a result of shaking or ground failure. Damage to structures results in substantial economic losses and severe social, cultural and economic dislocations. In addition to the characteristics of the earthquake and of the site, a structure's performance will depend on structural type, materials, design, age and quality of construction and maintenance. (...) The Policy 2.8 reads: "Preserve, consistent with life safety considerations, the architectural character of buildings and structures important to the unique visual image of San Francisco, and increase the likelihood that architecturally and historically valuable structures will survive future earthquakes" (<http://www.sfgov.org>)

Market Street was subject to reconstruction which has mainly privileged the part including the financial district, leaving the other parts in a slow decline, apart from the Castro area. Furthermore, even though present buildings of historical interest are well maintained, the stretch between Embarcadero and Powell is mainly used by workers and less lively during weekends.

This is the only street of San Francisco which for its position is related to many parts of the city and is recognised by residents as an emblematic axis. Thus, the objective of this case study was to identify the place identity and provide for interventions able to restore the identity of Market Street as a whole, connecting public spaces and cultural resources in a smart way, and make it more resilient to possible future period of crisis.

### 3 THE DIV@TER DIGITAL PLATFORM

The Open Source platform allows to import tangible and intangible spatial data from different sources, integrate them with information provided by the users, calculate indicators and represent the information in interactive and immediately understandable maps. It collects the main data using the PlaceMaker method (figg. 1-2), already experimented in many public spaces and contexts - including Europe, Usa, China and Japan (Mazzoleni, Sepe, 2005; Sepe, 2006, 2007, 2009, 2010, 2013a-b, 2014; Sepe, Pitt, 2013, 2014) -, integrating them with structured data and enabling the development of new services based on them. PlaceMaker, through a both rigid and flexible protocol constituted by surveys - nominal, perceptual, graphic, photographic, video -, questionnaires administered to place users, analysis of traditional maps, allows the identification of the identity resources of places (Lynch, 1960) and of appropriate project interventions for their protection and sustainable enhancement.

PHASE	OBJECTIVES	ACTIONS	PRODUCTS
0	Construction of the analysis grid	Choice of categories Choice of parameters Choice of significant days Choice of time slices	Database grid
1	Anticipatory analysis	Preliminary observations made prior to the first inspection of the place	Map of the preliminary ideas of the place
2	Perceptive and denominative description of the elements	Denominative survey	Map visualizing the results obtained from the survey
		Perceptive survey	
		Graphical survey	
		Photographic survey	
		Video survey	
3	Identification with traditional cartography of the elements required for area description	Analysis of traditional planimetry at urban scale	Map with the components of the site deduced from analysis of traditional maps
		Analysis of traditional planimetry at territorial scale	
4	Identification of place elements perceived by users of places	Questionnaire for visitors to the place	Map visualizing the results of the questionnaire
5	Processing the collected information	Overlay of the maps with the different elements observed from the anticipatory and effective analysis	Graphic system construction
		Check of the different elements observed from different analysis tools	Complex map of analysis
6	Identification of identity resources	identification of the identity potential identification of identity problems identification of identity qualities	Map of identity resources
7	Identification of identity resources by users of places	Questionnaire for visitors to the place	Map visualizing the results of the questionnaire
8	Identification of the project proposal	Overlay and elaboration of data collected	Graphic system construction
		Definition and localization of design intervention	Complex map of identity project

Fig. 1: PlaceMaker method scheme

Div@ter is a Geographical Business Intelligence tool, devoted to the re-design of the territory and its public spaces, which is conceived as a unique platform with different entry points, both private and public: for local authorities, professionals and citizens (fig. 3). The product consists in two "complex" maps - one of analysis

and one of design - with the identification of cultural resources of a place and enhancement intervention. Unlike other urban methodological approaches which study only one aspect of the site (perceptive, urban, etc.) or multidisciplinary approaches which collect a lot of data but find difficulty collating it, this considers the places from all points of view and with different but compatible tools of relief. This method assembles, elaborates and reconstructs data from surveys based on physical reconnaissance, sensory perceptions, graphical elaboration, photographic and video records, and sets these data against those provided by an overview of expectations, an analysis based on traditional cartography and two questionnaires administered to local inhabitants. The main products are two final complex maps, one of analysis and one of design, which represent place identity and project interventions in order both to establish a dialogue with local people and support planners and administrators in sustainable urban construction and conversion. Div@ter platform allows the collection and management of these data using an only one tool, the multimedia phone or tablet, allowing a quick updating of the information.

