

URBINO:

**CAN DIGITAL MEDIA TECHNOLOGIES
ENHANCE THE LIVEABILITY
OF THE HISTORIC PUBLIC REALM?**

RICCARDO PALMIERI, BOGDAN STOJANOVIC, LUDOVICA TOMARCHIO

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studenti:

Riccardo Palmieri, 770013
Bogdan Stojanovic, 766759
Ludovica Tomarchio, 764346

relatore:

Professoressa Corinna Morandi

correlatori:

Professor Paolo Ceccarelli
Professoressa Agata Spaziante

Politecnico di Milano

Scuola di Architettura e Società
Corso di Laurea in Architecture
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ABSTRACT

The main goal is framing how the spread of digital technologies can influence the public space use and design, in particular in historic centres. According to theoretical discussions, digital technologies are relevant in planning and urban design in different ways:

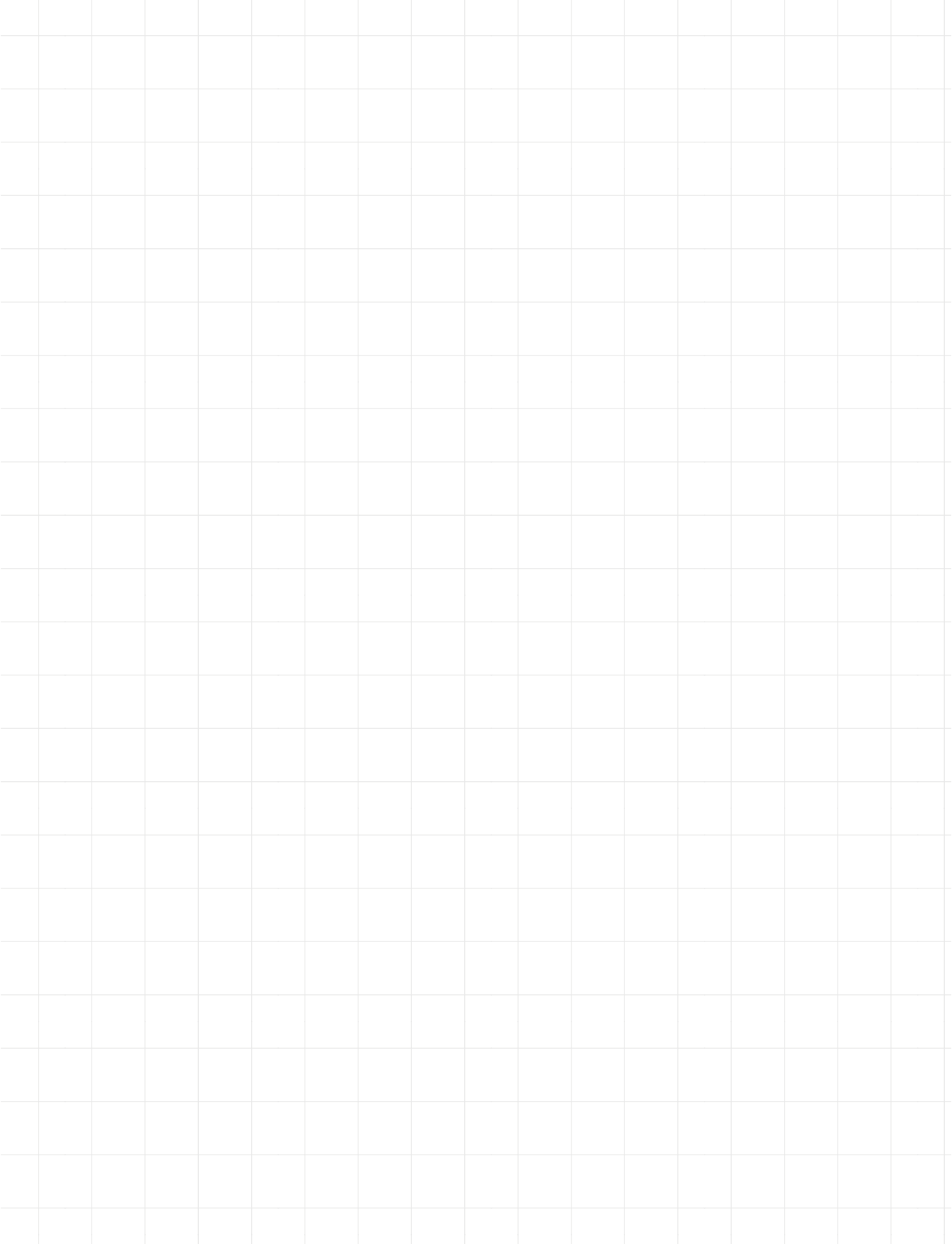
- Innovative manners of analyzing the public realm. There is a huge amount of invisible data daily produced by citizens: places are embedded with a series of media contents that once revealed can give new insights.
- Digital technologies could be considered as a tool for place-making, building a strong community upon a place. Digital technologies give an easy possibility to activities like sharing, collaborating, coordinating.
- Communication technology can connect long distant points in an invisible way. A new approach to design could be considered when planning: action points, one distant from the other, that work together to each other, once they are digitally connected.
- Technologically oriented design for the public space. There are new uses of the public spaces observed by urban sociologist, which could be enhanced by a technologically oriented design.

Based on those principles, we tested this praxis on the historic centre of Urbino. Our goal is to reactivate diffusely the public realm of the historic fabric, operating through some *action points*. All the points in the system are supposed to work together creating unforeseen synergies: what happens in one place is immediately communicated to the others, creating the effect of a spatial condensator, but diffused in the city.

The selection of the action points has been supported by data generated by the use of social network related to the public spaces within Urbino.

Moreover, the action to reactivate those points depends on the use of an application we designed that permits to foster identification between places and city users and introduce new uses, that consider even technologically oriented common activities: interactive systems of information, wired outside working places with laptop charger hotspots, media screens.

UN' INTRODUZIONE



L'obiettivo principe della tesi sta nel tentativo di comprendere l'influenza che la diffusione delle tecnologie digitali ha avuto sull'uso e sulla progettazione degli spazi, in particolare nei centri storici.

Le tecnologie digitali, ormai parte della vita quotidiana, sono già largamente oggetto di studio da parte dalle scienze sociali, economiche e politiche. Una delle prime questioni che ne deriva riguarda l'eventualità di impiegarle come strumento per la pianificazione e il disegno urbano.

A tal fine, grazie all'osservazione di esempi significativi e a riferimenti teorici, si possono considerare le tecnologie digitali nella progettazione urbana da diversi punti di vista:

- Nuovi modi di analizzare la sfera pubblica. Tramite l'uso di social media, i cittadini producono ogni giorno un già cospicuo e crescente numero di dati. D'altro canto, sempre più frequentemente ai luoghi della città sono allegati contenuti mediatici che, rivelati, possono evidenziare scenari d'uso inediti per tali spazi. Nuovi tipi di analisi sono conducibili partendo dai dati prodotti dagli utenti.
- Place-making. Le tecnologie digitali possono incoraggiare la riscoperta del *genius loci*, offrendo l'opportunità di creare più agilmente una comunità geo-localizzata. Esse, infatti, permettono di coordinare e partecipare ad azioni collettive con maggiore facilità e in minor tempo rispetto al passato. Dunque, anche secondo quanto osservato da opportuni casi studio, è possibile sostenere che la condivisione di dati che provengono dai social media e che riguardano un luogo della città – così come la creazione di una piattaforma che permetta azioni collettive – può incoraggiare nuovi legami sociali all'interno delle comunità locali.
- L'infrastruttura invisibile. Le tecnologie di comunicazione possono connettere in maniera invisibile punti anche piuttosto distanti tra loro. Lo stesso significato dei termini "isolamento", "connesso", "accessibile" risulta in tal senso mutato. Per questa ragione, anche i luoghi non perfettamente collegati fisicamente possono diventare nodi del sistema urbano, qualora dotati dell'opportuna infrastruttura digitale. Un nuovo approccio alla pianificazione pare prender forma: considerare la possibilità che punti della città distanti possano funzionare sinergicamente come fossero compresenti all'interno di un medesimo spazio architettonico di condensazione.
- Progettazione degli spazi pubblici orientata all'impiego delle tecnologie digitali. I sociologi hanno osservato l'esistenza di nuove pratiche d'uso dello spazio pubblico incentivate dall'introduzione di dispositivi tecnologici e

che possono essere incentivate tramite una progettazione che consideri queste nuove possibilità e che le indirizzi. La progettazione dovrebbe dunque restituire spazi che offrono la possibilità di trovare l'attrezzatura necessaria per lavorare in qualsiasi luogo della città – permettendo l'uso di dispositivi digitali e mobili, nonché la visualizzazione di contenuti condivisi – e di incorporare elementi che incentivano l'interazione tra gli individui e alimentano il senso di comunità.

Partendo da tali presupposti, si è provato ad applicare la seguente prassi al centro storico della città marchigiana di Urbino, oggetto della tutela UNESCO sul patrimonio storico e culturale. Infatti, pur dotata di un sistema di spazi pubblici d'innegabile qualità estetica, sussistono delle questioni portate all'attenzione dagli abitanti del luogo e osservate nell'analisi.

- La prima concerne la composizione della popolazione, costituita per la metà da studenti universitari, che mostrano uno scarso senso di responsabilità verso gli spazi pubblici, utilizzandoli alla stregua di beni di consumo;
- Una seconda questione riguarda la mancata diversificazione degli spazi pubblici. Benché la città sia dotata di un sistema di luoghi formalmente ed esteticamente impeccabile, la maggior parte delle attività e delle interazioni sociali dei principali utenti di Urbino (studenti, residenti nativi, turisti) restano concentrate esclusivamente in Piazza della Repubblica;
- Numerosi altri spazi pubblici, trovandosi in disparte di poche decine di metri rispetto ai flussi principali restano sottoutilizzati. Non hanno alcuna rilevanza nella sfera sociale (analizzata tramite social network geo-localizzati) e benché aperti al pubblico, non vi sono insediate attività, non vigono abitudini, non sussistono memorie, né è riscontrabile alcuna volontà di appropriazione.

Nostro obiettivo è riattivare diffusamente la sfera pubblica del costruito storico, operando attraverso dei punti di azione: spazi aperti pubblici selezionati per il potenziale di ospitare nuovi usi e per loro qualità estetica.

La selezione dei punti di azione è stata condotta tramite un'analisi costituita da molteplici che, come evidenziato nella teoria in Nuovi modi di analizzare la sfera pubblica, considera anche dati e contributi provenienti dai social network.

Infatti, una volta definito il tipo di uso che delle diverse piattaforme sociali su dispositivo mobile si fa nei luoghi, si possono interpretare i dati generati dagli utenti, in termini di rappresentatività sociale di un luogo per una comunità, tipo di utenza e uso dello spazio.

L'analisi condotta si è quindi mossa su due direzioni complementari, una tra-

dizionale tramite osservazioni empiriche in luogo, interviste e una digitale tramite l'analisi di dati provenienti dai social network, entrambe finalizzate a distinguere i punti di azione di progetto, allo stato attuale sottoutilizzati, dai punti di ancoraggio, ossia dai fulcri della vita sociale per le diverse categorie di utenti a Urbino.

L'azione proposta per riattivare i luoghi selezionati corre su due filoni complementari. Da una parte un'applicazione da noi progettata, pensata in modo da creare un collegamento tra i luoghi della città e la comunità locale, favorendo fenomeni di appropriazione e rafforzando i legami sociali locali. A partire dalla possibilità di attivare azioni di finalizzate alla creazione di luoghi, tramite piattaforme digitali che facilitano azioni collettive su questi, l'applicazione permette agli abitanti di condividere contenuti mediatici localizzati, di proporre e sostenere progetti collettivi auto-finanziati, rafforzando il legame con i luoghi, nonché sviluppando affezione e responsabilizzazione verso gli spazi pubblici.

L'applicazione, inoltre, creerà un database riguardo luoghi, eventi, persone e progetti d'interesse comune all'interno del centro storico di Urbino.

Questi dati saranno utilizzati come risorsa del masterplan, pensato in termini di punti di azione, convertiti a nuovi usi, che lavoreranno sinergicamente grazie all'Infrastruttura invisibile: un continuo passaggio d'informazioni da un luogo all'altro – streaming audio-video, reciproca comunicazione riguardo persone, eventi e progetti in tempo reale.

Il masterplan è stato pensato anche cercando di rendere accessibili i luoghi d'intervento nella sfera digitale: oltre che comunicare tra loro, essi, infatti, saranno in continua connessione con certi punti – detti punti di ancoraggio – e considerati il fulcro della vita sociale urbinata.

Per riattivare i luoghi di azione si è pensato di agire sia attraverso la disposizione di attrezzature che supportano particolari attività negli spazi pubblici aperti, sia attraverso la riconversione di alcuni edifici sottoutilizzati prospicienti le aree selezionate.

Le attrezzature in questione in questione, seguendo il principio della Progettazione degli spazi pubblici orientata all'impiego delle tecnologie digitali, sono pensate per supportare attività collettive all'aperto, anche tramite dispositivi tecnologici: sistemi interattivi d'informazione, spazi per lavoro all'aperto dotati di sistemi per ricaricare gli oggetti digitali, schermi di trasmissione. Le funzioni introdotte negli edifici pubblici sottoutilizzati prospicienti i punti di azione, sono progettate col fine di coinvolgere i differenti utenti della città (studenti, residenti nativi, turisti), creando inedite sinergie.

INTRODUCTION

The first part analyzes the state of art of the main model that comes to mind when considering the topic of technologies and urban settlements: the smart city. Born as a way to promote environmental efficiency in term of energy production and transportation, it became a way to brand different types of operations, whose objectives are usually not that clear. In this sense we think it is necessary to take distance from this model and promote a more focused discussion that considers a technologically updated way to design and think about public realms and spaces (*The myth of the smart city*). Then we try to explore the main features of these digital technologies: information flows provided through an “invisible” infrastructure, visualized in screen through mobile devices. The “invisible” infrastructures redesign, as well as the heavy ones, centralities and marginalities (*Railroads, roads, cables: the evolution of the infrastructures* and *From the symbol, through surface, to volume: the evolution of the interface*). By analyzing all those aspects, we consider how interventions based on digital technologies are particularly interesting when we come to Italy, a nation that hosts a series of relevant historic centres whose public realm functioning could be enhanced by digital non-invasive actions, as it is shown in some examples we decided to study. (*Invisible infrastructure over historical urban settlements: best practices*.)

A focus on the main assets of the research is thus necessary: how digital technologies could enhance the liveability of the public realm in historic centres.

The first possible field of intervention is using the digital technologies to help in fostering local communities ties, sense of appropriation towards places and co-managements of them.

There are different opinions about the consequences of the use of digital technologies into the social bonds of citizens, and among these latter and places: if it will be the creation of a more segregated society, where people tend to meet online causing its demise or if it will be a chance to create new communities, that recognize the reciprocal existence thanks to the use of social media and perform new ties in a more active, caring, responsible way towards urban space (*Digital technologies: threat or empowerment for the public realm?*). Thus the difference among public, private and common places are traced; considering the latter as privately or publicly owned places that play a relevant interest for a large group of people, that tend to have a responsible and active action towards them. (*The history and registry of common good*).

The advent of digital technologies has opened the possibility to create new ties among local communities, through the sharing of localized media contents; it

has also created the possible promotion of a more responsible behavior toward public spaces thanks to the publishing of open common data (for example about environment); finally blogs or applications could be used to promote participated design actions or to speed up and optimize the management and coordination of collective actions toward places (*Common Good approaches and city planning through digital technologies*) as it has been explained in some examples (*Best practices of “common oriented” urbanism*).

Another interesting tool that could be used by urban planners and designers in order to better understand and promote different behavior in a place are maps.

New digital real time maps overlap different types of information with the spaces of the city (people, feelings, memories, pollution), making the new maps the preferred way to give visibility to invisible processes. The information map is often open-source edited through direct contributions of users and volunteers (*The Renaissance of maps*).

In particular, maps made by the collection and interpretation of user generated data created through commercial social networks (*Twitter, Instagram, Foursquare, Flickr*), allow new insights and reading about the use of the space. Analysis, such as *GPS* flows analysis, profiling the space users, identifying representative place could be conducted through the use of user's generated data, produced by social media (*Maps interpreting social network data*).

Maps are significant in different moments: they could help the planning and designing process, layering the physical space with interesting information, but when published in *real-time* web application, they could be the main tool to create an open-data set that influences the action and the use of people toward places. People could move themselves in the city going to the most crowded places or friends' location creating what in cybernetics is defined as *feedback loop*, a system –the use of space in the city – that evolves in a nonlinear way for the continuous reinsertion of data (*Living maps: navigating the urban spaces in a scattered way*).

