



2018

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## Recommended Citation

Bozza, F. (2018) The experiment of Community involvement in a project planning within the historical context of Rome city, Universal Design & Higher Education in Transformation Congress, 30th October -2nd November 2018, Dublin Castle

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# The experiment of Community involvement in a project planning within the historical context of Rome city

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**Abstract.** The PhD student proposes a method of community involvement in the planning and in the regeneration of historical centers, in support of the city's accessibility and people's well-being. The outcomes of the research are the analysis and the studies conducted over three years with people with sensory, physical and cognitive impairments on the sustainable mobility of historical spaces of Rome, thanks to an agreement between the Phd Student Start up Research Project financed by Sapienza, Università di Roma and the Municipality of Rome. Citizens are involved in the analysis process: they communicate their opinions, impressions, perceptions and needs related to the city experience through a dedicated help-desk, in return, they receive an advice service and a design project for their apartment that suits their necessities. Thanks also to several tours and surveys conducted with people with special needs, the phd student studies the human senses, the perception of the space, the physical barriers, natural and urban elements, with the aim to elaborate an accessibility-map of the City Center Cultural Heritage and Archaeological Sites.

Citizens can contribute by sharing information about the status of the public spaces, or by giving advice on adaptive-ergonomic urban furnishings. The research aims to elaborate an application for mobile systems that identifies an interactive cartography of the city available for all the citizens, especially people with reduced mobility. The map, developed on multiple layers, also contains the layer made up of people's emotions and their perceptions.

**Keywords:** Human-senses · Participatory processes · Well-Being · Emotional map · Sensitive Experience · Accessible tourism

## 1 Introduction

How then to measure the satisfaction level of citizens related to the **urban life quality**? The main important factors are determined by the urban spaces quality, by services, by common assets and benefits.<sup>11</sup>

Since 2010 the Governments have started to give importance to the population's well-being and have financed studies to find measuring tools and statistic indicators. The analysis of the **Fair and Sustainable Well-being indicators** (named **BES** in Italy) were formally introduced in the economic and financial planning documents in 2016.

<sup>1</sup>

Romano, M.: La città come opera d'arte, Giulio Einaudi Editore, Torino, 2008

With respect to what has been proposed by the BES<sup>2</sup> Committee, they have identified four BES indicators.

In 2012 Richard Layard, the director of the **Well-Being Program** in the Centre for Economic Performance of the London School of Economics, has contributed with the first relation of the world happiness report. Therefore, the GNW (the **Gross National Well-being global indicator of progress**) measures both sustainable economy and social development of the following factors: economic status, physical and mental well-being of the people, work quality, socialization, and political status. The participatory processes result in being the base to start investigating and revitalizing the city life quality.

The European Commission, the European Parliament, the WWF and the OECD (Organization for Economic Cooperation and Development) have organized a conference entitled: Beyond GDP Measuring progress, true wealth, and the **well-being of nations**.

The OECD has been active for a long time in the measurement of the well-being and in the society progress, since 2011 when the initiative called "**Better Life**" was launched. The OECD adopts three parameters of measuring well-being: quality of life, the material conditions of families and the sustainability, analyzed in 11 domains. As part of the initiative, the OECD produces a General Report every two years, entitled "*How's life: Measuring Well-Being*" that makes an interactive tool available - *the Better Life Index* - allowing the users to extract comparisons between the countries.

Many countries have started processes to measure people's well-being, taking into account social and environmental factors. The English Measuring National Well-being Program and the Well-being, an Australian framework, to name but a few.

In Italy, the first significant experience of analysis in this field promoted by the public institutions is the one launched in 2010 by ISTAT (the National Institute of Statistics) and the CNEL<sup>34</sup>.

To increase services and the satisfaction in the city, some planners have seen in the Smart City Model an instrument able to "extend the people's well-being". If technology, innovation and efficiency are the tools to develop territorial planning policies, these factors can directly reflect the functional management mechanisms of spaces. However, technology and efficiency do not increase the sociality in the management of a territory or in people's everyday life. In the *Playable City*<sup>3</sup>, the components of fun and the active participation are the characteristics that enable the idea, encouraging positive behavioral changes in people and the relation with places.