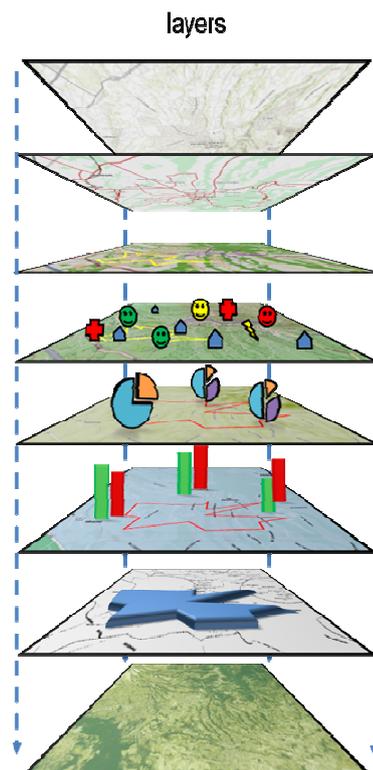


Fig. 2: Div@ter system of layers for the complex maps (image by F.Fagnini, Lynx)

The multimedia map are created by inserting symbols and elements into the maps connected to multimedia schedules that can be continuously updated. The complex-sensitive contents of the maps are navigable by using tablets and smart phones, contributing to deep and smart understanding of places and favouring participative actions.

One of the main use is identifying and enhancing a network of public spaces, of a territory meant as important factor for its resilience.

In the case study which will be shown in this paper, Market street in San Francisco, the platform is particularly useful because the questions related to the current identity of public spaces are complex and require the identification of different kinds of identity resources from many points of view.

#### 4 THE CASE OF MARKET STREET

Market Street is the main thoroughfare of San Francisco (Jacobs, 1971). As Fred Kent (2008) pointed out: "Although many began as people-friendly streets that could be shared comfortably by pedestrians and motorists, most have evolved to accommodate an ever-increasing number of cars and trucks. While streets have become wider, sidewalks have become narrower. But no matter how much any street has been widened, it is never wide enough. Every time word gets out that a street has more room for cars, new traffic keeps coming until it's filled up again".