Following this logic of digital informed movements, we tried to control them, proposing a strategy based on networked points, that work together thanks to the reciprocal evidence within the “invisible infrastructure” communicating each other, and reproducing the effects of a spatial condensator. Isolated spaces could have a public social relevance when their existence is evident on social networks and web applications or when they are anchored through digital communicating infrastructure to the places that have a major social public activity (*New contingencies: from hierarchic development to a networked punctual strategy*). At the same time we try to identify new uses of the public

spaces that could be enhanced by a technology oriented design. A design that considers the possibility to find the equipment necessary to work everywhere, with the mobile devices, to visualize common media contents, that incorporate elements fostering interactivity and common sense (*Digital- technologies oriented urban design*).

This type of intervention could be particularly useful in a city like Urbino. In the middle of Italy the city is not easily reachable from the major nearby Italian cities; it has its whole city centre considered as *UNESCO* heritage and a major university campus. As a consequence of those main features, the chief city users are residents, tourists and students, that being almost the fifty per cent of the population show a little sense of affection toward the public space, treating it as a commodity. The *UNESCO* patronage and the isolation create the necessity to redefine marginalities within the historic fabric in a non-invasive way (*Sketching Urbino: brief outlook of the city and Isolation, City-Campus, Heritage: why Urbino is emblematic as a case study*).

Moreover during interviews and participated tables with the local communities, we understood a issue felt as a major problem: the lack of diversification of public spaces. Although the city is equipped with a system of public spaces formally and aesthetically of undoubted quality, activities and social life of the three main categories of users (students, residents, and tourists) are particularly concentrated in Piazza della Repubblica with other few chief poles (*Characteristics and results of a participated urban planning approach: i tavoli di lavoro, The UNESCO implementation Plan and the Urbino Strategic plan: opportunities for new approaches?* and *The resulting scenario*)

To test this assumption and to understand then what are the most used public spaces, and what are, on the contrary, underused, we have developed two main approaches: a traditional analysis that observes the use of the space, the major flows according to city users, the permeability of the public open spaces, (*Analysis of the public open spaces: uses, patterns of mobility, permeability, cultural emergencies and perceived image of the city*) and a digital one that explores how the main social media (Foursquare, Instagram, Flickr) are used in the public spaces (*Digital analysis of the public realm*). Those analysis, could help in understanding what are the most representative venues for certain city users, what are the profiles using certain spaces, and when and how much public places are used (*Digital analysis of the public realm*).

A comparison between the two types of analysis, in the case of Urbino, shows some results matching, helping us in better framing the public spaces dynamics (*Matching results: a map of public spaces underused by residents and students*) and

still reaffirming and enlarging the concept that the major public life is played between Piazza della Repubblica and Piazza Risorgimento, toward South.

After considering all the public spaces of the city and their lack of differentiation, we propose to reactivate diffusely the public realm of the historic fabric, operating in some *action points*.

Those spots (that are open public spaces) were selected for aesthetic qualities and for their potential to host new uses, in order to reactivate different parts of the city.

By the two typologies of analysis that we carried on, those spaces have no social relevance and are underused. All those points could work synergically thanks to an invisible infrastructure assuring that new potentiated places and their activities will be anchored to the most used public spaces in the city and connected to each other (*A system of attractive "points" spread in the urban settlement.*)

In order to achieve the reactivation of those place we would like to proceed following three main key actions:

- *Infrastructure.* What happens in one place is immediately communicated, through an audio-video projection or through a flow of data – people present, events – to the others, creating the same effects of a spatial condensator, but diffused in the city. At the same time all the activities in these places will be communicated to the most utilized public places of the city, creating a real time connection system of public spaces;
- *Participation.* These types of operation will be applied not only to the project area but also to the whole urban public space, to encourage, for instance, practices that favor the appropriation of the public spaces by students: an application that let the city users share all the localized media contents they produce and self-fund common projects of public interest, could bond local communities ties and develop new sense of affection and responsibility towards the public spaces.
- *Design* to reactivate those places, we introduce new uses as equipment to support technologically - oriented activities in the open public space and to rehabilitate public underused buildings (*Participation, infrastructure, design: three key issues for the intervention*).

**DIGITAL TECHNOLOGIES: A NON-INVASIVE
TOOL TO ENHANCE AND DIVERSIFY THE USE
OF THE PUBLIC SPACE**

1.1

How the development of digital technology is influencing the spatial evolution

1.1.1 The myth of the Smart City

The spreading of digital technologies had huge consequences on our everyday life. On one hand the new communicating technologies created a de-materialization of social relationship but on the other side they created new practices in the reality and in the city in particular.

We can consider now a multidimensional condition of spaces; where physical reality, the historical one, is embedded with levels of information and data, given back to the user through his mobile phone.

The necessity of public administration to face the changes introduced gave birth to a semi mythological model the Smart City. Considered at first as a European model in terms of environmental sustainability and energetic efficiency, it became a truth urban strategy with not defined goals. Surely one of the main goal of Smart City is to create, even through the use of digital technologies synergies among public administration, private operators, and common citizens.

Technologies alone are not able to create a better city, they are, maybe an instrument to grasp, organize and conciliate the different parts.

The digital revolution has dramatically changed our way of living, including sensible transformations on the urban environment. The rise of new technologies has gradually involved many different aspects of our everyday life – through smartphones, tablet, interactive object – and if on one side this has led to a further dematerialization of our acting fields, on the other hand – especially in the last times – there’s been a growing interest for these digital researches towards the urban space. This directive can probably be considered as the result both of the growing interest demonstrated by the “real reality” towards the tools and properties of the virtual one – as a chance to get more

flexible, attracting, on-going – both of the increasing awareness of the *digital planner* towards the importance of site specific characteristics and local environments.

Even if it could sound peculiar, the interest at understanding the effective consequences induced by the digitalization on the humanized space – and, most of all, on the urban one – has been quite limited. The research was mainly driven in the direction of identifying and investigating the technical-technological aspects that this digital revolution induced and to read the whole phenomenon in a critical and dialectical apparatus attached to an order of things preceding the informatics revolution.

Since the beginning, the digital space was intended as opposed to the real one, as a chance to create *alternative realities*, replacing the physical one. Talking about virtual reality, Mario Biraghi¹ writes:

“[...] *the image exceeds the reality, or it complete substitute reality itself. As a further confirmation of the fact that the real object in question is not reality as such, but rather its image.*”²

The attempt to overcome the physical dimension with a virtual one has quickly shown his limits. Has become evident that what happens in cyberspace is insolubly connected to the physical reality of the place and the digitization of the urban dimension is fundamental starting point in reformulating the criteria of judgment and rethink the areas of intervention.

Virtual space and digital space are not two opposite logical and dialectical categories, but two aspects which mutual influence is much more interesting and prolific of single differences. It follows a multi-dimensional meaning of the urban space in which to the physical reality, historically layered, additional levels of information and data go overlapping, experienced from the individual through personal digital device, such as phones, tablets, smart objects.

In this sense, the concept of *smartness*, which seems to be one of the trend topics of the contemporary fetishism for polite words, is placed under clinical observation, as to understand which are the authentic characteristics

1 M. BIRAGHI (Milano, 1959), is a professor of History of Architecture at Politecnico of Milan. Among his recent books we report *Progetto di Crisi. Manfredo Tafuri e l'architettura contemporanea* and *Peter Eisenman*.

2 M. BIRAGHI, *Storia dell'Architettura Contemporanea II*, Einaudi, Torino, 2008, p. 503;

that make a city *swift* and *clever*.

Although technical experts and researchers have been discussing about the issues and the definition of *Smart City* for many years, the official start time on a European scale of the Smart Cities politics is dating back to 2007. As part of the *European Strategic Energy Technology Plan (SET-Plan)*³, the European Union auspices of the creation of a network of thirty *Smart Cities* by 2020; these cities, samples of high energy efficiency standards, should have moved in the direction of the minimization of emissions with building systems and intelligent transport, as well as with a better use of information technologies and communication both to improve energy efficiency and for the education of new professional figures. During these years, it was still absent a focus of the Smart City that will be considered relevant afterwards: mobility, infrastructure and intelligent transport systems.

Back in 2008, Paolo Fusero⁴, Professor of Urban Planning at the University of Pescara, wrote:

*“Designing the territories in a smart way means creating an adequate urban planning able to create synergies between the different territorial strategies: the enhancement of the identity of places, the environmental and landscape heritage preservation, the infrastructures and service equipment [...]”*⁵

Anyhow the research framework regarding the smart city will be defined in actual content and objectives only in 2010. At the meeting on December 16, 2010 in Vienna, which was attended by eighty participants from fifteen European countries, seventy European medium-sized cities are studied referring to six specific characteristics, able to test the level of smartness of these cities: economy, people, governance, mobility, environment, living. What makes this research methodologically innovative is the involvement of additional vari-

3 *European Strategic Energy Technology Plan (SET-Plan)*, establishes an energy technology policy for Europe. It's a strategic plan to accelerate the development and deployment of cost-effective low carbon technologies. The plan comprises measures relating to planning, implementation, resources and international cooperation in the field of energy technology;

4 P. FUSERO (Genoa, 1960), is Professor of Urban Planning at the University of Pescara. His main research interests range from the development of innovative urban and territorial planning instruments to the development of digital networks and the concept of “Smart Cities”.

5 P. FUSERO, *Infrastrutture e territori Intelligenti*, document from the lecture Sistema portuale medioadriatico, Pescara, 16-17 September, 2008, p.6, via http://www.unich.it/fusero/HTML_university/publicazioni.htm;

ables out of the economic, particularly stressing the importance of governance and participation in the project of classifying a city:

“Secondo lo studio, per avere una città smart occorre quindi “ri-pensare”, “ri-guardare” e “ri-progettare” la Città attraverso il coinvolgimento di una molteplicità di soggetti, locali, nazionali e internazionali (si pensi al Grameen Creative Lab di Wiesbaden), pubblici e privati, che siano in grado di operare in maniera coordinata per lo sviluppo del territorio e siano capaci, in particolare, di promuovere azioni concrete a favore del talento e della creatività, ritenuti fattori determinanti per lo sviluppo sociale, economico e culturale.”

The involvement of various stakeholders should include not only personalities involved in politics and public administration, but also the citizens in general. The strategic goal for smart communities, in this sense, identified the need to improve the quality of social life of the city.

In just one year, from 2011 to 2012, the importance of expanding the scope of the survey was made compelling: from just the energy issues and sustainable mobility, the discourse has expanded to the problems of water conservation, of the virtuous cycle of waste, to the theme of sustainable building. But the need not to focus efforts only on the technological aspects are clearly identified in the *White Paper*, produced in 2011 by the *Expert Working Group* in *Smart City Application and Requirements*:

“The concept of Smart Cities is gaining increasingly high importance as a means of making available all the services and applications enabled by ICT to citizens, companies and authorities that are part of a city’s system. It aims to increase citizens’ quality of life and improve the efficiency and quality of the services provided by governing entities and businesses. This perspective requires an integrated vision of a city and of its infrastructures, in all its components, and extends beyond the mere “digitalization” of information and communication: it has to incorporate a number of dimensions that are not related to technology, e.g., the social and political ones”⁶

An accepted definition of what *Smart City* means in practice doesn’t exist yet, as the concept goes further beyond the simple digital enhancement of a urban center; being smart is more about the capability to accord the physical capital with the social one and to develop better services and infrastructures.

6 AA.VV., Net!Works European Technology Platform, *Smart Cities Applications and Requirements*, White Paper, May 2011, p.7, via http://www.networks-etp.eu/fileadmin/user_upload/Publications/Position_White_Papers/White_Paper_Smart_Cities_Applications.pdf;

*“It is a mistake to think that making smarter cities requires just more investment in IT (Information Technologies) – what cities need to be able to do is to use IT as a means to deliver local (and national and EU levels) aims and objectives. The most important issue confounding efforts to make cities smarter is not the development of appropriate technologies per se, but to tackle the difficulties in changing organizations and existing ways of working to use these new technologies to deliver smarter cities.”*⁷

Create a smart city means first create synergies, to ensure the functioning of a complex system - as the urban one is - which has as a prerogative the widespread prosperity of the community. Technologies themselves cannot be in any way guarantees of the development and welfare of the city in the twenty-first century, they are an instrument of coordination and incentive of the parties. Means to enhance the specificity of places and protect the environmental assets, while stimulating policies and strategies that are aimed at modernization and social and cultural renewal.

*“Pensare una Smart City, al di là dei facili slogan e delle strumentalizzazioni propagandistiche di amministratori e imprese, dovrebbe dunque rappresentare una sfida epocale, qualcosa che o si riesce a tradurre in costruito sociale diffuso e democraticamente e culturalmente condiviso, oppure rimarrà una opzione tecnocratica ed elitaria.”*⁸

7 *ibidem*, p.9;

8 G. FRANZ, *Smart City vs Città Creativa? Una via italiana all'innovazione della città*, Lulu Press, 2012, p. 32;

1.1.2 Railroads, roads, cables: the evolution of the infrastructures

In history, infrastructure has always been the instrument to assure the connection of a place: being close to an infrastructural node was necessary for the economical political and cultural well-being of an area. The connection with the network once assured by heavy infrastructure (roads, railways, water river) in the society of services is going towards the technological dotation of a place. The infrastructure is not limited only to the technological equipment, but consists mainly in the networking of individuals and the number of new relations that are established between them. The fact is that social networks have acquired, thanks to the incentive offered by digital technologies, increasing importance, for their qualities of flexibility, adaptability and resistance to change. This is the system of organization has shown to be more in line with the needs reality of a changing and diverse as contemporary. The digital infrastructure is also not affecting the environmental and cultural heritage, and it acts redefining centrality and marginality in a cost effective way. Especially in Italy, actually characterized by a considerable heritage, not only private operators, but also the government and planners must address their interest in a development in this direction.

The history of the human settlements has been strictly influenced by the evolution and development of the infrastructural network systems. Areas interested by infrastructures were privileged, they grew rapidly and became strategic points on the maps, as nodes of the system.

The relevant of the role by these covered is evident and the results came in terms of political, economical and social transformations. The technological development induced the development of new urban models, further induced by the demographic increase and by the progressive depopulation of countryside, moving towards the urban centers.

Whether during the nineteenth the infrastructural evolution was oriented towards the creation of mobility networks, nowadays the focus has shift towards other different network categories, such as telecommunications and energy systems.

In society which is more and more oriented in the services production, the use of information and communication technologies can't be just considered as a recommended choice, but it becomes a *conditio sine qua non* for the development and competitiveness of territories. The strategic framework that comes out is constituted by a set of intelligent territories made of different kinds of networks, where each pole is the intersection and switching point of multiple networks: not dealing only connections by road, rail, aircraft, but also telecommunication systems and digital networks.

However, we should not think that the old form of urban settlement, connected to the elder type of infrastructure system, are thus to be considered obsolete; roads, railways, airports still exist and they still play an indispensable role in connecting territories and people. What got obsolete here is the interpretation of certain territorial figure using concepts which were connected to the previous state of things; the deep revolution operated by these new types of infrastructures, consist in the disposition of a new anti-hierarchical order between the parts of the network.

Talking about what he defines the *Network Society*⁹, Manuel Castells¹⁰ gives a precise and very significant definition of the network and of its most typical working dynamics:

“A network is a set of interconnected nodes. A node is the point where the curve intersects itself. A network has no center, just nodes. Nodes may be of varying relevance for the network. Nodes increase their importance for the network by absorbing more relevant information, and processing it more efficiently. The relative importance of a node does not stem from its specific features but from

9 “The definition, if you wish, in concrete terms of a network society is a society where the key social structures and activities are organized around electronically processed information networks. So it's not just about networks or social networks, because social networks have been very old forms of social organization. It's about social networks which process and manage information and are using micro-electronic based technologies.”, Manuel Castells' Interview *Identity and Change in the Network Society*, document from the lecture *Conversation with History*, Institute of International Studies, UC Berkley, May 2009;

10 M. CASTELLS (1942, Hellín) is a Spanish sociologist especially associated with research on the information society, communication and globalization;

its ability to contribute to the network's goals."¹¹

As Castells stated, the concept of the network is not a 21st Century invention, it represents a figure rooted to the human organization, since it embodies the heart of the social interaction. The reason why these forms of organization have just recently significantly emerged is because they have had – and still have – material limits to overcome and these limits can be said linked to availability of technologies. Thus, under the conditions of pre-electronic communication, networks resulted less efficient than vertically organized control structures.

With the diffusion of micro-electronics based communication technologies, plainly together with other socio-economical conjunctures,

*“networks became the most efficient organizational forms as a result of three major features of networks that benefitted from new technological environment: flexibility, scalability and survivability.”*¹²

Since what we want to endorse with this research is not an attempt to defend the technological innovation at any cost, nor put over a generic idea of *smartness* as a necessary and sufficient condition for the success of the cities of the future, but try to demonstrate what benefits digitization led and may lead to in terms of critical interpretation of reality and development of tools for targeted and aware actions in urban planning strategies, it is worth dwelling on the three terms previously introduced by Castells' research in describing the network main characteristics:

- **FLEXIBILITY:** networks can reconfigure according to changes in the environment, keeping their goals while changing their components.