Every day in Europe, **millions of people are still excluded from the use of basic products and services** also related to the mobility and the former goods. In the 'Internet age', people who cannot easily go out, or travel, have found new services, new entertainments - many of them exclusively virtual - more facilities, new tools, more selections, and have made discoveries, or they can have more connections, possibilities and services.

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<sup>2</sup> Rapporto ISTAT Bes, 2017

<sup>3</sup> A. Nijholt, *Human Media Interaction, chapter in Playable Cities*, Singapore, 2017

## 2 People with disability Involvement

### 2.1 European Directive

The Communication of the EC to the European Parliament on the European Disability Strategy 2010-20, has renewed the commitment of a Europe without barriers. The EC has requested the commitment of public institutions and departments of research to promote inclusive projects, and it has proposed at the end of 2015 the elaboration of a European law on accessibility. This law should establish minimum requirements for the inclusion in public places, as services and products to be applied within the framework of the EU procurement rules and the use of European funds.

These common requirements must necessarily be listed and selected after several consultations with the citizens especially those who represent a category or have disabilities and specific needs, in collaboration with companies and administration services as well as public and private institutions. According to the EC, this last point includes all primary services including banking, e-commerce, technological equipment (among which smartphones and tablets transports).

The proposed directive aims to improve the European Union citizens' life quality and consequently the companies that provide them accessible products and services. In this context, the importance of investing in these matters and the need to involve citizens to improve services and places of the community emerges.

The participatory processes enable citizens to become integral part in decision and action making processes and draw on the interests of people and their enthusiasm, because they feel involved and important in the planning of the future. The opinion of the current citizens reflects the need of our future community. Participatory processes are not a new model but has not been applied in all fields and matters.

Concepts of health and sustainable development are closely related and interconnected; the European Accessibility Act will simplify the export of products and services that comply with EU requirements, as they will not conflict with national rules. The initiative will stimulate innovation and increase the supply of products and accessible services for around 80 million people with disabilities in Europe.

The law **promotes the concept of equality**, allowing people with disabilities, senior citizens or those with temporary physical and sensorial difficulties, to benefit from a broader offer of accessible products and services.

### 2.2 Dis-Abilities and cultural contexts

The publication "Archeology and disability, a theoretical and practical manual of multisensory *archeology*<sup>4</sup>, invites the reader to theoretical reflections concerning the accessibility of the archaeological areas, it also provides introductory indications for the Design Project and for a setup 'sensitive' to the visitor. Moreover, the archaeological areas can have the potential to empathize with the visitor for multiple factors: **chromatic-visual perceptions, or olfactory and auditory perceptions**; these adequate and helpful facilities welcome those who can benefit most from them.

It is up to the capability of the planners, technicians and specialized professionals, to design a welcoming and 'sensitive' place, considering the users' suggestions so that according to their needs and perceptions of the surrounding environment a singular and appropriate design can be achieved. Depending on the age, necessities change. Users with disabilities are people who have developed particular senses and who have different perceptions compared with the people so-called "able-bodied".

### 3 Human Senses

Different to what would otherwise be expected, the sense of sight is not the human sense that offers most information. The sense of smell, for example, gives to us the perception of the space, whether we are in an outdoor or an indoor space, or gives us information about a location, and an innumerable number of other pieces of information. The receptors of the **olfactory** organs communicate directly to our limbic system, which **influences memories, sensations, emotions** and therefore our well-being.

Aristotle, however, placed the olfactory in the last place among the five senses<sup>5</sup>.

By the middle of the XX century however, the sense of smell was evaluated differently, especially for its great power to **influence our preferences, in human judgments**, memories, choices and so on, as demonstrated by marketing studies.

People breathe 25 thousand times a day, so people smell the air the same number of times. Unlike hearing and sight, the sense of smell is a chemical sense, not everything we smell affects us, unlike animal species which are much more sensitive.

About 400 thousand odors exist, and the human smell sense recognizes about one quarter of them. And yet, the philosopher Kant defined the sense of smell as the least gratifying and useful for our knowledge<sup>6</sup>.