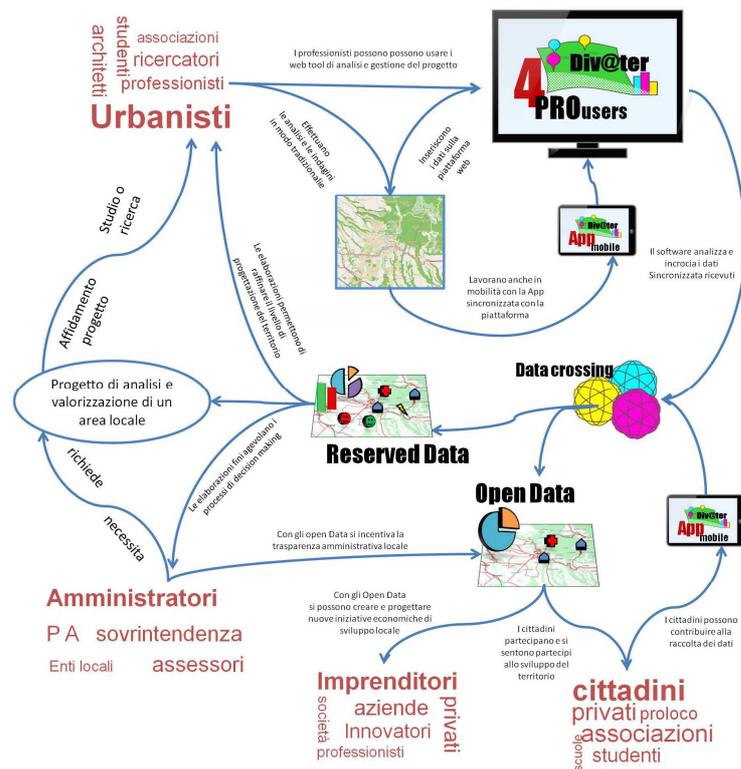


Fig. 3: Div@ter use cases (image by F.Fagnini, Lynx)

Indeed streets are space in their own right and have an important role in the public realm (Appleyard, 1981). They have to be considered in their three-dimensional characteristics. "Streets are not just a flat plane on which to travel, but a volume of space, a kind of large "outdoor room", in which the surface of the street serves as a "floor", and the surrounding buildings serve as the "walls". (...) James Kunstler notes that "whether in garden at home, or on Main street, people like to feel sheltered and protected. We're attracted to arbours, pergolas, street arcades, even awnings". "We enjoy spaces that are scaled appropriately for use by people, interpreting them as cozy, intimate, or safe. We feel invited to spend time there. When streets have poorly defined edges, large empty spaces, and are sized for cars and trucks instead of people, the space instead become isolating, intimidating, and even dangerous, encouraging us to move through it and leave it quickly, just as the vehicles are doing. Quality, safety, convenience, and interesting destinations are among the factors that determine how people choose to move around the city" (Bain et Al, 2012).

In this specific case the street present two distinct parts which makes it non-resilient and create a sense of discontinuity. In the following the case study will be summarized with particular attention to the tree phases of design carried out with PlaceMaker method.

#### 4.1 The identity resources

Identity resources were identified through observation of identity potential, problems and quality reported in the complex map of analysis.

One of the main problems of Market Street highlighted by our analysis carried out with PlaceMaker is its lack of continuity. Notably, the stretch from Powell to Embarcadero is very different from that from Powell to Castro (figg. 4-5). The reconstruction that followed the earthquake of 1906 focused especially on the Powell-Embarcadero stretch, where the historical buildings were restored or rebuilt, new buildings, including skyscrapers, were erected, and several public spaces were created. In the Powell-Castro stretch, instead, several buildings are in a state of insufficient maintenance, and some are defaced by non-decorative graffiti. The discontinuity between these two stretches of Market Street is accentuated by the wide street crossings found along the Powell-Castro stretch, which undermine the sense of continuity and axis.

Another issue is the scarcity of public spaces in the Powell-Castro stretch, which does not allow people to use it as actively as they could. The presence of many closed stores in some parts of this stretch, as well as several empty spaces covered with uncultivated vegetation or dirt-floored, give it an aura of neglect that draws several homeless people.

Not least is the problem of vehicle traffic, which is quite intense in some parts, producing annoying levels of noise.

Finally, the most critical issue of Market Street is probably its lack of a strong identity capable of making it as attractive to locals and tourists alike as other places in San Francisco.

As to the potential of Market Street, our analysis highlighted several aspects. It is a broad street with wide sidewalks, except in its final part towards Castro, where it narrows down. The Powell-Embarcadero stretch is much used because of the presence there of the Financial District, the Ferry Building and the Embarcadero, as well as some large department stores.

The square in front of the Ferry Building is very large, but several parts of it are not used or used for stands sometimes arranged in a chaotic fashion.

In a way, the Embarcadero Plaza and the Hallidie Plaza are entrance gates to Market Street. The former has a primary role in providing access from the sea to the hillside. Although broad, it does not appear to be well designed, in spite of being graced by exquisite sculptures and fountains, benches and trees. It is mainly a transit place, occupied by street peddlers with their stands, which also extend into the stretch of Market Street between Drumm and Davis Street. The Hallidie Plaza is most frequented at the intersection with Powell Street, where street artists and peddlers gather.