Adaptability is synonymous with no obstruction of the existing balance: the digital network has the ability to adapt to specific places, providing benefits and incentives for the use of them, instead of replacing the existing order of relations. In addition, the network has the embedded capacitance to be continually transformed and updated, making it the connection system more efficient in the informational age, in which the ceaseless editing is a prime necessity;

11 M. CASTELLS, Informationalism, *Networks, and the Network Society: a Theoretical Blueprint*, text published in *The Network Society: a Cross-Cultural Perspective*, Edward Elgar, Northampton, 2004, p.2;

12 *ibidem*, p. 6;

- **SCALABILITY:** networks can expand or shrink in size according to the needs;

The scalability of the network allows for a truly comprehensive coverage of the territory, not according to a pre-existing hierarchical system, but ensuring at each point in the system, even at the more peripheral, the same level of coverage and participation in the network. If the elder infrastructure used to work *branching* from a primary system to a series of increasingly secondary ones – from the highway, through the provincial road, to the small local street, with the result that in the more fringe area the infrastructural coverage got increasingly weak and thin, the digital network functions with a system more similar to the percolating bodies: a sponge in which all access points have the same range in the amount of information received and the number of information submitted;

- **SURVIVABILITY:** as they have no center and can work in many different configurations, networks are resistant to the attacks to their nodes and codes;

The network is not represented by a single point, but by the set of points and the synergies between them are established. Nodes only exist and function as components of the networks. The great resource of the network consists once again in not having a system of vertical organization, which enables individual points having the same relevance in the system, regardless of the position of these in the network. Peripheral points, therefore, have the equal importance, in terms of maintenance of the network, that points located in areas closer to the barycentric point of the system.

Thus, concepts such as *centrality*, far from disappearing, have to be interpreted in different ways, as they match multiple geographical forms. The previous dichotomy between center and periphery, local and global is blurring; as places can be said to have a global *quiddity*, in relation to the level of digital interconnection they present. An observation of the territory based exclusively on the topography is reductive; since, even if providing proper tools for the physical evaluation of an area, it is not able to detect the level of connection, nor the potentiality of further connections.

Those conditions are introducing a new paradigm that goes under the name of *digital divide* and is defined as the economic inequality between groups in terms of access to, use of, or knowledge of information and communication technologies. Originally considered as a notion concerning exclusively the

yet existent dichotomy between developed and undeveloped countries; on the contrary has been proved that there exist a yet present gap in competitiveness even between sturdy digital networks reached territories and bordering territories, such as rural or mountain areas. This gap is probably getting thicker as the traffics of exchanged information increase and the development of *ITC* application will require wider and wider bands and as a result the inequality between territories are likely to intensify.

This speech leads to the conclusion that it is time for a second phase of the digital networks development to start; based on a closer collaboration between public and private operators, in order to build and properly manage the networks of infrastructures and the services provided online.

The provision of new infrastructure networks would enable more bordering centers to keep up with the demands of the contemporary city and stimulate a renewed use of public spaces, but all those projects must go together with the creation of synergies between public and private operators. Public administrations can't further accept the development of digital networks is determined by purely commercial logics, they must elaborate an overall strategy that, together with the warship the legitimate interests of the private operators, is ensuring and considering the development policies of the various territorial areas. It is necessary, therefore, that the digital network starts being considered, along with other network infrastructures, as a strategic goal for development. Hence the value of digital networks intended as a new category of public works.

“If urban life still matters in the 21st century, then we must understand the boundary conditions that information technologies create for the design of cities. Infrastructure sets the stage for this not only in pipes, ducts, wires and antennas, but in opportunities to rearrange resources we all need.”¹³

Therefore, becomes evident the nodal role taken in this regard by a new system of infrastructure no longer linked only to the creation of roads, highways and hydro-electric networks, but especially aiming at the provision of services and the availability of a digital and technological system to serve as a platform for the activation, operation and control of these services. Thus new infrastructural networks are supposed to afford users higher efficiency in real-time information system applied in the sectors of environment, society and economy.

13 H. FREI AND M. BÖHLEN, *MicroPublicPlaces*, Situated Technologies Pamphlets, n.6, The Architectural League of New York, 2011, via www.situatedtechnologies.net;

“From marginal areas in digital territories’ could be a slogan that summarizes policies for sustainable development based on the spread of digital networks and the consequent range of online services for citizens and businesses in those areas that until now, by inheritance negative of the past, because of weakness in strategies, or simply to objective natural conditions, are remained on the margins of economic development.”¹⁴

Often marginal territories from the economic point of view preserve characteristic of incredible relevance under considering their environmental and historical heritage and the tendency to the depopulation and impoverishment of economies, as the on-going trend for those territories, could be countered stressing the absolute importance of social and landscape values, together with previsioning a range of technological services that should be equal – if not superior – to that of metropolitan areas.

“Teleworking, virtual presence, teleconferencing systems, distance learning, ASP services to business can make attractive the transfer outside of metropolitan areas, where you can find more favorable purchase prize for real estates, better security condition, higher environmental and landscape quality, to a wider range of citizen and businesses.”¹⁵

What was supposed to be stressed in this chapter is the possibility to create new centralities even in isolated areas, for a redefinition of the systems due to the implementation of digital infrastructures.

The city of Urbino¹⁶, in the Italian region of Marche, as it will be further discussed afterwards in our research, benefits of this condition of isolation. The municipal territory mainly extends on a hilly zone, hence the roughness of the area and the lack of road and rail networks – that would make more convenient and faster the connection with the city – have for centuries declared the position of isolation of the Marche town. It is precisely this condition of poor infrastructure, however, that worked in the conservation of the beautiful historical heritage, which in 1998 earned to the historic center of the city the

14 P. FUSERO, *Infrastrutture e territori Intelligenti*, document from the lecture *Sistema portuale medioadriatico*, Pescara, 16-17 September, 2008, p.2, via http://www.unich.it/fusero/HTML_university/pubblicazioni.htm;

15 ivi;

16 Urbino, is a walled city in the Marche region of Italy, south-west of Pesaro, a World Heritage Site notable for a remarkable historical legacy of independent Renaissance culture, especially under the patronage of Federico da Montefeltro, duke of Urbino from 1444 to 1482;

protection by UNESCO¹⁷.

Dealing with this theme, Gianfranco Franz¹⁸ argues about the possibility for Italian cities, especially for the small and medium ones, to find their own way to interpret and carry out the *Smart City Ideal*.

“ [...] sono convinto che tale risposta, originale e autenticamente italiana, possa essere trovata da molte città proprio nella coniugazione di ‘smartness’ e creatività con cultura e ‘heritage’, ma anche con la condizione di vivibilità, lentezza, sostenibilità, che le città medie offrono rispetto alle metropoli. Sono caratteristiche, queste, tipiche delle città della provincia, ma anche della città idealmente sostenibile. Nelle piccole città di provincia è più difficile fare innovazione, sviluppare tecnologia, produrre creatività e farla affermare: la funzione della provincia è produrre talenti da esportazione, che poi si affermano nelle grandi città, italiane o estere. Ma è in queste città che è più facile consolidare pratiche di vita quotidiana più sostenibili, [...] dalla promozione di processi realmente partecipativi fino alla realizzazione di politiche urbane virtuose, in tema di welfare, di integrazione sociale e etnica, di servizi avanzati, di assistenza, ecc... Queste caratteristiche offrono un banco di prova tutto da sperimentare sia dal punto di vista degli avanzamenti tecnologici, nelle sei caratteristiche principali di una Smart City, sia dal punto di vista della creatività e delle politiche culturali, tanto orientate al consumo, quanto orientate alla produzione.”¹⁹

Therefore, ancient cities whose historical, cultural and natural properties were preserved, besides for an interest of the community and for appropriate conservation policies, also for a favorable condition of geographical isolation could establish themselves as core nodes of the network, without sacrificing their own peculiarities. The provision of new infrastructure networks, as well as a proper synergy between public and private operators, would enable these centers to keep up with the demands of the contemporary city and stimulate a

17 The United Nations Educational, Scientific and Cultural Organization (UNESCO), is a specialized agency of the United Nations (UN). Its purpose is to contribute peace and security by promoting international collaboration through education, science, and culture in order to further universal respect for justice, the rule of law, and human rights along with fundamental freedom proclaimed in the *UN Charter*. This institution will be discussed in the chapters to come;

18 G. FRANZ, Architect, Associate Professor of Urban and Regional Policy in the Department of Economics, University of Ferrara since 2008. Beginning in 2001, Regional Planning Researcher in the Department of Architecture and the University of Ferrara;

19 G. FRANZ, *Smart City vs Città Creativa? Una via italiana all'innovazione della città*, Lulu Press, 2012, pp. 12-13;

renewed use of public spaces.

11.3 From the symbol, through surface, to volume: the evolution of the interface

Historically, architecture has always been the bearer of ornaments, symbols, images and information. The didactic goal of transmitting a message – in a more or less allegorical form – is one of the constants of humanity, with the aim of leaving a cultural heritage to the generations yet to come. Nevertheless, the phenomenon of the dynamic return of media information in the built environment is a relatively recent one. As even more recent is the ability to deliver such information on personal digital media like smart phones, tablets and GPS devices, of whom an increasing number of users is equipped with. If Virtual Reality entailed a replacement of the physical place, as a wish of affirmation of another world; Augmented Reality, which represents the most recent landfall of the technological innovation, intended to be an implementation and reinforcement of the existing reality, not replacing it, but suggesting new uses and behaviors in the physical environment of the city. The results can be addressed in terms of the revaluation of the public spaces and of the use that people make of them. In historic cities in particular, the mechanism of overlapping of a series of levels of data and information to the physical reality could be an ideal practice to reconcile the demands of preservation of cultural heritage, without losing sight of the needs of dynamicity, connectability and networking of contemporary cities.

Apart from any aesthetic consideration, improvements in *Information Com-*

*munication Technologies (ITC)*²⁰ are certainly impacting on the way in which the urban spaces are experienced by the users. At this purpose it is interesting to think about the form of those transformations. Moreover, what is important to research and observe is whether the technological development is changing the relation towards the spaces, making them gradually irrelevant or if or those new relations established with the place are revealing hidden characteristics, granting them a new *genius loci*.

Lev Manovich²¹, in a famous research of his, sustains that overlaying layers of data to the physical reality is the beginning for the creation of a new generation of spaces, which are slowly becoming realities. The Russian theorist defined this phenomenon of levels superimposition as *augmented space*, described as “the physical space overlaid with dynamically changing information – multimedia from often localized for each user”²²

However, the concept of further information laying in the physical spaces and determining an overlapping of significance goes back centuries in the history of architecture. Starting from the first architectural monuments – which were carriers of symbolic meanings and messages and their apparently formal-only ornaments were in fact the code of a book written in stone – up to the modern architectural buildings expressing text or signs, becoming screens or projection surfaces themselves, the phenomenon of communication in environment was not new.

20 *Information and communications technology* or *information and communication technology (ICT)*, is often used as an extended synonym for *information technology (IT)*, but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. (via W. MELODY, R. MANSELL, B. RICHARDS, *Information and Communication Technologies: Social Sciences Research and Training: A Report by the ESRC Programme on Information and Communication Technologies*, Economic and Social Research Council, 1986)

21 L. MANOVICH (1960), is an author of books on new media theory, professor in Computer Science program at City University of New York, Graduate Center, U.S. and visiting professor European Graduate School in Saas-Fee, Switzerland. Manovich research and teaching focuses on digital humanities, new media art and theory, and software studies. His best known book is *The Language of New Media*, which has been widely reviewed and translated into eight language;

22 L. MANOVICH, *The poetics of augmented space*, Visual Communication, n. 5; 219, 2006, via <http://vcj.sagepub.com/cgi/content/abstract/5/2/219>;

Debating about the application of technologies in architectural and urban context, we cannot skip to mention Robert Venturi²³ and the relevance he attributes to electronic billboards in Las Vegas during the Informational age. In his *Learning from Las Vegas*²⁴, published in 1972, he decided intentionally to investigate a common space: the space of entertainment and consumption of the Vice City. He stated that architecture should learn from this advertising culture, to better understand the paradigms of communication and attention catchment. Venturi completely denied the modernistic ideology and its paranoid obsession for minimalist ornament-free spaces, proposing to go back to traditional forms of architecture. In his classical definition of architecture, spaces had an iconographical valence and what seen by his contemporaries has a redundant decoration, was instead a conscious and rich iconographic vocabulary of visual narratives.

Moreover what is interesting to point out is the changed perception of the urban space as Venturi's observation reveals. Las Vegas was not – and still *is* not – dominated by buildings, but by insignias. Thus the perception of public space was constellated by advertisement and indication; the higher insignias were leading toward buildings and the lower insignias were indicating events happening inside. Approaching Las Vegas, you could perceive the growing density, immediately understanding the core of the city: the physical signs of this city center was not the gathering of buildings, as it usually happens in traditional cities, but densification of insignias. It was a spatial communicating way, really different from classical city tradition, not volumetric.²⁵ What we are witnessing here is the shift from a city made of volumes, to one made of talking surfaces.

The slow technological penetration into reality has led to the enhancement of this phenomenon of *information reality*, to offer a gradually more dynamic restitution of contents. This attitude is not been without compulsory tendencies, as shown by many architectural projects in the 90's, where the con-

23 R. C. VENTURI, JR. (born June 25, 1925) is an American architect, founding principal of the firm Venturi, Scott Brown and Associates, and one of the major figures in the architecture of the twentieth century. Together with his wife and partner, Denise Scott Brown, he helped to shape the way that architects, planners and students experience and think about architecture and the American built environment;

24 R. VENTURI, D. S. BRAWN, S. IZENOUR, *Learning from Vegas*, MIT Press, London, 1972;

25 D. S. BRAWN, *Contemporary Public Spaces. Architecture Zero Volume*, Skira Editore. Milano, 2006, pp. 9-23;

cept of digitalization was translated in the omnipresence of video installations, invading the surface of the facades and sharing both entertainment and informational spectacles as to catch the attention. What was the role of the neon billboard along Las Vegas Strip in the Robert Venturi theory, has gradually evolved into a more flexible content, without solution of continuity between the screen and the building.

Although the digitalization of space has been implemented in this practice, over time the concept has evolved due to different relevant factors. At the same time, in the 90's, the ICT prospective was towards virtual, day-dreaming about the upcoming possibility to abandon physical spaces and dwell the digital ones. New technologies introduced the possibility of refusing the physical space and advertised the cyberspace as an alternative: a new parallel world, which became a consistent reality for majority of population with the development of *World Wide Web*²⁶. Furthermore, Internet revolutionized communication time laps introducing the electronic-mail, downloading and booking systems; thus the amount of time spend online by the average person grew exponentially, to point of becoming an almost preponderant part of the real life.

“By the end of the decade, the daily dose of cyberspace (using the internet to make plane reservations, check email using a Hotmail account, or download MP3 files) became so much the norm that the original wonder of cyberspace – so present in the early cyberpunk fiction of the 1980s and still evident in the original manifestos of VRML evangelists of the early 1990s – was almost completely lost. The virtual became domesticated. Filled with advertisements and controlled by big brands, it was rendered harmless. In short, to use Norman Klein’s expression, it became an ‘electronic suburb’”²⁷

The first decade of the XXI Century brought a new type of relation among technologies, information and physical spaces. Information abandoned fixed location where to be displayed, to become ubiquitous, available everywhere, in every moment: new technologies enabled dynamical delivery of data

26 *WORLD WIDE WEB (WWW or W3)*, is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia, and navigate between them via hyperlinks;

27 L. MANOVICH, *The poetics of augmented space*, Visual Communication, n. 5; 219, 2006, pp. 220-221, via <http://vcj.sagepub.com/cgi/content/abstract/5/2/219>;

to the user from physical space in real time. David S. Bennahum²⁸ used the term “cellspace”²⁹ to identify this reality filled with invisible data, that were captured and interpreted by and displayed on personal communication devices.

“The previous icon of the computer era – a VR user traveling in virtual space – has been replaced by a new image: a person checking his or her email or making a phone call using a PDA/cell phone combo while at the airport, on the street, in a car, or any other actually existing space.”³⁰

What is most clearly changed in this evolution is the support the information is displayed on and, most of all, the scale of representation of this restitution. From the urban dimension on the facades in the digital architectures of the 90’s to the smartphone touch-screen displays, this shift deeply influenced the relation among user, virtual space and physical one. It is not hard to understand how different is watching a movie on a giant monitor, almost completely obscuring perception of physical surroundings, from looking at the small size of the smartphone display, allowing more awareness about the site-specific environment. While using a tablet, you are still largely present in physical space, and while the display adds to your overall phenomenological experience, it does not take over.

Apart from the dimension of the screens, what is probed is the emerging issue of the space relevance and the further empowering of technological interfaces that allows augmented reality. Moreover, ubiquitous computer and social technologies are drawing more and more specific profiles about the users, collecting information concerning their preferences, choices, habits.