If the fact that the olfactory sense develops from the 12th week of a fetus is true, the memories of the smells start in the gestational phase, and they will accompany the person throughout life. Humans start their first month of life associating images with the smells, and the same neurological cells are activated with the stimulation of the two senses. The sense of touch starts even before in the gestational phase. From the 7th week of a fetus's life, he is able to distinguish a physical contact, starting from the face.

**All the senses are extensions of touch**, as Juhani Pallasmaa<sup>7</sup> said, and all sensory experiences are ways of touching. Therefore, to experience the space it's always connected to the tactility, and as the sense of smell, it's directly connected with the memory.

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<sup>4</sup> L. Vignola, *Archeology and disability, a theoretical and practical manual of multisensory archeology*, Napoli, 2016

<sup>5</sup> S. D. Munger, University of Florida Center for Smell and Taste, 2017

<sup>6</sup> Ibidem

<sup>7</sup> J. Pallasmaa, *The Eyes of the Skin*, Wiley Academy, a division of Wiley, Chichester, 2005)

If people, things and spaces have a smell, therefore, even cities have smells.



**Fig. 1.** The Human senses. Pictures by Francesca Bozza

In January 2018, a study conducted by the Department of Atmospheric and Cryospheric Sciences and the Department of Ecology of the Universität Innsbruck (financed by the European Commission), surprised scientists who found compounds associated with cosmetics and detergents in the air<sup>8</sup>. They recorded the air quality of their city and the smells were mainly formed by a combination of cosmetics, exhaust gas and fast foods smells.

Stimulating the memory, the olfactive sense can influence the state of well-being of a city users. The manual "Environmental Psychology and Architectural Psychology"<sup>9</sup> highlights how the environment and architecture influence the mind and the behavior.

The publication examines the **encounter between the discipline of human psychology in relation with the environment and the architecture**. It describes how colors, lights, affects and elements connected to places are elements that can determine the well-being of the user. Exploring a space, men formulate cognitive maps sized according to the personal and proxemic space by implementing a "territorial" behavior. An architect cannot underestimate the importance of studying the relationship between context and person or how many perceptions and emotional exchanges have relevance in the judgment of the experience lived in a place by different people.

In 2015 the Observatory of the Paisaje de Cataluña, Universitat Pompeu Fabra, Barcelona, has verified how some geographers define places as spaces for emotional interactions, full of meanings that return to us through the emotions that awaken, delivering to memory and imagination the sense of space rather than temporal one<sup>10</sup>.

The urbanist has to study the functionality of a project described through a cartographic system that generates an economic and cultural value; in contrast, art deepens emotional and not countable evidences.

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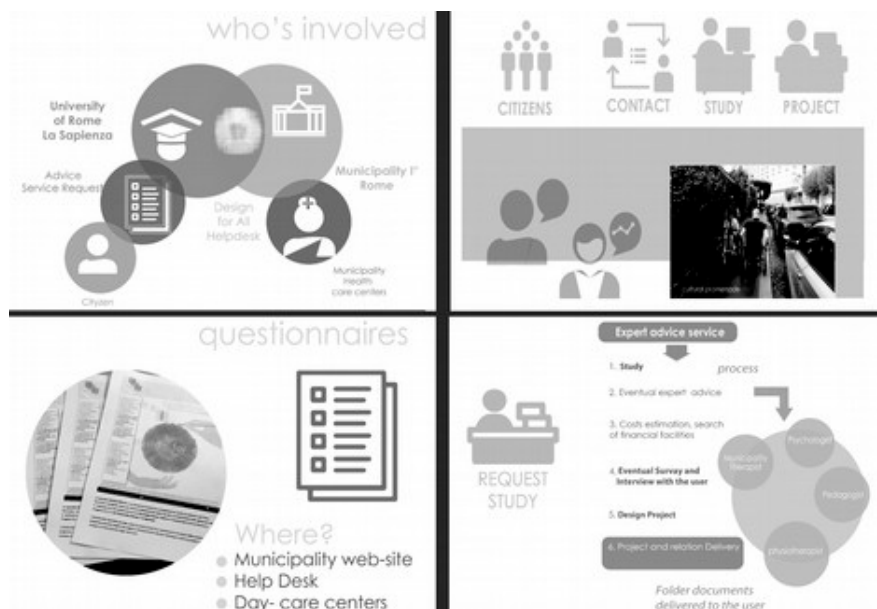
<sup>8</sup> Urban flux measurements reveal a large pool of oxygenated volatile organic compound emissions. T. Karl, M. Striednig, M. Graus, A. Hammerle, and G. Wohlfahrt. Proc. Natl. Acad. Sci., 2018