The Powell-Embarcadero stretch has many other public spaces besides the just mentioned ones. Most, however, are underused, either for the lack of benches or because they are in shade most of the day, or because they do not afford interesting views.

There are several monuments that seem to go unnoticed and are susceptible of enhancement. These include Lotta's Fountain, the Plaque to Robert Frost, and the Liberty Bell Slot Machine plaque.

Crossings and empty spaces on the one hand constitute a problem, but on the other could become the public spaces that are presently lacking in the Powell-Castro stretch.

Various views, including some very striking ones, could be exploited to better advantage. The skyscrapers, the Flatiron and the historical buildings are certainly interesting features in the urban landscape. The views of the Ferry Building on one side and the hill on the other are also remarkable. In the Powell-Castro stretch, too, there are agreeable views, such as that of the Hibernia Bank, that are not enhanced as much as they could be. The proximity of Market Street to several places, such as City Hall, is an important resource, which, if used wisely, would increase the attractiveness and utilization of the street.

In the Powell-Castro stretch there are several interesting historical buildings that are presently underused and poorly maintained.

Finally, our PlaceMaker analysis highlighted many qualities. First of all, the central position of the Market Street axis, which intersects many other axes of the San Francisco grid plan. Then there is the fact that Market Street is the only street in San Francisco connecting the sea to the hills. Furthermore, the street affords easy vehicle transit.

On both sides of the street are well maintained historical buildings included in the lists of the historical sites and landmarks of San Francisco. These lists also include the monuments and fountains. Besides, there are historical buildings and Victorian houses not included in the lists, but which are nevertheless of historical interest. The Ferry Building has been well renovated and is well used, with restaurants and typical stores. Its space facing the sea provides a fine view of the surroundings.

As to the street itself, especially in the Powell-Embarcadero stretch it is constructed with good-quality materials and has mostly well-designed public spaces. Furthermore, Market Street is treed along its whole length and there are several green spots. Some stretches have bicycle lanes. Besides, there are two stops of the historical cable car, one on Powell, where the cable car turntable is, the other in California Street. These stops, besides allowing use of this traditional means of transportation, attract many people.

There are traditional shoe-shiners in the Powell-Embarcadero stretch who give it local colour. In Van Ness-Castro there are stores with special products and various novelties, and international restaurants. If these were incorporated in a more welcoming context for pedestrians, they could increase the street's attractiveness. Finally, there are some museums and theatres.



Fig. 4-5: Two stretches of Market street

## 4.2 The design questionnaire

The design questionnaire which we administered consists of a 10-point questionnaire concerning possible actions to be undertaken.

0) Nationality, age

Passing through the study area:

1) Why do you come to this street?

2) What do you think about the quality of this place?

3) What do you think about the overall perception of Market Street as an axis?

4) What do you think about restoring historical buildings in Powell-Castro area?

5) Have you noticed the historical buildings, the fountains and plaques, and the Victorian houses?

6) What about enhancing different characters of the street?

7) Did you feel threatened at any point?

8) What about creating new urban spaces and introducing more green spaces?

9) What do you think about designing new urban furniture in the Powell-Castro stretch in continuity with Powell-Embarcadero?

10) What do you think about improving pedestrian and cyclist mobility and circulation?

The interviewees (approximately 30 in number) were passers-by in Market Street aged 30 to 60. Their countries of origin were the USA and Mexico. The language used for the interviews was English.

To the first question – “Why do you come to this street?” – most interviewees replied that they came for work. This was the answer given by over half of the interviewees, independently of age or nationality. The rest answered for shopping or simply for a stroll. A small number said they were there to visit the city.

As to the question regarding the quality of Market Street, the answer was unanimous. All interviewees answered that the quality of the Powell-Embarcadero stretch is good, while that of the Powell-Castro stretch is generally not. Many of the interviewees, however, added that in the Powell-Castro stretch there are many interesting buildings, stores and restaurants.