Augmented spaces practically replaced cyber ones and the consequences are notables. Indeed the latter strives at creating an autonomous reality, radically different from the physical one and capable to host a considerable number of more attractive issues – as each of its characteristics can be planned, pro-

28 D. S. BENNAHUM, is a writer graduated at Harvard College with a degree in History. He explores and explains the cultural, economic and political consequences brought on by cyberspace. David is a Contributing Editor at Wired, Spin, Lingua Franca, and I.D. His articles appeared in the New York Times, Harper’s Bazaar, New York, The Economist, Marketing Computers, Slate, Feed and NetGuide;

29 *CELLSPACE*, term coined in 1998 by David S. Bennahum, originally referred to the new ability to access e-mail or the Internet wirelessly. In the mentioned context the definition is broadened by Lev Manovich (see previous note);

30 L. MANOVICH, *The poetics of augmented space*, Visual Communication, n. 5; 219, 2006, p. 221, via <http://vcj.sagepub.com/cgi/content/abstract/5/2/219>;

grammed and designed. Conversely, *Augmented Reality (AR)*³¹ is not based on the principle of substitute of the physical one; as mentioned previously, it consists in the over layering of levels of site-specific contents on reality, recognizing value of physical spaces and offering them additional information. The environment is the essential element to give meaning to the augmentations.

The loss of popularity of the *VR* and slow but still rising importance of *AR* research in the last years is symptomatic of the way in which the augmented space paradigm is now considered more crucial than the virtual space one. Interestingly, this reversal can be said to be anticipated in the 60's, at the very beginning of the *VR* theory development, by Ivan Sutherland³².

In his project, the user was equipped with a simple empty cube, whose perspectival view could change in real time according to the movement of his head, overlaying the wireframe structure to whatever he was looking at. Although Sutherland is credited with inventing the first *Virtual Reality* system, it can be also argued that actually he created the first *Augmented Reality* system sample, as the virtual display he designed was overlaid over the user field of vision without blocking it, supplying him with further information about reality, added directly on the physical environment. Moreover, it is possible to notice the shift from passive to the dynamically changing information systems within the urban context.

As a partial conclusion, according to the speech of Mike Kuniavsky³³, ubiquitous computing seems to be returned to its pre-industrial behavior, meaning that technology became part of the ecosystem, at the point that it

31 *AUGMENTED REALITY (AR)*, is a live, direct or indirect, view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data. It is related to a more general concept called mediated reality, in which a view of reality is modified (possibly even diminished rather than augmented) by a computer. As a result, the technology functions by enhancing one's current perception of reality (via M. GRAHAM, M. ZOOK, A. BOULTON, *Augmented reality in urban places: contested content and the duplicity of code*, Transactions of the Institute of British Geographers, 2012);

32 I. E. SUTHERLAND (May 16, 1938), is an American computer scientist and Internet pioneer. He received the *Turing Award* from the *Association for Computing Machinery* in 1988 for the invention of *Sketchpad*, an early predecessor to the sort of graphical user interface that has become ubiquitous in personal computers.

33 M. KUNIAVSKY, is a designer, writer, researcher, consultant and entrepreneur focused on people's relationship to digital technology. He cofounded *Adaptive Path* and *ThingM*, a ubiquitous computing design studio and micro-manufacturer;

gets not distinguishable from the nature³⁴.

In addition, in order to explain the structural difference that exist between the informational overlaying in the physical spaces and previous forms of intervention on reality, it is important to note that the accomplished augmentation is dissimilar from former kinds of the informational practices, as reported in architecture and urbanism history. Indeed informational facades were laid over 3-D architectural settlements, thus they represented 2-D experiences projected on 3-D shapes. On the contrary, augmenting technologies – such as GPS, Bluetooth, wireless location services – are, even if not completely in practice, are at least in theory considered as a continuous field that completely extends over, and fills in, all of physical space. Augmented space can be considered as the physical space which is ‘data dense’, since every point potentially includes different information, which is being delivered from elsewhere.

*“At the same time, video surveillance, monitoring, and various sensors can also extract information from any point in space, recording the face movements, gestures and other human activity, temperature, light levels, and so on. Thus we can say that various augmentation and monitoring technologies add new dimensions to a 3-D physical space, making it multidimensional.”*³⁵

As a consequence, nowadays the physical space contains a larger number of dimensions than before, and while from the human point of view the traditional geometric dimensions may still deserve a priority, from the perspective of the technology and its social, political and economic uses, they are as important as any other dimension is. It is in progress the growth of a multidimensional nature of the urban space, as the coincidence of an immaterial component that is no longer detachable from the material one. The keyword is *coexistence*: the simultaneous presence of layers of data overlapping on the physical reality, which main goal is enhance the perception and the experiencing of this latter.

This state of relations led to the conclusion that the experiences of augmentation of the reality we are attending today do not bring about physical-architectonical transformations, since they do not deal with the substitution of the existing reality with other (virtual) realities. The transition from the two-dimensional building façade interface of the 90’s, that for purposes and dimen-

34 M. KUNIAVSKY, *Smart Things: Ubiquitous Computing User Experience Design*, Morgan Kaufman Publisher Inc, Burlington, 2010;

35 L. MANOVICH, *The poetics of augmented space*, Visual Communication, n. 5, 219, 2006, p. 223, via <http://vcj.sagepub.com/cgi/content/abstract/5/2/219>;

sions used to cause the loss of the relationship with the environment, to the contemporary ubiquity of the digital objects, that enrich the place experiencing with inedited significances, resulted in a revolution not just in the code of the communication, as in the channel, in the physical medium of transmission.

The possibilities to intervene on reality, not transforming it physically due to architectural or urban interventions, nor triggering a system of dematerialization of space in favor of the virtual one, paved the way for the use of digital tools in urban planning. Particularly interesting, at this purpose, seems to be the possibility to intervene in “untouchable” urban areas, as protected by historical and cultural restriction; is the case with many historical Italian cities, whose splendid legacies of a glorious past earned them the protection of *UNESCO* as a *World Heritage Site*³⁶ and the interest in the integral preserving by a wide slice of humanity. The urban planner, far from wishing to delegate these urban centers to the role of *open-air museums*, impossible to live as unsuited to the needs of contemporary associated living – in which the component of digitization is, as has been said, imperative – needs new non-invasive operational tools. Indeed, many of the *UNESCO* historic centers are not only still inhabited, but they are often seats where extremely interesting social dynamics take place, both for the number of inhabitants these latter involve and affect, both because are equally often particularly inclined to the themes of technological innovation, of digital equipment and of the need for an environment up-dated, as in the case of the presence of large university poles, research and knowledge production centers.

In this sense Urbino, as will be further in the chapters to come, is a paradigmatic example. As a urban center subject to the *UNESCO* protection and has a huge university condition (counts a number of students even higher than that of the resident population), it lives with not a few imbalances the dichotomy between heritage conservation - as well as territorial isolation of the geographical position in which it is located and for the poor heavy infrastructure – and the dynamic climate of innovation creativity and research, as expected from a university town.

As already demonstrated in other fields, including for example that of international finance, the immaterial dimension of interconnections can't ever go without the materiality of places, as the effective space of application of these

36 *World Heritage Site*, is a place that is listed by the *UNESCO* as of special cultural or physical significance. The list is maintained by the international World Heritage Programme administered by the *UNESCO World Heritage Committee*;

precepts, and the adoption of enhancing system of the reality through the overlapping of digital constructions is a valuable tool to overcome the dichotomy between global and local, without devaluing neither the one nor the other variable. Urban centers subject to a system of heritage protection, therefore, could preserve their cultural and historical characteristics, without giving up on being up-dated, digitized and “at your touch”.

1.1.4 Invisible infrastructure over historical urban settlements: best practices

The issues concerning the shift from heavy infrastructure to a definitely less invasive digital one and the possibility offered by Augmented Reality to intervene without physically transform the space are opening up now chance of intervention especially in particularly sensitive urban settlement.

At this purpose a paradigmatic example is certain the project by Giancarlo de Carlo for Colletta di Castelbianco. The small village in Liguria, abandoned due to its condition of physical isolation, was rehabilitated as to create a highly technological centre for holidays; offering the benefits of a quieter country life, without renouncing to the aids of continuous connection and instant availability of data as in the city.

The main goal of this chapter was trying to argue about the crucial role covered by digital technologies in affecting the development of the humanized spaces.

On one side, the infrastructure has always been a chief issue in fostering the enlargement and improvement of human settlements, especially urban ones, and as previously mentioned, the progressive dematerialization of the systems of communication – with the shift from a heavy infrastructure towards lighter networked forms – has opened new possibility of intervention even in particularly sensitive contexts and with lower budgets.

At the same time, we underlined that the transition of the interface – towards the *Augmented Reality* paradigm – led to a renewed relation with the site specificity: not escaping the geographical dimension on behalf of a virtual one, but enriching reality with layers of information and contents. This approach, applied to the urban planning, could boost significant interventions aiming at increasing the liveability of a city, without a physical manipulation of the urban tissue.

Those features are opening up the possibility to use digital technology as part of a practice of intervention especially on urban areas protected by heritage and cultural restrictions, such as historic villages and ancient city centers.

Essentially the strict provisions of protection to which they are bounded are likely to make these places easily outdated, disfavoring the liveability of the urban sphere. Thus, the employ of digital technology could be contemplated as a tool to intervene in satisfying the necessity a contemporary city has – those of continues world-wide connection, instantaneous communication, illimited accessibility to information – without compromising his own historical legacy.

At a carefull analysis, the idea that new technologies could be employ to promote urban *verve* of an historic place can be traced back to a research and design loaf collecting well known samples; among them it is certainly necessary to report the case of the Giancarlo De Carlo³⁷'s Italian project for Colletta di Castelbianco³⁸.

Describing the intervention the Genoese architect argues:

*“In this project we set out to redesign and give life to an old village that was abandoned two hundred years ago.”*³⁹

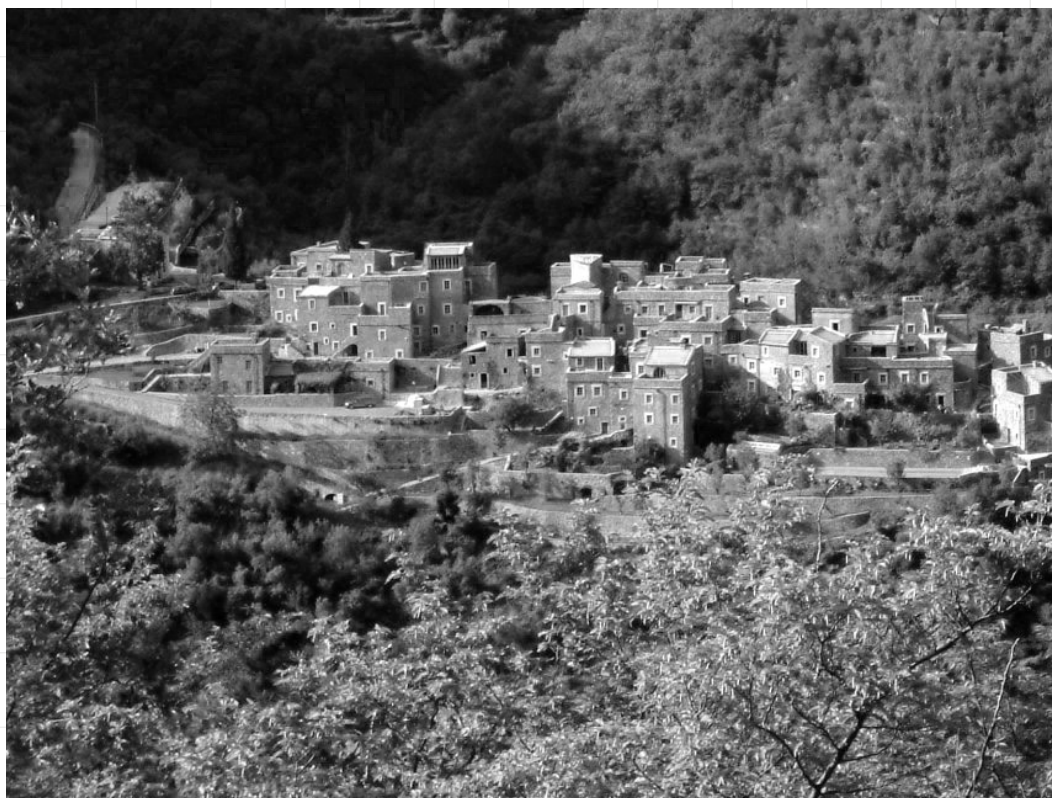
Indeed the village of Colletta, in the municipality of Castelbianco, rise along the top of a hill at the base of the Appenine Mountains and it is seventy-five kilometers distant from Geonaa. Born as a strategic point on the route of trades between the local inhabitants of the countryside and the travelers crossing between Liguria and Piedmont, Colletta was almost completely abandoned by its dwellers once a new system of roads was built bypassing the village.

In the last decade of the 21st Century, a small developer had the idea to rehabilitate the village and undertook an ambitious development plan to create seventy different apartments in the shell of the old settlement. One of the

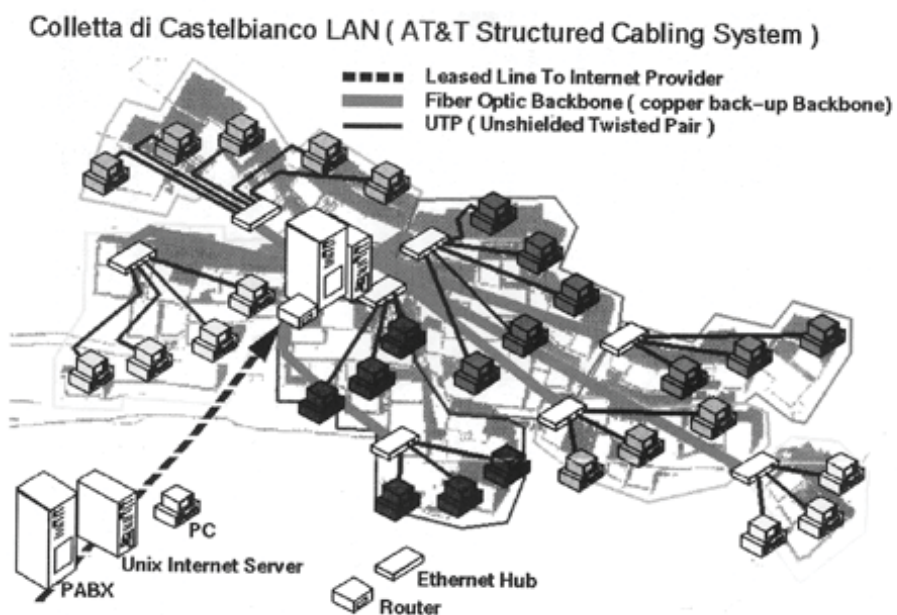
37 G. DE CARLO (December 12, 1919 – June 4, 2005), was an Italian architect, born in Genoa, Liguria in 1919. He trained as an architect from 1942 to 1949, a time of political turmoil which generated his philosophy toward life and architecture. Libertarian socialism was the underlying force for all of his planning and design;

38 Colletta di Castelbianco is an ancient village in the Maritime Alps and near the Italian Riviera in the province of Savona in Liguria, Italy;

39 G. DE CARLO, *Speaking of Places*, *Places Magazine*, vol. 16, n. 2, summer 2004, via <http://places.designobserver.com/toc.html?issue=577>



(figure 1) Colletta di Castelbianco, aerial view



(figure 2) Colletta di Castelbianco, LAN

(from the top) <http://solvagedgracefiles.wordpress.com/2011/03/133890.jpg>
V. SAGGINI, Progetto "Colletta di Castelbianco: riscoprire il senso del luogo nell'era del villaggio globale, from *Telelavoro; prossimo futuro?*, Atti del convegno, Banca CRT, May 1996, via <http://www.teleura.com/article/view/891/14.html>

SOURCE



most brilliant point of his purpose consisted in the individuation of a clear type user to refer to. Since Colletta was twenty kilometers away from the coast, surrounded by a tough and dense nature and almost completely inaccessible, evidently it was not the ideal place for canonic vacations. Thus the developer framed a new category of tourist, that would be interested in spending their holydays in the isolate village: the so called *white eagles*.

“White eagles are people who work by themselves and are looking for isolation, but who also use computers and information electronics to remain in touch with what’s happening. Not only are they in touch, but they may direct operations in other, more crowded places. These people usually can take long periods of isolation, and they may want to live in places which are completely quiet. White eagles were not very numerous in Italy at the time this project began. But there were some, and there are also other people who are completely tired of towns, and who want to go to very simple places where they can live a life in connection with nature and at the same time be in touch with what is happening around Italy.”⁴⁰

Therefore a project of digital infrastructured was realized in collaboration with Telecom Italia; the entire village was wired as to enable the connection from every apartment to the existing – and yet to come – web services. The result was prodigious and extremely groundbreaking: Colletta was equipped with an a fiber optic connection, that at that time was exclusively used in university poles and big enterprises, together with a *Integrated Services Digital Network (ISDN)*⁴¹ – allowing the use of innovative instrument such as video-phones and teleconferences – and an interactive television.