<sup>9</sup> M. Costa, Psicología Ambiental e Architettura, Come l'ambiente e l'architettura influenzano la mente e il comportamento. Franco Angeli Edizioni, Milano, 2009

<sup>10</sup> Emoción, lugar y paisaje by Joan Nogué in Paisaje y Emoción: el Resurgir de las geografías emocionales, Observatory of the Paisaje de Cataluña; Universitat Pompeu Fabra, Barcelona, 2015

#### 4 The research project: *Design for sensitive experience*<sup>11</sup>

Currently more than half of the archaeological areas of Rome are not accessible and can not be visited by users with disabilities, first among these are users with physical and



<sup>11</sup> For more information consult the website: <https://www.comune.roma.it/pcr/it/newsview.page?contentId=NEW1830175>

**Fig. 2** The help desk *Design for All's* activities.

sensory impairments, and the sense of sight.

The questionnaire is also related to the city users' senses, and it investigates their senses' experience in the city. For example, citizens are consulted about their impression on colors, smells and sounds and which of them they directly connect with Rome. Then through the help desk users can write down the sensations when they cannot get access to an archaeological site because it is not accessible; users may also mention the sites that they would like to visit the most but that is currently altogether inaccessible.

The research therefore spreads the narrative potential of the cultural contexts of Rome, investigating the invisible values, extracting "sensitive" indications, useful for a conscious planning and preparation of the urban space.

**The project encourages also the promotion of architectural design help-desks for the accessibility in the private houses**, and the breakdown of architectural barriers, supporting citizens with disabilities in the design of their home. In this way it would be logical to promote a direct link with the **municipal's technical offices** to approve the projects from the accessibility point of view.

#### **4.1 Walkable map**

The project aims to analyze the sustainable mobility and the urban elements in cultural and archaeological areas. Therefore, a *walkable map* of historical sites network of the city of Rome has been created. The map with all the accessible itineraries will be extendible to an application for mobile systems. The research expectations are:

1. The extension of the multi-sensory urban experience.
2. The extension of the principles of Universal Design to historical-cultural contexts.
3. The diffusion of accessibility to the spaces of "urban sharing" and consequently of soft mobility.
4. The enhancement of the narrative paths of the historical city.
5. To involve the citizens in the first step of the research and analysis and then, to involve them again, when the application will be elaborated, to monitor the status of the mobility and of the archaeological sites.

The walkable map, in fact, should have the purpose of stimulating the sustainable mobility, **expanding the user range who are able to move independently**. In addition,



it will not provide only objective information, but will present an 'evolved' map of user's perceptions.

The objective of the Emotional map will represent the sensations that the place will engage with the visitors.

The Mapping of emotions can facilitate and enrich the reading of the various tangible and intangible components of a place and it could achieve several goals, for example, the discovery, the sensitization, the feeling of belonging and the will of taking care of a place by the users.

*The direct involvement of inhabitants or occasional users is also fundamental in the elaboration of a shared map, increasing the transmission of values and opportunities of a place.*

The emotional map makes possible to visualize both the physical reality and its multi-sensory and symbolic perception, it can be a precious tool.

People with disabilities present more developed senses compared to the sensitivity and perceptions of those who do not report any dysfunction.

Also, the proposed research project aims to implement the active participation of these users, especially when drafting useful indications for the Design and for the collection of information on the correct elements of a city that can be described as 'accessible'.

The experimentation of an interactive map will be implemented on several levels:

1. Accessible Itineraries (physical space) *accessibility map*
2. Itineraries of perceptions *\_perceptual map*
3. Sensory stimulation itineraries *\_sensory map*
4. Empathic itineraries *\_cognitive map*

The mentioned four map levels in their overlap will be able to define a fifth: the emotional exchange between user and environment:

- *the emotional map*



**Fig. 3.** Design for all Help-desk LOGO, created by Francesca Bozza

The output of the search is to use the walkable map on mobile devices, offering a "rewriting" of the space. Thus, the identified itineraries will be highlighted on a cartographic support and are supposed to be connected in relation one with the others, through the elaboration of a "network" of archaeological areas and main points of interest.