To the question about the perception of Market Street as an axis, almost all gave a positive answer, especially the interviewees who worked on Market Street or had come there to shop. Some of the answers indicated an awareness of the historical value of the Market Street axis. A smaller percentage was not aware of how long the street actually is, and thought that the name Market Street only applied to the stretch of the street they were on.

To the question “Have you noticed the historical buildings, the fountains and plaques, and the Victorian houses”, the interviewees gave rather different answers. While a significant percentage answered that they had noticed the presence of historical buildings, only very few had noticed the fountains, the sculptures and the Victorian houses on the Powell-Castro stretch.

To the question about whether it would have been worth enhancing certain characters of the street, the interviewees mostly gave an affirmative answer. Some, especially those who had taken less notice of the street's monuments, replied that they did not have an answer.

To the question whether they felt threatened anywhere in the street, most of the people answered that they only felt threatened in the Powell-Castro stretch. A few answered that they also felt threatened in the other stretch, especially on holidays.

All the interviewees agreed that it would be desirable to create new public spaces and introduce more green. Most of the interviewees added that what they especially would have liked is more public benches.

To the question regarding the designing of new urban furniture in the Powell-Castro area in continuity with Powell-Embarcadero, all the interviewees expressed their agreement.

Finally, all the interviewees found that it would have been a good idea to create a bicycle lane for the whole length of the street and improve pedestrian circulation. Many added that motor vehicle traffic should be reduced.

### 4.3 The design interventions

The last phase of our PlaceMaker analysis consisted in merging the data collected during the previous three phases (V,VI,VII phase) and drafting a project proposal (fig. 6).

Possible actions to be taken include: Reinforcing Axis Continuity; Designing new Urban Characters, Enhancing Identity; Creating Connections; Creating and Enhancing Public Spaces; Improving green; Improving Mobility.

The first action is Reinforcing Axis Continuity. Market Street is one of the axes that place the strongest stamp on the urban fabric of San Francisco. Walking on Market Street today, while in the Powell-Embarcadero stretch one observes axis continuity, in the Powell-Castro stretch this continuity is lost, to the point that in some places it is very difficult to understand that we are still on the same street.

The first step to be taken to address this issue is to create a continuous design of urban elements, sculptures etc. along the whole length of Market Street. The second step is to design illumination to highlight the axis from different angles and perspectives. The third step is to plan ways to diminish street-crossing distances at intersections in the Powell-Castro stretch and, wherever possible, to widen its sidewalks to the same width as those in the Powell-Embarcadero stretch.

The second action is Designing new Urban Characters. Although axis continuity must be conceived from the perspective of the street, certain features are susceptible of being further enhanced to add to the character of some stretches of Market Street, especially between Mid Market and Castro. Among these are some cultural features such as art galleries and antique furniture shops.

The first step is thus to create aggregations of functions and design new features for Market Street to allow frequenters and visitors to use this thoroughfare more often. The features we singled out with the PlaceMaker method, starting from Embarcadero, include: the sea and the piers, business centres and museums, stores for young people, art and antique shops, civic and cultural centre, and the Victorian centre.

The second step is to complete existing functions with new elements and integrate them with the new functions. The third action is the Enhancing of Identity. Market Street has several identitarian elements, and only some of these receive adequate attention, such as the Flatiron, Phelan, Food and Ferry Buildings.

Of these, only the last induces people to protract their stay in Market Street. The first step is thus to promote monuments, historical buildings, and historical trades. These include Lotta's Fountain, the Plaque to Robert Frost, the Liberty Bell Slot Machine, the Victorian houses, and the shoe-shiners in the Powell-Embarcadero stretch.

Besides, there are many historical buildings in the Powell-Castro stretch that are poorly maintained or not adequately promoted, such as the Carpet and Furniture Building – the second step .

The sea and the hill constitute two strong identitarian elements of Market Street, but are only really perceivable near the Embarcadero and Castro. Besides enhancing their actual visual perception – the third step – the sense of the vicinity of the sea and the hill can be reinforced by making them into a theme evoked in public spaces and by urban furniture.