The choice to give a strong profile to Colletta, a sort of thematisation of the intervention, was actually the result of an interesting compared scenario considering the issue of the rehabilitation and adaptive-reuse of the ancient urban settlements on one hand and on the other the advent of the information society.

“Colletta non è che uno dei tanti esempi, ancorché particolarmente significativo, dell’ingente patrimonio urbanistico del passato che caratterizza il

40 ivi;

41 *Integrated Services Digital Network (ISDN)*, is a set of communication standards for simultaneous digital transmission of voice, video, data, and other network services over the traditional circuits of the public switched telephone network. It was first defined in 1988 in the *CCITT red book*. (According to the definition given by M. Decina, E. SCACEE, *CCITT Recommendations on the ISDN: A Review, CCITT Red Book*, May 1986, pp. 320–25);

nostro paese, ricco di infrastrutture minute, approntate da secoli di lavoro umano, che testimoniano del rapporto armonico ed equilibrato tra l'uomo e l'ambiente circostante che caratterizzava il mondo premoderno. È un patrimonio di valore inestimabile, fondamentale per la salvaguardia della nostra identità storico-culturale, che purtroppo viene spesso dimenticato ed abbandonato ad un fatale degrado, o che viene profondamente alterato in un'ottica di cieco sfruttamento commerciale."⁴²

The issue is extremely difficult to be solved:

*“Infatti, benché un insediamento rurale di piccole dimensioni possa offrire molto in termini di qualità della vita (la quiete, l'aria pura, l'acqua pulita, il cibo genuino di produzione locale, un ambiente sicuro, piacevole e a misura d'uomo, lo stretto contatto con la natura, i rapporti sociali selezionati e semplificati), esso appare profondamente sfasato ed anacronistico rispetto alla moderna metropoli sede delle attività produttive, quella metropoli dove, per usare le parole di Georg Simmel, prevale lo spirito oggettivo, ossia la possibilità, da parte del singolo, di accumulare grandi quantità di conoscenze ed esperienze ma sempre in maniera superficiale, senza la possibilità di approfondire e di riflettere sulle informazioni acquisite e sul loro significato intrinseco. Il contesto storico, economico e sociale nei quali un villaggio come Colletta è nato è evidentemente differente da quello in cui sono nate le città moderne: ad una società rurale ed agricola si oppone una società urbana ed industriale sempre più caratterizzata da ritmi di vita frenetici e alienanti.”*⁴³

Colletta di Castelbianco represents a key moment in the discourse about evaluating the current dichotomy between a historical and cultural heritage Italy is particularly rich in – and that is necessary to preserve – and the demands imposed by the contemporary urban life – that are mainly conveyed by digital technologies. The small town of Liguria became a place where to escape from the environmental pollution we are all victim of in contemporary cities, without renouncing to the returns and privileges these latter offer to their dwellers.

Colletta is a paradigmatic case of intervention aimed at a non-invasive treatment of the historic urban fabric. A village, where depopulation had been decreed by the state of isolation induced by insufficiency of heavy infrastructure

42 V. SAGGINI, *Progetto “Colletta di Castelbianco”*: riscoprire il senso del luogo nell'era del villaggio globale, from the conference report *Telelavoro: prossimo futuro?* Banca CRT, May 1996, via <http://www.teleura.com/article/view/89/1/14.html>;

43 ivi;

system, finds new liveability through the telematic network, without renouncing to its rural nature, but rather making it a point of strength and uniqueness. To the physical city, historically layered, levels of information update and data are overlapped, empowering the spatial practices.

As previously argued, some of key issues of the traditional urbanism are thus fading: even if far from completely disappearing, these deeply transformed their significance to reply to the contemporary setup. Comes at this purpose the thinning of the classical difference between center and periphery, now become less tough than it used to be. What actually makes a place *global* is the level of digital interconnection it permits.

Similarly, the case of Urbino here studied may provide an opportunity to re-examine the issue of heritage preservation and revitalization of urban centers. The Marche town, yet in a state of noticeable geographical isolation, is home to a large university, whose needs are not too different from those of the Colletta *white eagles*.

It is fairly safe to say that college students belong to a generation that uses consistent – sometimes inordinate – of digital tools. The need for a fast connection and unlimited access to wide-ranging data are strong needs, almost indispensable, for those users. The possibilities offered by the technology should be studied and the case of Colletta is certainly interesting in this respect.

“[...] Diventa plausibile il ritorno alla vita in piccoli centri lontani dalle aree metropolitane. In un piccolo centro è possibile riscoprire un'identità, il senso della comunità, la memoria del proprio passato, della propria cultura, della propria storia. In un piccolo centro è possibile la formazione dello spirito soggettivo – il riferimento è ancora una volta a Simmel – cioè alla capacità dell'individuo di appropriarsi dello spirito oggettivo costituito dai vasti depositi di cultura ed informazione accessibili tramite le infostrade. Grazie alle nuove tecnologie di telecomunicazione diventa insomma possibile vivere e svolgere il proprio lavoro in aree rurali rimanendo comunque al centro del fluire degli eventi del mondo, senza doversi sottoporre a quel processo di sradicamento che è uno dei problemi fondamentali della nostra epoca. Diventa possibile riprendere confidenza con i ritmi naturali e fisiologici del tempo; con l'alternarsi del giorno e della notte ed il susseguirsi delle stagioni, con il respiro ed il battito cardiaco.”

1.2

Digital technologies boosting common practices in the public realm

1.2.1 Digital technologies: threat or empowerment for the public realm?

The public space of the city has been placed under observation by researchers since its beginning. The advent of digital technology has strongly influenced the practices of use of this and has been interpreted by many scholars as heavily noxious of the original dynamics of the public sphere, on one side inducing a progressive indifference towards the spaces of the city and causing, on the other, phenomena of social inequality, gentrification and spatial segregation. Digital devices and social platforms – especially if geo-referenced – while improving the ability to forecast flows in the city, would have led to the advent of a capsular reality, with made-to-measure city where the chance of encounter among individuals not related by social affinity is increasingly rare.

Yet the technology exists and is part of our world. It is a tool and the focus should move towards the possibilities, in terms of incentives, that the use of this prerequisite may offer to the city. This of digital media is a discourse that involves the urban society at large, it is speech about the consequences that they may have in relation to our identity and of our living together, and requires a reflection on the sense of responsibility, not only by professional figures involved – technical or political – but by all citizens. Speaking of urban media means to investigate the dynamics by which the technologies could encourage citizens to collectively act on shared issues, an examination of how the principles of telematic culture can foster the emergence of new urban communities. Technology can renew and foster a sense of belonging, or a desire of appropriation towards urban spaces?

From smart cards and intelligent GPS systems, to social media and smartphones; since digital devices stopped emitting that distinguishing metallic sound and became gradually more and more compact, portable and cheaper they started sharing and shaping the word with living beings.

Whether at the beginning of this era of informational technology, the domain of digital devices was perceived as something detached from the physical reality, with the progressive drop out of the myth of *Virtual Reality* the mutual interdependence of these two words became self-evident. The final outcome is a *hybrid city*, where digital layers are overlapping to the environment, and the *sentient city*⁴⁴, meant as data reacting environment.

The transformations in the interface of the digital media technology we interact with had radical results as well. The ongoing trend is the gradual shift from interacting with a computer, through the keyboard or mouse, to the condition where computing is all around us and we constantly interact with a variety of computationally enabled devices and systems which have disappeared into the background of our lives. Computers are everywhere, computers are ubiquitous.

In particular, it has been observed how new social practices are arising through the use of those ubiquitous media, changing the urban culture.

In fact, generally talking, the urban culture deals with the relation between urban space and social and political process such as identity formation and relation among groups. It includes both top-down approaches of space making, as well as bottom-up ones of appropriation. Urban culture in the last century mainly focused on the meaning of two opposite spheres of the life of the modern citizens: the *Wohnen*, intended as dwelling, but even as identification: extending the individual dimension towards other people, with social ties, and bounding them to places; and the "*Öffentlichkeit*", or public realm.

The public realm is generally embodied in the dynamics that occurs in common-public spaces of the city. It is here that strangers confront each other, become mutually aware and have to come to terms.

The public realm is defined as a *space of differences*⁴⁵, characterized by *antagonism* rather than *conformism*. Some of the major supporters of this notion of

44 M. SHEPARD, "Curatorial Statement," The Architectural League NY, via <http://www.sentientcity.net/exhibit/?p=3>;

45 J. KRISTEVA, *Female Genius: Life, Madness, Words, vol. 1: Hannah Arendt*. Trans. Ross Guberman, New York: Columbia University Press. 2001;

public sphere are Hannah Arendt⁴⁶, Richard Sennett⁴⁷ and Jürgen Habermas⁴⁸. Although their exact positions vary, the central idea is that a society needs a place in which these differences are brought together.

In particular for Anna Arendt, one of the major thinkers of the last century, the public sphere comprises two distinct but interrelated dimensions. The first is the *space of appearance*, a space of political freedom and equality, which comes into being whenever citizens act in concert through speech and persuasion; the second is the *common world*, a shared and public dimension of human artifacts, institutions and settings which provides a context for activities. Those two aspects are both present in the public sphere, where citizens perform, in a collective shared space, their differences.⁴⁹

Instead Habermas' idea of the public sphere is a dimension where citizens could engage in discussions with one another, thus interpreting the public realm as a place for rational debate.

Sennet considers the public realm as the *quiddity* of urban living.

“Cities have the potential to make us more complex human beings. A city is a place where people can learn to live with strangers, to enter into the experiences and interests of unfamiliar lives. Sameness stultifies the mind; diversity

46 A. ARENDT (1906 –1975) was a American political theorist. She often has been described as a philosopher, although she rejected that label on the grounds that philosophy is concerned with “man in the singular” and instead, she described herself as a political theorist because her work centers on the fact that “men, not Man, live on the earth and inhabit the world.” Arendt’s work deals with the nature of power, and the subjects of politics, authority, and totalitarianism;

47 R. SENNETT (1943-...) is the Centennial Professor of Sociology at the London School of Economics and University Professor of the Humanities at New York University. Sennett is probably best known for his studies of social ties in cities, and the effects of urban living on individuals in the modern world;

48 J. HABERMAS (1929-...) is a German sociologist and a philosopher in the tradition of critical theory. He is perhaps best known for his theory on the concepts of communicative rationality and the public sphere. His habilitation work was entitled, *Strukturwandel der Öffentlichkeit; Untersuchungen zu einer Kategorie der Bürgerlichen Gesellschaft* (published in English translation in 1989 as *The Structural Transformation of the Public Sphere: an Inquiry into a Category of Bourgeois Society*). It is a detailed social history of the development of the bourgeois public sphere from its origins in the 18th century salons up to its transformation through the influence of capital-driven mass media;

49 A. ARENDT, *The Human Condition*, tr. S. Finzi, Bompiani, Milano, 1964;

*stimulates and expands it*⁵⁰.

It is important to notice that digital devices are redistributing the *Wohnen* and the *Offentlichkeit*, in the city. For example as noticed by Ito⁵¹, the mobile phone is used to create a virtual ‘bubble’ in which one retracts while in public space.

*“One of the primary functions of mobile media that is carried in public and semi-private places is to provide a personalized media environment that is attached to the person and not the physical place [...] [creating] a cocoon that sheltered them from engagement with the physical location and co-present others, a private territory within the confines of urban space, temporarily appropriating public space for personal use.”*⁵²

He studied the *tele-cocoon* as a modern way to shut out the crowd, acting against the idea of public realm, and creating the portrait we have been accustomed: people sitting in the same bench totally absorbed by the screen of their mobile phones.

But to criticize this negative vision upon digital devices, it is necessary to quote Simmel⁵³ and his observations about crowd. The encounter with the crowd, according to his theory, could be a negative experience, often mitigated by the “*acting as the other doesn’t exist*” attitude, with the help of newspaper.

In this acceptation digital devices could be just an *update* of a human necessity and in any case their functioning could be designed in order to create a possible collective sphere in those cocoon shelters.

Ito again observed a new social tendency, performed in public space, the *camping*:

50 R. SENNET, *A flexible city of strangers*, Monde Diplomatique, via <http://mondediplo.com/2001/02/16cities>;

51 M. ITŌ (1968, -) is a Japanese cultural anthropologist who is an Associate Researcher at the Humanities Research Institute at the University of California, Irvine. In addition, she is a Visiting Associate Professor at the Keio University Graduate School of Media and Governance. Her main professional interest is the use of media technology;

52 M. ITO, D. OKABE, M. MATSUDA, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA, MIT Press, 2006, p. 6;

53 G. SIMMEL, (1858 -1918), German sociologist and Neo-Kantian philosopher whose fame rests chiefly on works concerning sociological methodology. He taught philosophy at the Universities of Berlin (1885–1914) and Strassburg (1914–18), and his insightful essays on personal and social interaction inspired the development of qualitative analysis in sociology;

*“One brings a personal media device and works with it in a public space. Yet the goal is not to completely shut off public space, the public space is especially chosen because one finds it an agreeable location to work from. Like reading a paper in a café rather than at home. ... They put down roots that have temporal limits, but are more extended than commuters who are simply passing through.”*⁵⁴

Camping is not so much about shutting out the environment, it is slightly different from *tele-cocooning*:

*“People saw value in residing for a period of time in a desirable location. Just as people seek out beautiful campsites to set out there gear and reside for short periods of time, urbanites find attractive public places to temporarily set up camp with the help of their information technologies.”*⁵⁵

It could happen in public spaces, and in particular in *non-places*⁵⁶, such as *Starbucks*⁵⁷.

On the contrary Varnelis⁵⁸ and Friedberg⁵⁹ argue that visitors of local *Starbucks* develop a meaningful relation with that particular place. It is true, they state, that many people in cafeterias are communicating with absent others rather than with those sitting next to them, but that doesn't mean they are connected

54 M. ITO, D. OKABE, M. MATSUDA, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA, MIT Press, 2006, p. 9;

55 *ibidem*, p. 10

56 M. AUGE,

57 Starbucks Corporation is an American global coffee company and coffeehouse chain based in Seattle, Washington. Starbucks is the largest coffeehouse company in the world, with 20,366 stores in 61 countries, including 13,123 in the United States, 1,299 in Canada, 977 in Japan, 793 in the United Kingdom, 732 in China, 473 in South Korea, 363 in Mexico, 282 in Taiwan, 204 in the Philippines, and 164 in Thailand;

58 K. VARNELIS (born 1967) is a historian and theorist of architecture, specialising in network culture. He is Director of the Network Architecture Lab at Columbia University's Graduate School of Architecture, Planning and Preservation and a founding member of conceptual architecture practice AUDC;

59 A. FRIEDBERG, PhD, Cinema Studies from NYU, was Chair of the Critical Studies Division in the School of Cinematic Arts at USC and President-elect of the Society for Cinema and Media Studies. She was instrumental in creating the Visual Studies Graduate Certificate and the Media Arts and Practice PhD program;

to an a-historical space of flows.

*“We argue that culture is no longer localized in time and space, but neither is it non-place. Instead, individuals inhabit a physical world of simultaneous environments, of localized time and space as well as of multiple telematic worlds in which they can be co-present with others at a distance.”*⁶⁰

Still it is not considered how ambient information could affect the action of *camping*, linking the *campers* not only to distant realities, but even to different layers of the one they are inhabiting, thus bringing back sociality and culture.

Not only the digital media create new contaminations between private and public sphere, with boundaries that are as thin as the difference between on-off, but the main question that arises is whether digital devices enhance the public sphere or on the contrary threaten it.