#### 4.2 Application for mobile systems

The principles pursued by the development of an "app" that informs people of accessible itineraries that can be identified in the following keywords:

1. **Accessibility:** To highlight accessible services to people with disabilities and promoting the market for assistive devices.
2. **Participation:** To ensure people with disabilities enjoying all the benefits of European citizenship; to remove obstacles and promote the equal participation in public life and leisure activities; to provision quality services based on the community.
3. **Equality:** To reduce the discrimination of disability and promoting equal opportunities.
4. **Culture:** To promote equal accesses to cultural sites.
5. **Social protection:** To promote respectable living conditions, combating poverty and social exclusion.
6. **Promoting the rights** enlargement of international development programs for people with disabilities in EU.

The objective and subjective data collected are examined and represented, proceeding towards the definition of a graphic elaboration, developed on different levels. The different cartographic layers will represent sensorial, motor, perceptive and emotional aspects of the areas cultural, both timely and widespread.

Nowadays many applications for mobile systems for users with disabilities have been diffused. Unfortunately, they refer to other sites that consult different information.

There are applications that inform the users about mobility of public transport, but through a direct link to

Rome's public transports website it does not provide information differentiated for each disability. Furthermore, only a few restricted areas were detected.



**Fig. 4.** Walkable map\_the Accessibility "App".

The information gathered by these "apps" are related to toilets, to the main public building entrances.

For people with visual difficulties there are applications that can increase the contrast of icons and have enlarged texts. Some apps allow the use of voice commands to send emails, calls and to search the web.

The European Commission has launched a smartphone application for airport passengers to verify their rights related to mobility, travel and luggage. The launch of the application coincides with the proposal of new guidelines that clarify the existing EU rules on passenger rights and users with reduced mobility.

Mapping an area can have multiple functions: acquiring data and planning an urban area that is an action that requires analysis and cartographic representations of reality. There are many ways to represent a context, also thanks to the advent of new software that allow infinite developments, readings and project actions.

By creating a basis for an application for mobile system, the initiative could encourage the development in the Open Source system where citizens and tourists can contribute with requests and reports that will be graphically inserted.

The application will allow access to a shared platform, where users can share their own impressions, perceptions, experiences and advices.

The experimentation of a prototype "app" for mobile operating systems, smartphones and tablets can be consulted in advance when a visit to a place is planned, this completes and defines the itineraries that can be consulted based on the mobility quality and perceptions experienced by the previous users. A citizen can inform the others of new worksites that will permit the entrance to a cultural site, or that a sidewalk has been fixed.

The research elaborates something not yet experimented: the identification of accessible itinerary relative to different parameters, not only the spatial fruition but also perceived emotion, in a constant connection with the users.

There is a potential to determine the basis for the development of new *standards that include the diversity as part of the ordinary*.

In addition to facilitate the access to information and to increase the accessibility for citizens with disabilities, the “app” will improve the "usability" for all the visitors.

The application will be equipped with a guide for blind people that allows the user to explore the sights through a voice command and for people with physical disability to investigate the space through the touch of the phone screen, before experiencing it in reality. Moving the finger on the screen the user is supposed to receive information about the route to take to reach the destination established.

The services and commands available on the app, in addition to the itineraries, would concern:

- **Perception of space** and relationship between environment and person.  
*Stories and narratives: experiences in the foreground.*
- **Environmental sounds** - the "voices" of the historical center.
- **Contextual views**: characteristics of observation points, perceived effects, points of view, perspectives on the move.
- "**Chromography** ": the colors of Rome.
- **The olfactory parameter** in the city.
- **Proxemics** and personal user space.
- **Stimulation of the senses by nature**.

The project might contribute to give new opportunities to **increase the autonomy of people's mobility**, and might help the users' active participation in society, contributing to **improve the citizens' life**.

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