The second step is to provide for the maintenance of historical and cultural monuments and buildings, in order to both safeguard their recognisability and beauty, and their rooted in the memory of citizens and visitors.

The third step is to enhance visual perceptions. These constitute a part of the urban landscape of Market Street and hence need to be recovered and promoted as much as buildings and monuments. These perceptions include views of the Transamerica Building, the Ferry Building, the hill from the intersection with Powell Street as well as several other spots, the Main Bridge and the sea, City Hall, and the skyscrapers. Other views to be recreated are to be found especially in the Powell-Castro stretch, whose discontinuity and gaps detract from its identitarian potential.

The fourth action is Creating Connections. The different orientations of the streets intersecting Market Street offer a strong potential for development.

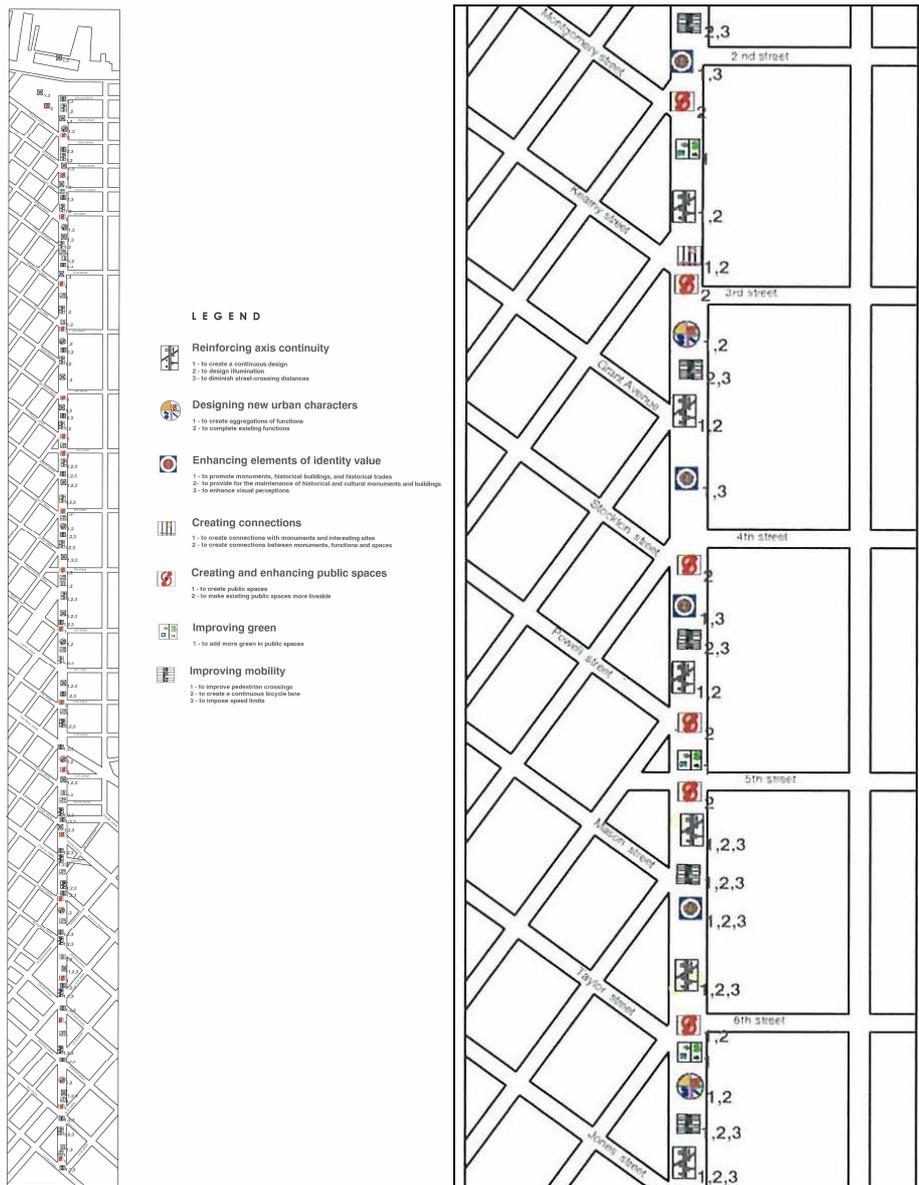


Fig.6: Market street, details of the complex map of design

The first step is to use the many intersections to create connections with monuments and interesting sites which are actually close by but not perceived as such, as in the case of City Hall.

The second step is to create connections between monuments, buildings, functions and spaces in the Powell-Castro and Powell-Embarcadero stretches.

The fifth action is Creating and Enhancing Public Spaces. Here the first step is to create public spaces, especially in the Powell-Castro stretch, where they would help to improve walkability.

The second step is to make existing public spaces more liveable by adding benches and other structures to facilitate stops and the enjoyment of natural resources, such as natural light, or cultural ones, such as monuments or views of historical monuments or buildings, or of the cable car.

The sixth action is Improving green. To add more green in public spaces is an important improvement in order to balance the strong presence of buildings in the area and thus make the thoroughfare more liveable.

The seventh action is Improving Mobility. The width of the street and sidewalks allows an adequate mobility project. The first step is to improve pedestrian crossings near bus stops, which are presently not receiving sufficient attention. Furthermore, to create adequate pedestrian crossings in the stretches with double street crossings, and at the freeway entrance

The second step is to create a continuous bicycle lane to spare cyclists difficult driving amidst cars and other vehicles. The third step, finally, is to impose speed limits to reduce the acoustic pollution of the street.

## 5 CONCLUSIONS

Market Street is one of the main axes of San Francisco, and as such is especially interesting for its connection with various parts of the city. Important questions of marginality and unsafeness, related to the Powell-Castro stretch, require specific attention to this axis to be resolved in a sustainable way.