Observation is still at the beginning, opinions are opposite. Adam Greenfield⁶¹ is leading a study where he tries to understand how bad actors can use the presence of *ambient informatics*⁶² in the urban environment to undermine its functioning. To do that he considered the work of the geographer Steven Flusty⁶³, who has identified a range of “*characteristics [...] introduced into urban spaces to make them repellent to the public*” He gave each of the five situations he listed particularly evocative names:

- *Stealthy* spaces, “cannot be found”;

60 K. VARNELIS, A. FRIEDBERG, *Networked place*. In *Networked publics*, K. Varnelis, Ed, 2007, <http://networkedpublics.org/book/place>;

61 A. GREENFIELD is a writer, user experience consultant and instructor at New York University’s Interactive Telecommunications Program. Before starting his current practice, Studies and Observations, Adam was lead information architect for the Tokyo office of well-known Web consultancy Razorfish;

62 “I defined *ambient informatics* as “a state in which information is freely available at the point in space and time someone requires it, generally to support a specific decision.” The contemporary way to provide ambient informatics is with mobile phones. But the post-desktop era imagines every kind of digital-real world points of contacts: building facades, glasses, portable tablets, interactive floors. From

A. GREENFIELD, M. SHEPARD, *Situated Technologies Pamphlets 1, Urban Computing and its Discontents*,

The Architectural League of New York, 2007, p.12;

63 S. FLUSTY is PhD, geographer researcher at the university of York, Canada. He attended a master in Architecture at the University of Southern California;

- *Slippery* spaces, “cannot be reached”;
- *Crusty* spaces, “cannot be accessed”;
- *Prickly* spaces, “cannot be occupied comfortably”;
- *Jittery* spaces, “cannot be utilized unobserved”.⁶⁴

The new digital devices could enhance the *jittery space* in the future

“But the far-reaching digitisation of urban life is also bringing along potential new problems, with critics arguing that electronic customer cards, localised mobile services and narrow-casted messages aimed at individuals are combining to transform the city into a site for optimised consumption. Moreover, the city is threatened with becoming a tightly controlled quasi-military zone with ubiquitous camera surveillance running face – or walk – recognition software, cards with chips that save login data in databases, and telecom companies that map the physical movements of individuals.”⁶⁵

Other signals that emerge could lead, in a dystopian scenario, to what Lieven de Cauter⁶⁶ called “*capsule society*”⁶⁷: a city of privatized shells with different functions, the access to whom is regulated by embedded sensors. Citizens choose where to go and who to find there, controlling – or completely avoiding – contacts with unknown people. As a result one of the main features of the historical city, *the encounter with the stranger*, will withdraw, with the disappearance of spontaneous encounter and public life, making then, creating *crusty spaces*.

Regardless of these worst case scenarios have been made – and will be made, perhaps in rising number – about the outcome of the city of the future, as we have to consider is condition of things. Computers are among us, have

64 S. FLUSTY, *Empire of the Insensate*, In M. SORKIN (ed.) *Indefensible Space: The Architecture of the National Insecurity State*, Routledge, New York and London, 2008, pp.29-50;

65 M. DE LANGE, M. DE WAAL, *Ownership in the Hybrid City, Virtueel Platform Research*, 2012, p. 7, via <http://virtueelplatform.nl/english/publications>;

66 L. DE CAUTER, is a philosopher, art historian, writer, and activist. He teaches philosophy of culture in Leuven, Brussels, and Rotterdam. He has published several books on contemporary art, experience and modernity, on Walter Benjamin and more recently on architecture, the city, and politics.

67 The concept is mainly articulated in the book: L. DE CAUTER, *Capsular Civilization*, NAI Press, March 2008;

improved the quality of our lives in undeniable size and suggest the possibility of a return to pre-computing era is clearly a historical nonsense. The misinterpretation is to consider technology as an ethic entity. Technology itself is neither good nor bad, it is an instrument for action. The way in which this is used, almost completely disregards the inherent possibilities of the instrument.

“Another important point I wish to make is to warn against technological determination. These new technologies do not have an outside impact on society. It is through social practice embedded in an existing (urban) culture that these new technologies acquire their meaning and produce new cultural practices and perhaps new urbanisms.”⁶⁸

Therefore it is more useful to try – and, upstream of the occurred research, seek to target – is how the increase of digital media technology in the urban environment actually implies a number of significant opportunities for a more equal development of urban tissues. What is relevant for us to understand is if – and in positive case, how much – embedding sensing and actuating technologies into the physical environment is effectively affecting the city, reinforcing the public realm as previously defined.

Once again, it is necessary to emphasize that technology itself can't solve urban problems or represent a sure investment for a better city; technology is a tool and the central issue is not how to solve a definite problem or how to improve a construction method with the aid of new technology. The debate refers to a possible impact on the urban society at large, to the consequences it could have on our identities and living together dynamics.

This speech requires a reflection on the sense of responsibility, not exclusively by professionally involved figure, but by all the city dwellers. As it will be discussed afterwards, to be effective the digital enhancement requires the involvement of a variety of subjects – local and national, private and public – that are able to operate in a coordinated manner for the development of territories and can, in particular, promote concrete actions in favor of the talent and creativity.

“Il coinvolgimento dei vari soggetti è tanto necessario alla parte politica e agli amministratori del territorio, per comprendere l'impatto delle decisioni e delle azioni di governo, quanto alla parte imprenditoriale, come occasione di confronto e decisione economico-strategica di azioni rivolte all'attrazione

68 M. DE WAAL, *From BLVD Urbanism towards MSN Urbanism. Locative media and urban culture*, entry posted on December 22, 2008, via <http://www.martijndewaal.nl/?p=116>;

e alla gestione di talenti, siano questi persone o risorse. Ma è un coinvolgimento utile anche alla cittadinanza in generale, per ampliare prospettive ed orizzonti, per aumentare l'orgoglio di quanto si sta facendo e la consapevolezza della complessità dell'epoca in cui si vive; da ultimo, per migliorare la qualità della vita sociale della città."⁶⁹

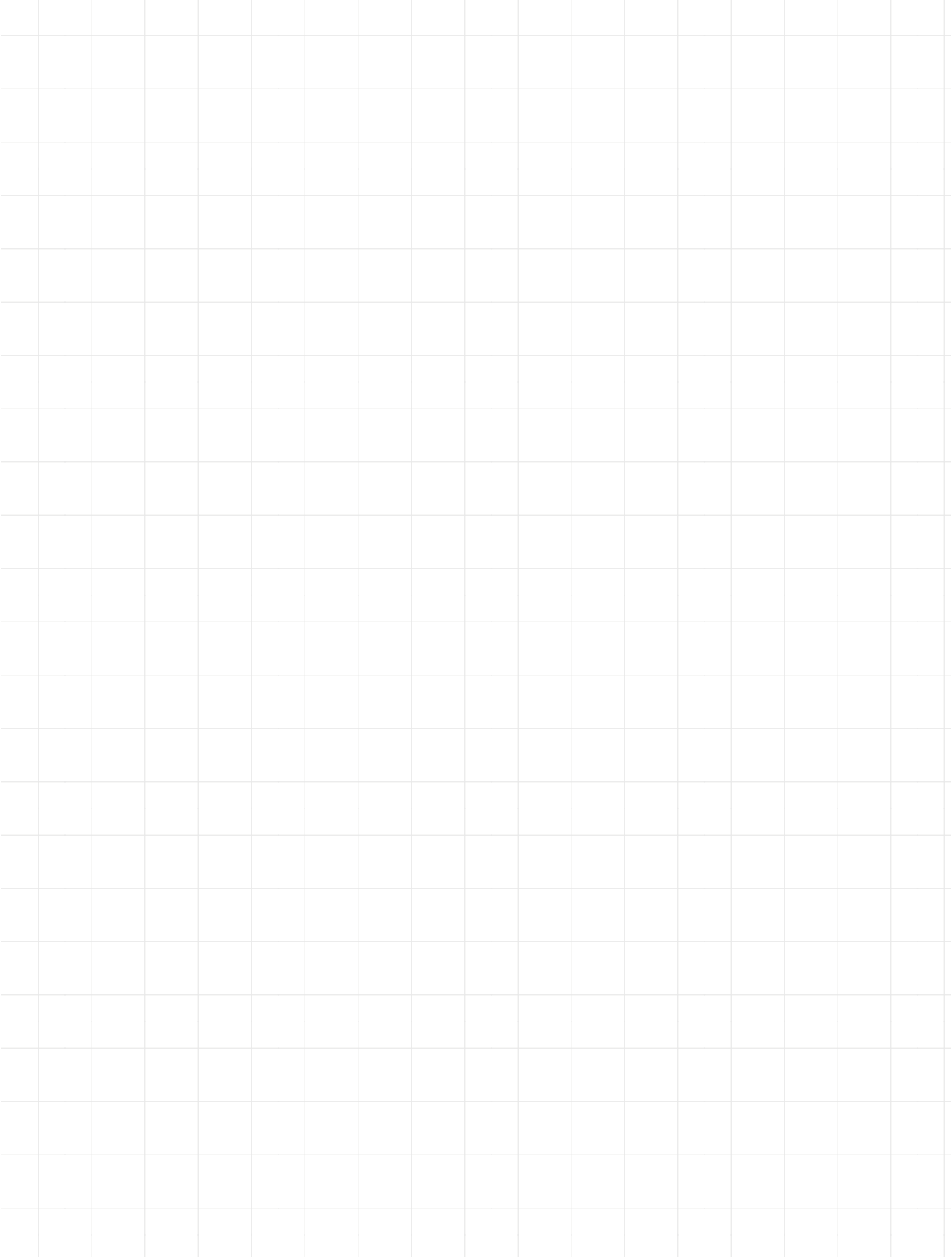
Citizens, common people not professionally involved with urban planning or socio-political practice are a key-element in this development. As Castells underlines, it should not be made the mistake to assume "*that either technology or social evolution led inevitably to the network society, as the later incarnation of modernity, in the form of postmodernity, or as information/knowledge society as the natural outcome of a long evolution of the human species.*"⁷⁰ Personal computers, one-to-one delivered information systems, smartphone were not in the mind of governments or corporation: people did it. *Ubiquitous computing* – and the possibility of layering reality with further dimensions of data – is the result of a series of events and choices which were mainly carried out by urban citizens all around the world; has a product of this social figure, out of any hierarchical *a priori* order, communities must be regarded as fundamental part of this phenomenon.

*"Can digital technologies enable citizens to act on collectively shared issues? Can principles from online culture help to form new collectivities around communal resources in an urban context? Can media technologies bring about a sense of place and connection among urbanities, and a feeling of 'ownership' of their environment?"*⁷¹

69 G. FRANZ, *Smart City vs Città Creativa? Una via italiana all'innovazione della città*, Lulu Press, 2012, p. 20;

70 M. CASTELLS, *Informationalism, Networks, and the Network Society: a Theoretical Blueprint*, text published in *The Network Society: a Cross-Cultural Perspective*, Edward Elgar, Northampton, 2004, p.20;

71 M. DE LANGE, M. DE WAAL, *Ownership in the Hybrid City, Virtueel Platform Research*, 2012, p. 7 via <http://virtueelplatform.nl/english/publications>;



1.2.2 The history and registry of the Common Good

Property rights are some of the most archetypal principles attached to the history of our society and they went intensifying especially with the evolution of urban environments, as they becomes the measure of the perceived degree of responsibility for the citizen towards a space of the city and of the possibility he has to act on it. In conversational language, as in much as in the theoretical speech held in the past, the public space is considered as the most suited for democracy and for the collective life of the citizens. This notion of the public, however, was tied to a typical structure of the latest Fordist society and does not reflect more completely the working dynamics of the contemporary city. The end of large public investments, especially in the construction sector, has initially led to the an era of privatization and of dramatic dichotomy between the public and private sphere of citizens, but concealing a rhizomatic desire of re-appropriation towards the spaces of cities and the shared urban practices. The advent of digital media has allowed new mechanisms for the management and coordination of collective action to speed up and be optimized; through smart phones and other geo-localized devices, citizens have been able to share a considerable amount of data and information and to found on these the organization of joint actions and choices.

The concept of ownership is one of the longest-term rooted to our society and, especially referring to the urban environment, it can be synthetically meant as “*the degree to which city dwellers feel a sense of responsibility for common interests*”

and can take action on them"⁷². Considering how in time the sense of citizenship as changed, together with the sense of commitment and the possibility to intervene in the creation and management of urban issue is particularly relevant for our research.

In general terms, the private ownership, namely *res privata*, relates to exclusive ownership rights. My home, my backyard, my car; I can exercise private property rights, preventing others from using the good or consuming its benefits⁷³. This kind of ownership can be eventually performed on shared public space, involving groups of people who temporally occupy and colonize a space for private ends or privatized squares and streets owned by businesses.

The public ownership, *res publica* in Latin, concerns a series of goods for which responsibility has been passed to a single legitimate authority – in most cases the government. Those public goods are economically defined as non-excludable and non-rivalrous, in that individuals cannot be effectively excluded from use and where use by one individual does not reduce availability to others⁷⁴. A public good is a good that can be consumed by more than one consumer.

Examples of public goods include knowledge, lighthouses, fresh air and at this category can be ascribed certain aspects of the urban life of whom city dwellers are not interested in taking ownership, such as the sewerage and water net management.

The commons – *res comunis* – refers to those sources which are managed by multiple parties. Goods under this class of ownership are not non-excludable and this draws the main difference compared to private ones. Otherwise, the distinction between *res publica* and *res communis* is more subtle;

“One difference lies in the extent to which individual use has an impact of

72 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012, p. 40;

73 from the definition given by: R. POWELL, *AQA AS Economics*, Ray Powell, Philip Allan, June 2008, p. 352;

74 PUBLIC GOOD, is a good that is both non-excludable and non-rivalrous in that individuals cannot be effectively excluded from use and where use by one individual does not reduce availability to others. For current definitions of public goods see any mainstream microeconomics textbook, e.g. HAL R. VARIAN, *Microeconomic Analysis*, W. W. Norton & Company, 3rd edition, March 1992;

the resource as a whole, affecting how other individuals can make use of it".⁷⁵

To simplify matters, we could say that many goods are public goods, *'but are not pure public goods because their consumption is either rivalrous or excludable. [...] More people who use this resource, the less benefit people get from using it. Resources like this are common-pool resources'*.⁷⁶

To postulate a definition of *commons* is thus problematic and overly constraining, especially because the three kinds of ownership are generally not detectable in absolute forms, but they mutually imply each other.

"Shared gardens with limited accessibility and gated communities in which residents withdraw into collective privatized neighborhoods are privately owned (res private), but their management and use is common issue (res communis). And if an illegal activity were to take place there, it would become matter of public concern (res publica)".⁷⁷

A generative instance of the commons consists in the collective interest people demonstrate towards a good. Therefore the *conditio sine qua non* of a public space to be defined "common space" lays in the relevance attributed by people to that particular area, as well as in the active and proactive behavior they establish with it.

In summary, in the contemporary debate – as well as in the common language – public space is considered to be the proper space for democracy and for collective life in an urban environment. However, this notion of public is connected to a more general notion of people in the framework of the nation-state political organization and, while this model characterized modernity up to the late phases of Fordist society, the present time better suits in the meaning of complexity, heterogeneity and multiplicity. As the Italian philosopher Paolo Virno suggests, the multitude no longer seeks unity in the public, but rather in the construction of a non-state

75 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012, p. 40;

76 N. MILLER, *Notes on Microeconomic Theory*, published notes, Harvard University, August 2013, via <http://www.hks.harvard.edu/nhm/notes/notes8.pdf>;

77 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012;

public sphere.⁷⁸

Secondly, another relevant feature that the public space doesn't take in account is how urban value is produced today and is thus described by Amir Djalali⁷⁹, in his essay *Beyond Public Space: Collective Intelligence and the Production of Common Space*:

“Public space is seen sometimes as a space for leisure, play, unexpected uses and ‘temporary autonomous’ activities. Other times public space is described as political space of confrontation, a contemporary agorà for the local community. Finally, left-over spaces and ruins become sometimes underground public spaces, nodes of networks of creative counter-culture. In all cases, these visions fail to produce viable alternatives to contemporary mechanisms of production and accumulation of urban rent: leisure becomes marketable, local democratic traditions become collective symbolic capital, underground networks become creative class.”⁸⁰

In opposition to the rhetoric of public space, we propose to analyze the common dimension of the production of space. The common – at the same time the mode of production of the general intellect, the products of immaterial labor, a non-state public dimension, a form of collective property, our common human nature, and a logical relation between generality and individuality – offers a key to trace the evolution of the politics of the production of architectural knowledge.

According to the framework thus described, a common good is created by a group of people sharing the same desire and this often means that – as a specific desire among desires, generated by a finite groups among groups – it can easily turn out to be in conflict with other intent and interests coming from other communities or institutions.

Unfortunately it is impossible to provide a precise answer to the question of

78 P. VIRNO, *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life*, Semiotexte, 2004, p. 45;

79 A. DJIALI, graduated in Engineering at the University of Bologna. Before starting his PhD he worked in the Netherlands for architecture magazines and various curatorial projects;

80 A. DJALALI, *Beyond Public Space: Collective Intelligence and the Production of Common Space*, *The City as a Project*, April 27, 2010, via <http://thecityasaproject.org/2010/04/amir-djalali/>;

who is entitled to enforce his purposes on others and, more generally, who is responsible for the management of the commons. In general terms we can briefly resume the fertile characteristics that produce a common and helps at managing it; “*shared access to collective services; the opportunity, knowledge, skills to initiate a one’s own actions; and reciprocity based on mutual trust between fellow users*”⁸¹.

Going back to the past, one of the first public goods towards which groups of people showed a desire of appropriation, making it common good, has been the urban open space. The Polish sociologist Zygmunt Bauman⁸², especially in his most famous writing *Liquid Modernity*⁸³, asserts that the urban open space – often generalized as “public space” – represents the elementary core from which the concept of civility itself springs. According to this thesis, civility – like language – deals only secondarily with private issues and before getting individually learned and practiced at private level it must be a feature of the social setting and its up to the inhabitants – aspiring to be citizens – to learn the difficult skills of civility.