The fact that it is the only city street directly connecting the hill to the sea surely constitutes a huge potential, to be taken into account in enhancement works. The actions proposed in the present study are: Reinforcing Axis Continuity, Designing "characters", Enhancing Identity-Related Aspects, and Creating Connections Creating and Enhancing Public Spaces; Improving Mobility.

We have taken special account of the consequences of the 1906 earthquake and the subsequent rebuilding and development of Market Street. These actions were not aimed at rebuilding the axis as a whole according to a strong and distinctive plan, but only parts of it. Both our careful observation of the street and the questionnaires we administered bear witness to this. People mainly use Market Street in connection with their job or business. Only a minority uses it as a place for strolling, shopping and visiting interesting buildings.

In the Powell-Embarcadero stretch, in spite of the presence of public spaces, one observes a certain monotony, although it is livened up by views of historical and more recent buildings. In the Powell-Castro stretch, places are, as it were, "on hold". There are empty spaces, unused stores and buildings, and a certain discontinuity in state of maintenance, architectural styles, buildings height, and functions. This discontinuity is toned down only in the last stretch, approaching Castro, where the presence of Victorian houses and quality stores and bars makes the spot mostly agreeable and livable.

In our study of the whole axis, several features emerged that make Market Street suitable for specialization in different sectors, which would be better enhanced by the multimedia maps created by the Div@ter digital platform, navigable on tablets and smart phones. Starting from Embarcadero, we singled out the sea and the piers, the business centres and the museums, the stores selling articles for young people, the art and antique shops, the civic and cultural centres, and the Victorian centre. These places reflect specializations already present in Market Street or the adjoining streets, but unconnected or not clearly defined. For example, from the Financial District, Third and Fourth Street provide easy access one to several museums, including the Moma, as well as the Yerba Buena gardens. In any case, we see the promotion of specialization as part of a plan to reinforce Market Street' role as a single axis. Indeed, one of the nodal points is that of continuity, which is clear and perceivable in the Embarcadero-Powell stretch, but almost completely lost as one goes on towards Powell-Castro. This loss of axis continuity depends especially on the many intersections with other streets. The information identified with PlaceMaker, using Div@ter, could be connected with those already existing, creating a smart connection between public spaces and cultural resources and events of the place, improving the use of Market street by citizens, visitors and tourist.