Bauman writes herein that civility primarily means the provision of spaces that people may share as *public personae*, without being obliged to take off their *social masks* and pressed to express themselves, talk about their feelings and intimate thoughts.

But the concept of civility does not end in the previous discussion on social “anonymity”, the sociologist adds:

“ [...] *it also means a city presenting itself to its residents as a common good which cannot be reduced to the aggregate of individual purposes and as a shared task which cannot be exhausted by a multitude of individual pursuits, as a form of life with a vocabulary and logic all its own and its own agenda, which is (and is bound to remain) longer and richer than the fullest list of individual concerns and cravings so that ‘wearing a public mask’ is an act of engagement and participation rather than one of non-commitment, and withdrawal of the ‘true self’, opting out from intercourse and mutual involvement, manifesting the wish for being let*

81 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012, p. 41;

82 Z. BAUMAN (November 19, 1925), is a Polish sociologist. Professor of sociology at the University of Leeds (and since 1990 emeritus professor), Bauman has become best known for his analyses of the links between modernity and the Holocaust, of postmodern consumerism and critique of “liquid” modernity;

83 Z. BAUMAN, *Liquid Modernity*, Polity Press, June 2000;

alone and going it alone."⁸⁴

A milestone study conducted by Robert Putnam⁸⁵ on the American social grouping underlined the progressive shift of emphasis from public to private in the period between 1950-1990⁸⁶. Starting with Winston Churchill's privatization of the British steel industry, passing through the general progress of privatization in the Seventies and Eighties in Europe and the wholesale privatization of post-communist Russia, the movement from public to private association became a symbol of late twentieth century society. There were different cases demonstrating that privatization didn't necessary lead to cheaper, better products and services, but this didn't change the general appreciation of the principle. At this regard, Putnam speculated that the trust in society decreases when its social associations undertake shifts from public to private, but the other way round the growth of privatization is in turn a purposeful response to the lack of trust in the public systems and is deeply connected the difficulty of the public to manage our common resources.

This point introduces a further problem talking about the Commons and it is part of the dissertation made in the late sixties by the biologist Garret Hardin⁸⁷ and well known as *the Tragedy of Commons*. In this article published on Science, the commons is a shared plot of grassland used by all livestock farmers in a village. Each farmer keeps adding more livestock to graze on the Commons, because he does not experience a direct cost for doing so. After a few years, overgrazing destroys the commons, it becomes unusable and the village perishes⁸⁸. Hardin's theory is often used to argue in favor of private property and against theories that defend communal ownership of resources and, even if in some ways too simplistic, it focus the attention on the importance of spotting out what organizational form is required to manage the commons in

84 Z. BAUMAN, *Liquid Modernity*, Polity Press, June 2000, p.96;

85 R. D. PUTNAM (January 9, 1941) is a political scientist and professor of public policy at the Harvard University John F. Kennedy School of Government. He is also visiting professor and director of the Manchester Graduate Summer Programme in Social Change, University of Manchester (UK).

86 R. PUTNAM, *Bowling Alone: The Collapse and Revival of American Community*, Touchstone Books by Simon & Schuster, July 2001;

87 G. J. HARDIN (April 21, 1915 – September 14, 2003), was an American ecologist who warned of the dangers of overpopulation;

88 G. HARDIN, *The Tragedy of the Commons*, Science, vol. 162, n. 3859, December 1968, pp. 1243-1248, via <http://www.sciencemag.org/content/162/3859/1243.full>;

a sustainable way: a still top-down strategy as a specific governmental bureau, the “invisible hand” of the free market or new forms of common management as a result of a collective intelligence apparatus.

Moreover, as trust collapsed in the existing centralized institutional system, people began to find new systems and services to store trust.

“From drinking water to grazing land, the commons have been a central part of our human history, yet have been somewhat obfuscated from our collective awareness as populations have become urbanized, personalized, and privatized”⁸⁹

Nowadays larger institutional and public investment has practically come to a standstill – especially the building sector, which is confronted with a dramatic reduction in percentage of investments in Europe – and private initiative has to come to the rescue.

Small-scale and bottom-up initiatives have to compensate the loss and this progressively lead to the creation of *networked publics* groups of people, not previously connected by any determined relations, gathering around specific topics of interest, using new digital media. Moreover, digital media have introduced new mechanisms for managing and coordinating collective actions and whether traditional commons used to suffer for the lack of information leading to less than optimal decision making; nowadays using mobile phones or other geo-located media, people are able to share a considerably larger number of information and base adaptive decisions on it.

89 S. BURNHAM, *The Publicization of Trust*, VOLUME, n.30, Stichting Archis, February 2012, p. 5 (insert);

1.2.3 Good approaches and city planning through digital technologies

Property rights are some of the most archetypal principles attached to the history of our society and they went intensifying especially with the evolution of urban environments, as they becomes the measure of the perceived degree of responsibility for the citizen towards a space of the city and of the possibility he has to act on it. In conversational language, as in much as in the theoretical speech held in the past, the public space is considered as the most suited for democracy and for the collective life of the citizens. This notion of the public, however, was tied to a typical structure of the latest Fordist society and does not reflect more completely the working dynamics of the contemporary city. The end of large public investments, especially in the construction sector, has initially led to the an era of privatization and of dramatic dichotomy between the public and private sphere of citizens, but concealing a rhizomatic desire of re-appropriation towards the spaces of cities and the shared urban practices. The advent of digital media has allowed new mechanisms for the management and coordination of collective action to speed up and be optimized; through smart phones and other geo-localized devices, citizens have been able to share a considerable amount of data and information and to found on these the organization of joint actions and choices.

Companies such as *Microsoft*, *Apple*, and *Adobe* are usually the owners of software rights: you pay a fee to acquire a license to use the software (you don't own the software per se), and the license states what you may and may not do with the software.

In particular you are not allowed to make copies of the software you paid for and you may not modify the software. Source code is guarded closely secret. In 1983, a movement against this kind of restrictive licensing for software was

started with the name of “Free software”, and nowadays is commonly known as *Open-Source* software. This allows you to make copies; in particular every user is given the original human-written source code, and is encouraged to study it, modify it, improve it or reuse portions of it. Since 1983, free or *Open-Source* software has greatly increased in availability and sophistication, mainly thanks to the Internet: people could copy software and source codes easily and at cost zero, adapting them to their self interests.

The *Open-Source* community has created many tools for electronic communication and collaboration: blogs, mailing lists, shared live documents. The first *Wiki*⁹⁰, created by Ward Cunningham⁹¹, was a sort of collection of computer programming knowledge and codes. Later, the system of wiki was used in order to create an encyclopedia, thus Wikipedia was born, creating one of the major source of information, made entirely by volunteers.

Soon people who were not mainly interested in the computers used the online collaborations and communications. The concept of open-source process became a paradigm in every kind of creation and managing.

The functioning of the *Open-Source* is based upon several principles:

- An open-data *transparency* in order to let people use, modify and ultimately reproduce;
- *Peer production*, a collaborative production and management that is enabled by the spreading of online collaborating platforms;
- The generality of the code and its possibility to be made by the users;
- The collaboration could ask the general crowds or mass about specific problems, this process is called *crowd-sourcing*. According to *Wired*

90 *Wiki*, is a website which allows its users to add, modify, or delete its content via a web-browser usually using a simplified markup language. The majority of wiki are created collaboratively;

91 H. CUNNINGHAM, is an American computer programmer who developed the first *wiki*. He started programming the software *WikiWikiWeb* in 1994. He is considered a pioneer in both design patterns and extreme programming;

*Magazine*⁹²:

*“Crowd-sourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential laborers.”*⁹³

When the Open-Source process is applied to the management and design of the city the result could be what Salingeros⁹⁴ calls *Peer-to-Peer Urbanism*, described as:

*“Individuals championing collaborative design and user participation in planning. [...] P2P-Urbanism is all about letting people design and build their own environments, using information and techniques that are shared freely. [...] It should be based upon freely based design rules rather than some secret code decided upon an appointed authority. [...] the code must be open to modification and adaption to local conditions and individual needs”*⁹⁵

In Salingeros vision:

“One implication of this new way of thinking about the city is to encourage reclaiming common open space in the urban environment. A significant phenomena in the XX century urbanism has been the deliberate elimination of shared public space, since the open space surrounding stand-alone modernist buildings tend to be amorphous, hostile, and therefore useless. Attractive public space was recreated elsewhere under the guise of private, controlled space within commercial centers. In this way, common space that is essential for citizen interactions (and thus form the basis of shared societal values) has been privatized, re-packaged, and then sold back to people. P2P urbanism

92 *Wired* (stylized as *WIRED*), is a full-color monthly American magazine and on-line periodical, published since January 1993, that reports on how new and developing technology affects culture, the economy, and politics. Owned by Condé Nast, it is headquartered in San Francisco, California;

93 J. HOWE, *The rise of crowdsourcing*, *Wired Magazine*, n. 14.06; June 2006, via <http://www.wired.com/wired/archive/14.06/crowds.html>;

94 N. A. SALINGEROS, is a mathematician known for his work on urban theory, architectural theory, complexity theory, and design philosophy. He teaches mathematics, and is professor of Mathematics at the University of Texas San Antonio. He is also on the Architecture faculties of universities in Italy, Mexico and the Netherlands;

95 N. SALINGAROS, *P2P Urbanism*, Umbau-Verlag, Solingen, 2011, p. 14;

reverses this tendency."⁹⁶

The *Open-Source* processes, once applied on the field of urban design, give a framework to appreciate different practices, elaborated before the introduction of collaborative platforms and technological support, but by them catalyzed.

The *Peer-to-Peer Urbanism* is a definition, that once applied into reality doesn't (fortunately) lead to make people design and build their environment, but to the possibility of having horizontal practices, re-appropriation of the city, a more engaged action of citizens, redefinition of the common.

Sassen⁹⁷ argued that that is actually the aim towards what smart and intelligent city should lead. Not to an invisible environment that automatically manages in the most efficient way possible the city, but rather:

*"To push this urbanizing of technologies to strengthen horizontal practices and initiatives. Leading urban civic institutions tend to verticalize this work of making the urban. But they do matter. Here the appropriate technology is more a kind to developing an urban Wikileaks—vertical institutions that begin to leak and thereby enable citizens to work with at least some of what is useful in those leaks in the ways they see fit. This is a kind to horizontalizing what is now vertical, imposed by top-down authority."*⁹⁸

Considering the different principles of Open-Sources process and urbanisms, the first chapter is about transparency and openness of data.

*"I have long thought that all the major infrastructures, from sewage to electricity and broadband, should be covered by transparent walls and floors, so if you are waiting for the bus, you can actually see how the city all works and begin to get engaged. Today, when walls are pregnant with software capabilities, why not make this transparent? All our computerized systems should become transparent. It creates its own public shared domain."*⁹⁹

96 ivi;

97 S. SASSEN, is a Dutch-American sociologist noted for her analyses of globalization and international human migration. She currently is Professor of Sociology at Columbia University and at the London School of Economics;

98 S. SASSEN, *Open Source Urbanism*, from the online article by *Domus Web* (via <http://www.domusweb.it/en/op-ed/open-source-urbanism/>), as report of the lecture held by the sociologist in New York, 2011;

99 ivi;

In fact the current development of the emerging of new media in the urban landscape is about the so-called city as an information generating system. Nowadays a wide range of devices sense a consistent number of information coming from very different sources. Once collected, this information are organized, interpreted and visualized.

What is most relevant to underline at this purpose, is that every single citizen, consciously or unconsciously, is feeding this system of information collecting and generating. And those collection of data, generally defined *data commons*, have to be considered as an instrument for multiple goals, among those they represent clearly a valuable source of information for urban planners¹⁰⁰.

It is important to notice that those data are a common good, in themselves. Their production, and reproduction is based upon the idea of mutualism or reflexivity: once somebody consumes the data, is in the same time is contributing to the creation of them.

The availability of data generated by their own actions in the urban setting increases the citizens awareness of themselves as promoters of the outcome of living reality. That might promote a more engaged attitude towards the management and the solving of city common problems and issues.

An extremely positive aspect, in fact as pointed out by a number of researches conducted on the subject, is that the visibility of individual contribution to the greater whole is precondition for successful management of the commons. If, therefore, the information about who is the author of a given action in public affairs is displayed to others, the result is a renewed sense of reciprocity and mutual trust.

“The visualisation of invisible processes and complex relationships is one of new media’s greatest strengths, good examples of this include data visualisations and social network mapping. Urban sociologist Saskia Sassen believes that citizens become more fully engaged with complex open processes when the underlying technologies and infrastructures are made visible, something that applies to both physical infrastructures and software processes.”

Another media’s strength could be the application of protocols of *reciprocity*

100 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012, p. 42;

both for technical and social contexts. The Internet *Pear-to-Pear* networks are illuminating in this sense: these systems allow the upload of your own library of files and share it with other users and the possibility to download from the libraries they make available. The more the number of connected users will be significant and the more the amount of shared files in the network, the higher will be the possibility to obtain positive results to your online searches. Even in this case, de Lange and de Waal, suggest as a method of operation of this kind could be shifted on the city plan, so that the contribution made by each of the users/citizens can become immediately a useful content to others, which in turn will provide contributions. This process could feed reciprocity of action and it must be the base of the way to interact and live the urban public space.

The Crowd-Sourcing could be “urbanized” in a series of new methodologies of organization, as bottom-up community initiatives, complementing a series of strategies to involve citizens that have been part of the urban practice for several decades now. Town planner, for example, according to the principle of ‘place making’, involve local dwellers to express their thoughts within community-driven processes and politician and other public or semi-public figures started dealing with the matter of citizen participation and crowd management for some time now. Moreover, these two approaches – bottom-up spontaneous organization and top-down policies initiated by institutionalized party – are not clearly separated and distinguishable from one another.

“Policy organisations, knowledge institutes, housing corporations and so on are also made up of ‘ordinary citizens’. And the reverse is also true, because through institutions, citizens can engage in debates about the design of their city. Moreover [...] it is an illusion to think that bottom-up participation can run by itself, without the support of institutions. The question is whether – and if so, how – new media can feed the creativity and ideas of non-institutional citizens into existing stakeholding structures.”

The management of Commons has always been an insidious business, mainly because of the difficulty typical of trustees and managers that end up pursuing their own interests rather than those of the community. Indeed it is a trivial matter, failure in accomplishing the precepts of the common good does not necessarily imply concussion - an arbitrary use of public good to satisfy own personal ends - much more probably implies the impossibility to understand what is actually good for Commons. In a complex situation for the noticeable number of individuals, socio-cultural diversity of the members and stratification of often-conflicting intentions – like it often happens in a big city – it is a very difficult task to find out which is the goal that is in the best in terms of public interest, regardless of singles. The involvement of ordinary citizens is therefore necessary, but extremely complicated.

1.2.4 Best practices of “common oriented” urbanisms

The practice of sharing and participation, arised from a rebirth of the value of the common good, also thanks to the advantages led by the employ of media technologies as a higher efficiency tool to send messages and gather people, have had extremely relevant consequences on the action practice of the common citizen.

The sharing of data collected within the city by sensing devices promoted a sense of awareness towards the city, displaying the results of their actions on the public realm. The strategies of participatory planning which allows – through the use of appropriate 3-D modeling software – the involvement of citizens in decisions regarding the future structure of the neighborhoods in which they live, transmitted the consciousness of being really able to improve their reality and of the primary role of every dweller in this regard. Geolocalized social platforms, designed to consent a district to discuss about problems affecting them as a community, has led to projects born from the bottom, as the expression of a group of concerned citizens, and fueled the dialogue between individuals, returning to the sphere of the neighborhood that degree of interaction that is sometimes lost. The use of digital technologies in strategies to promote political participation and sharing further strengthened a desire for appropriation and responsibility towards the common issue. Particularly in urban centers with “special inhabitants”, as temporary users represented by students in small city campus, a sense of recognition of the collective value of space is extremely significant and should be encouraged by the administration.

In order to give this investigation a framework not only theoretical – the relevance of whom is crucial to outline a more complete vision of the subject – but also of the effective incentives offered by the introduction of digital media in

the urban practice and of the rearranging of opportunities, as well as responsibilities, it is useful to propose a direct observation of a few examples, that without excessive risk can be awarded with the title of *best practices*.

The first example here reported refers to a project has been chosen to stress the attention on the fact that every single citizen, consciously or unconsciously, is feeding the system of collection and generation of information by and within the city. This gathering of data, generally defined *data commons*, have to be considered as an instrument for multiple goals.

Even if dealing with a common good, the notion of scarcity – as we discussed previously talking about Hardin’s theory of the common goods – assumes here a different value, as we are dealing with not finite physical goods and services, there’s no risk that the use of information even by a conspicuous number of user could led to the “out of stock” state. Indeed condition for the creation of the *data commons* include the availability of, and the access to, open data and the skills citizens have to use the data in meaningful way¹⁰¹.