Indeed, the above-mentioned actions are meant to restore the coherence of an urban fabric impacted by a significant seismic event, where the ensuing reconstruction, although it did not disrupt it, took little account of place identity. The actions we propose share the intent of making place identity the driving force in the promotion of Market Street, complementing the development actions currently under way in this thoroughfare sustainably (BetterMarketStreet:).

## 6 REFERENCES

- APPLEYARD, Donald: *Livable Streets*. Berkeley, 1981
- BAIN, L., GRAY, B., RODGERS, D.: *Living Streets: Strategies for Crafting Public Space*. New Jersey, 2012.
- CABE, DETR: *By Design: Urban Design in the Planning System - Towards Better Practice*, London, 2000.
- CARMONA, Matthew, HEATH, Tim., OC, Taner, TIESDELL, Steve: *Public places-Urban spaces*, Oxford, 2010.
- DUANY, Andres, SPECK, Jeff, LYDON, Mike: *The smart growth manual*. New York, 2010
- ERAYDIN, Ayda, TAŞAN-KOK Tuna (eds): *Resilience Thinking in Urban Planning*. Heidelberg, London, New York, 2013
- FRIEDMANN, John: *Place and Place-Making in Cities: A Global Perspective*. In *Planning Theory & Practice*, Vol. 11, Issue .2, pp.149-165, 2010.
- GEHL Jan: *Cities For people*, Washington, 2010.
- BetterMarketStreet: Reports, <http://www.bettermarketstreetsf.org>, access date February, 11th, 2014.
- KENT, Fred: *Street as place. Using streets to rebuild Communities*. New York, 2008.
- JACOBS Alan: *Urban Design Plan for San Francisco*, Sn Francisco 1971
- LYNCH, Kevin: *The image of the city*. Cambridge, Mass, 1960.
- MADANIPOUR, Ali: *Public and Private Spaces of the City*, London, 2003.
- MAZZOLENI Donatella, SEPE Marichela, (eds): *Rischio sismico, Paesaggio, Architettura: l'Irpinia, contributi per un progetto*. Naoli, 2005.
- OC, Taner, TIEDSELL, Steve: *Safer City Centres: Reviving the Public Realm*, London, 1997
- SEPE, Marichela: *Planning and Place in the City Mapping Place identity*, London- New York, 2013a
- SEPE, Marichela: *Liveability, quality and place identity in the contemporary city: how to monitor and mitigate the impact of globalization on urban spaces*, in *Journal of Place Management and Development*, Vol.3, Issue 3 , 2010
- SEPE, Marichela: *PlaceMaker method: planning walkability by mapping place identity*. In: *Journal of Urban Design*, Vol. 14, Issue 4, pp. 463 – 487, 2009
- SEPE, Marichela: PITT, Michael: *The characters of place in urban design*. In: *Urban Design International*, 2014, DOI: 10.1057/udi.2013.32, Online Date, 08 Jan 2014
- SEPE, Marichela., PITT, Michael: *Improving Liveability and Attractiveness by preserving place identity in Emblematic Thoroughfares: a method and a case study*. In: *Urban Design International*, Vol.18, Issue 3, 2013
- SEPE Marichela: *Places and perceptions in contemporary city*. In: *Urban Design International*, Vol, 18, Issue, 2, 2013b
- SEPE Marichela: *Sustainable Walkability and Place Identity*. In: *International journal of social sciences* Vol. 1, Issue 3, 2007
- SEPE Marichela: *PlaceMaker: supporting sustainable urban planning*. In: *Planning Practice & Research* Vol. 21, Issue 3
- TOWNSEND, Anthony: *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*, New York, 2013