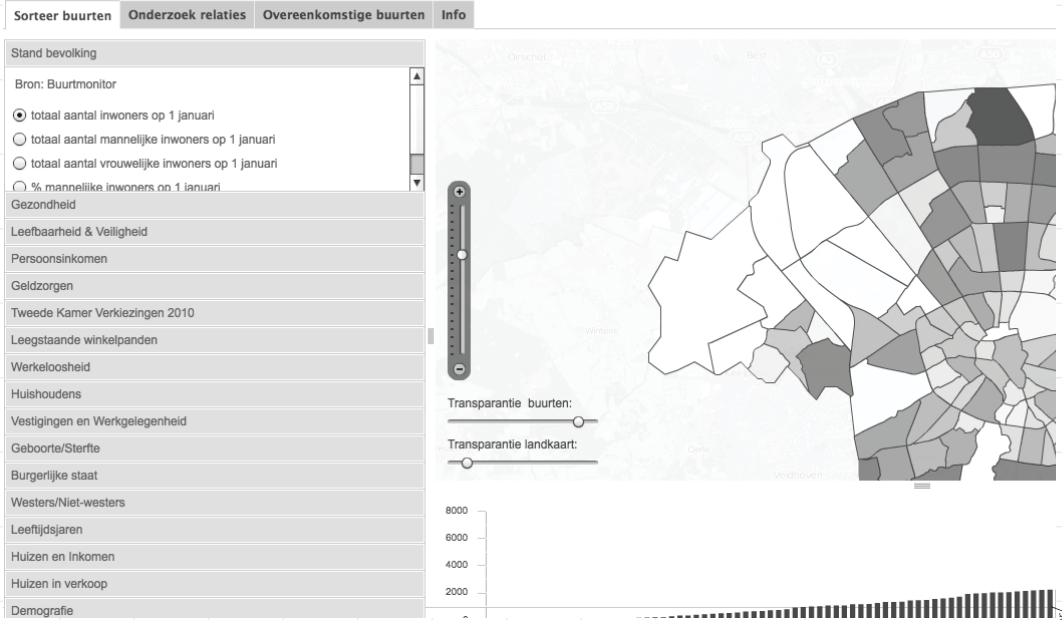
*Open Data Eindhoven*¹⁰², was settled to open up government data to the community for meaningful reuses. A platform to get data holders and potential users to work together to achieve good delivery of services for city dwellers was created. All the party involved – government, private enterprise, knowledge institute – agreed to the principle that the threatened information should be published, opening up data for meaningful use.

Even if dealing with privacy issue is always complicated for authorities, a shift in the attitude is taking place, since the relevance of datasets is being gradually discovered and that the opening up of this information could yield a multiplicity of benefits for the community at large.

101 M. DE WAAL, M. DE LANGE, *What is ownership and why does it matter?*, VOLUME, n.30, Stichting Archis, February 2012, p. 41;

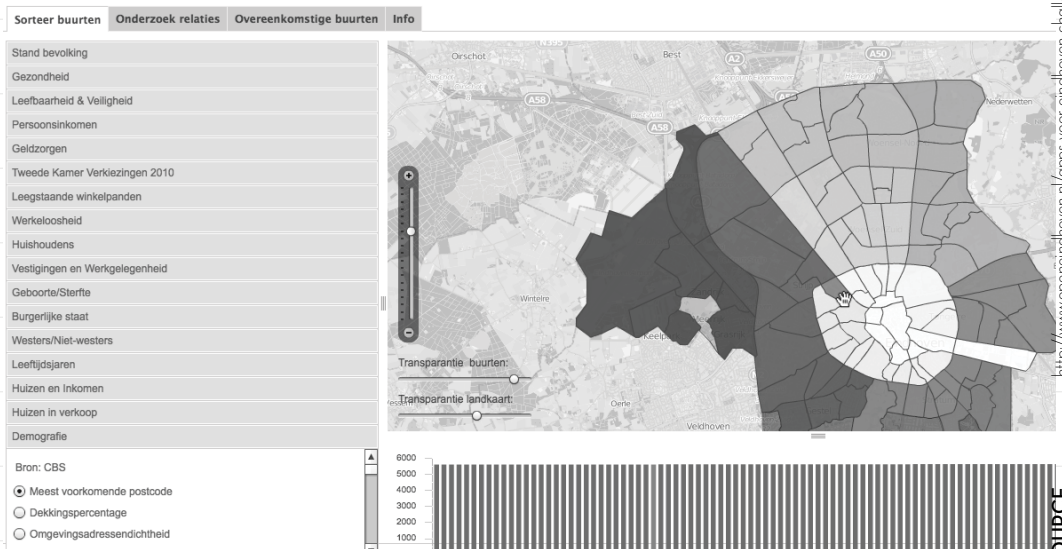
102 “[...] The Open Data Platform Eindhoven is constantly emerging, the platform enables people and organizations to come together and work together. Because of this, Eindhoven can exploit its potential advantage in the field of technology and cooperation. With a creative and inquisitive approach to open data is an enrichment and transparency established towards the involvement and cooperation promoted in various segments of society and the economy.”, according to the definition given on the official web-site of the project (<http://www.openeindhoven.nl>). The workgroup Open Data Eindhoven has a community application to discuss and exchange information (<http://openeindhoven.ning.com>) and a wiki for knowledge and practical information (<http://www.openeindhoven.nl/wiki/>);

Buurtvergelijker :: Eindhoven



(figure 3) Open Data Eindhoven, 2010 - screenshot 1

Buurtvergelijker :: Eindhoven



(figure 4) Open Data Eindhoven, 2010 - screenshot 2

<http://www.openeindhoven.nl/apps-voor-eindhoven-challenge/apps-inzendingen/buurtvergelijker/>

SOURCE

Make datasets public is a crucial operation, it represents the transfer by public institution of their exclusively ownership rights towards an inclusive system of ownership, that allows citizen to obtain access to the data.

*“Open data is a way of achieving transparency, simplification, exchange and creative re-combinations in a relationship between citizens and government authorities. The process of releasing data and using it creatively for social purposes runs parallel to this – they reinforce one another. The matter of ownership in the context of open data therefore impacts on mutually connected and highly topical issues: bridging the gap between citizens and government, on the one hand, and increasing citizen-involvement in local issues, on the other.”*¹⁰³

René Paré, one of the project’s initiators, sustain that publish data is not enough, a preliminary step is thus necessary. He retains a certain percentage of curiosity is indispensable: people have to show interest in what is happening beyond the surface, which invisible messages are flowing through the city¹⁰⁴. The data liberalization itself does not guarantee the capacity to make a proper use of them, citizen have to learn how to generate knowledge from these information.

Anyhow, even if open data strategies are still at an early stage, according to Paré they can really contribute both in raising citizen awareness about urban issues and in increasing governmental transparency, as the key-approach for public institutions to generates greater trust by the dwellers. The availability of data generated by their own actions in the urban setting increases in citizen awareness of himself as one of the promoter of the outcome of the lived reality. Moreover it enables him to get to now about choices and behaviors by others and to obtain knowledge expendable in many fields¹⁰⁵.

Another project we would report relates to a more direct citizen participation in public decisions of municipalities through experiments of participatory design. In this case, digital tools and augmented reality in particular allow the involvement in the design process even by figures not professionally engaged and as a result an incentive – in term of a renewed interest in the public issue – is obtained.

103 M. DE LANGE, M. DE WAAL, *Ownership in the Hybrid City, Virtueel Platform Research*, 2012, p. 24, via <http://virtueelplatform.nl/english/publications>;

104 *ibidem*, p. 21;

105 *ivi*;

*Face your World*¹⁰⁶ is a long term project, born from the collaboration between the artist Jeanne van Heeswijk¹⁰⁷ and the architect Dennis Kaspori¹⁰⁸. It involves people from the local community, replacing urban planners “*in an artwork that bring together town planning, computer technology and creative linking*”¹⁰⁹. The first phase of the project took place in Columbus, Ohio, where a group of children from disadvantaged neighborhoods was asked, after being taken on a tour bus around the city, to upload images and suggestions they had raised in their journey to a tridimensional environment, using their computer and digital cameras. In this virtual simulation they have to advise the contents to the other members of the community, sustain or vote down other proposals and debate about the neighborhood they dreamt of. The results were then displayed on screens on the public space.

The second version of the project took place in Amsterdam in 2005, where they created the *Face Your Word Stedelijklab (UrbanLab)*¹¹⁰, a practical education model enabling young students to take part in the elaboration of the project of urban regeneration for a small city park. A city laboratory was set up to, where local resident, stakeholders and experts could work together to elaborate alternative proposal for the design of the green area. The final plan was thus presented to local municipality, who accepted it almost entirely. Also in

106 “The project Face Your World enables young people to investigate the environment in which they live. It gives them instruments so that they can – like a genuine town planner – change their environment.”, according to the definition given on the official web-site of the project (<http://classic.skor.nl/artefact-1114-en.html>);

107 J. VAN HEESWIJK, is an artist who works on facilitating the creation of lively and diversified public spaces, typically from abandoned or derelict sites. Her socially engaged art practice generates new forms of encounter while challenging bureaucratic conventions and acquired rules (<http://www.jeannetworks.net>);

108 D. KASPORI, is an architect and a founding member of *The Maze Corporation*, an office for research and design on issues related to the urban condition, public space and housing. He is focused on the development of an engaged architectural practice that seeks new spatial solutions these issues in close collaboration with other fields of expertise;

109 M. DE LANGE, M. DE WAAL, *Ownership in the Hybrid City, Virtueel Platform Research*, 2012, p. 25, via <http://virtueelplatform.nl/english/publications>;

110 “The Face Your World project, an initiative of the artist Jeanne van Heeswijk, offers children a collective learning environment in which they can learn how to investigate their living environment and can also adapt it. Face Your World also provides a practical model for an urban planning process that proceeds from the profound involvement of local residents and strives to invest urban renewal tasks, which are more usually realised on the basis of economic principles, with existing social and cultural capital”, according to the definition given on the official web-site of the project (<http://www.faceyourworld.net/en/about/history/>);



(figure 5) J. VAN HEESWIJK, D. KASPORI, Face Your World, 2006 - the software

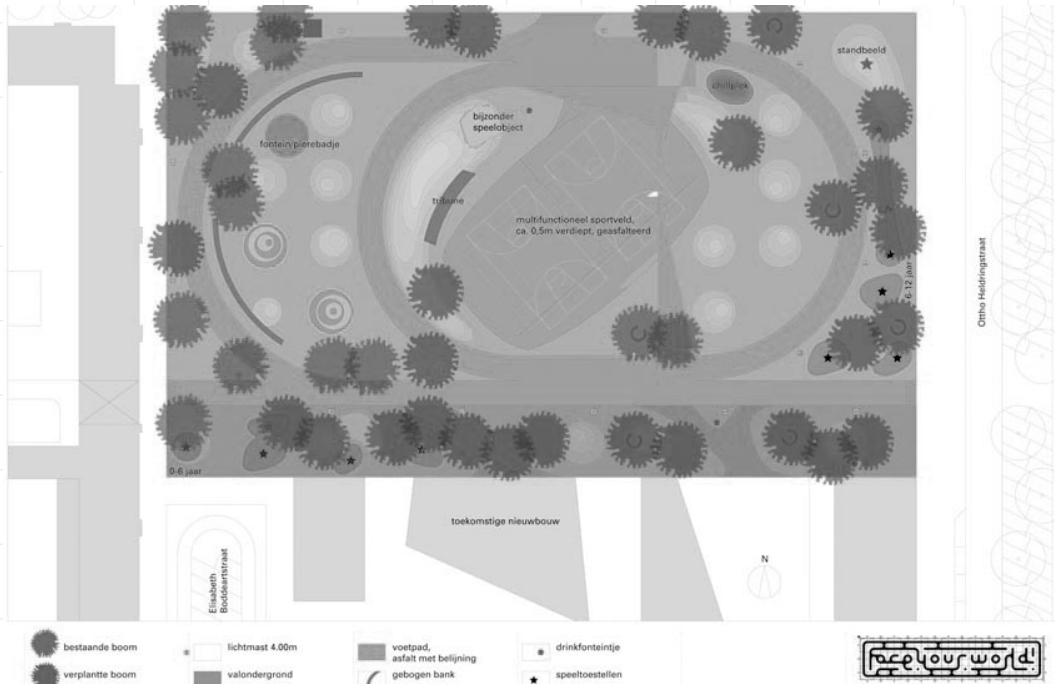


(figure 6) J. VAN HEESWIJK, D. KASPORI, Face Your World, 2006 - the meetings

<http://www.faceyourworld.nl>

SOURCE

common oriented urbanism_best practices



(figure 7) J. VAN HEESWIJK, D. KASPORI, Face Your World, 2006 - plan



(figure 8) J. VAN HEESWIJK, D. KASPORI, Face Your World, 2006 - overview

<http://www.faceyourworld.nl>

SOURCE



this case, the virtual simulation tool was used, implemented with an integrate chat function to support the collaboration also outside the laboratory.

The most impressive part of this two experiments, that differentiate them from other similar project that foresee the involvement of citizens, is in the efficiency of the results achieved, both for an excellent agreement between the parties, but also for the use of an extremely effective technological interface. The design software employed, indeed, allowed a three-dimensional simulation of the actual condition of things, where the individual user could add - overlap, it would be better to say - photographic contents. The effectiveness of the vehicle is its simplicity and it reckons two fundamental issues of participated planning.

The former is that since the people involved are not professionals in the field of urban planning, architecture and design; it is anything but guaranteed they are able to transform an almost unconscious desire for a place into a formally complete project. The ability to translate a mood, a feeling, an expectation into a morphological and programmatic organization is a skill that comes together with a professional training, is the task of architects and urban planners. The possibility to attach photos, as a real-enough manifestation of their own hidden feelings, thus becomes a valuable tool, because an audience of non-experts can express through allegories and comparisons in the field of urban planning and urban designing. *“I would like a park like ... a playground similar to...”*

The second instance the here-used software used faced with is in terms of the simplicity of the interface. This means that for the complex operations of the program, correspond few simple commands of intervention and manipulation by the user.

Van Heeswijk – especially interested in this condition of what she calls the proto-urban condition, the production of the city – believes that cities need inclusive for, of organization, arguing as below:

“[...] making the public space accessible and transparent to the citizen enables the citizen to form it and place him or herself within it and in relation to it. In this project, there are again two forms of actorship: engagement as a co-designer in one’s own physical environment, and visualisation of one’s physical environment and place within it, thereby transforming oneself from a passive consumer in our mediated world into an active producer.”¹¹¹

111 M. DE LANGE, M. DE WAAL, *Ownership in the Hybrid City, Virtueel Platform Research*, 2012, p. 27, via <http://virtueelplatform.nl/english/publications>;

The last project we report among these best practices is called *Improve the Neighborhood*, a platform born to focus the local council's attention to existing issue and suggest improvement.

Each user/dweller, that intends to signal a problem, has to send an e-mail and the issue is passed on to the responsible body, but this idea to be kept in consideration needs a collection of votes. The person has thus to obtain other citizen approval, using his other social networks platforms to catch votes and raise common attention toward the problem. Compared to other similar project, which goal consist basically in the creation of a *geo-located social network*, *Improve the Neighborhood (Verbeter-de-buurt)*¹¹² stood out for the socially oriented structure of the outset, with local resident invited to respond to someone else report and eventually vote for it. Another peculiarity is the appealing graphic and the ease of use, that consist in a *Google Maps*-based dynamic maps, where different inputs have different colors: a red pin indicates a reported problem, a yellow light bulb indicates an idea, when the problem is solved it becomes a green flag. Problems can be shared via website, mobile App or with a layer on the augmented reality platform *Layar*¹¹³.

Moreover, this digital square has been used by local authorities to organize neighborhood surveys, involving local people and representatives of the municipality, creating new opportunities for discussion and co-management of the quarter.

An extremely important aspect of this, is once again in the sense of awareness that is acquired by the citizens: see your alerts shown on the map, reflected in the vote of others or rather be convinced that it is a negligible matter, feeds and strengthens the sense of belonging to the community, leading to a greater social responsibility in individuals. In addition, the platform, through periodical publications, provides members of the community information, data, images of other districts, the problems there encountered and the solutions they may have found, and this not only inspires the choices to be performed with best

112 *Improve the Neighborhood (Verbeter-de-buurt)*, is a dutch social platform that unites gains citizen and local government to improve the neighbourhood. The platform offers other neighbours the options to read, vote and react on issues posted by their peers, encouraging dialogue (<http://www.verbeterdebuurt.nl>);

113 *Layar*, is a Dutch company based in Amsterdam, founded in 2009 by Raimo van der Klein, Claire Boonstra and Maarten Lens-FitzGerald. They have created a mobile browser called *Layar*. The browser allows users to find various items based upon augmented reality technology. (<http://www.layar.com>);

practice cases, but incentive further the awareness of being part of an even larger group, made of communities similar to your own. A civil awareness at different scales - local and urban - is so stimulated and the *crowd-sourcing* is used in the field where has been shown to be more effective: the common domain.

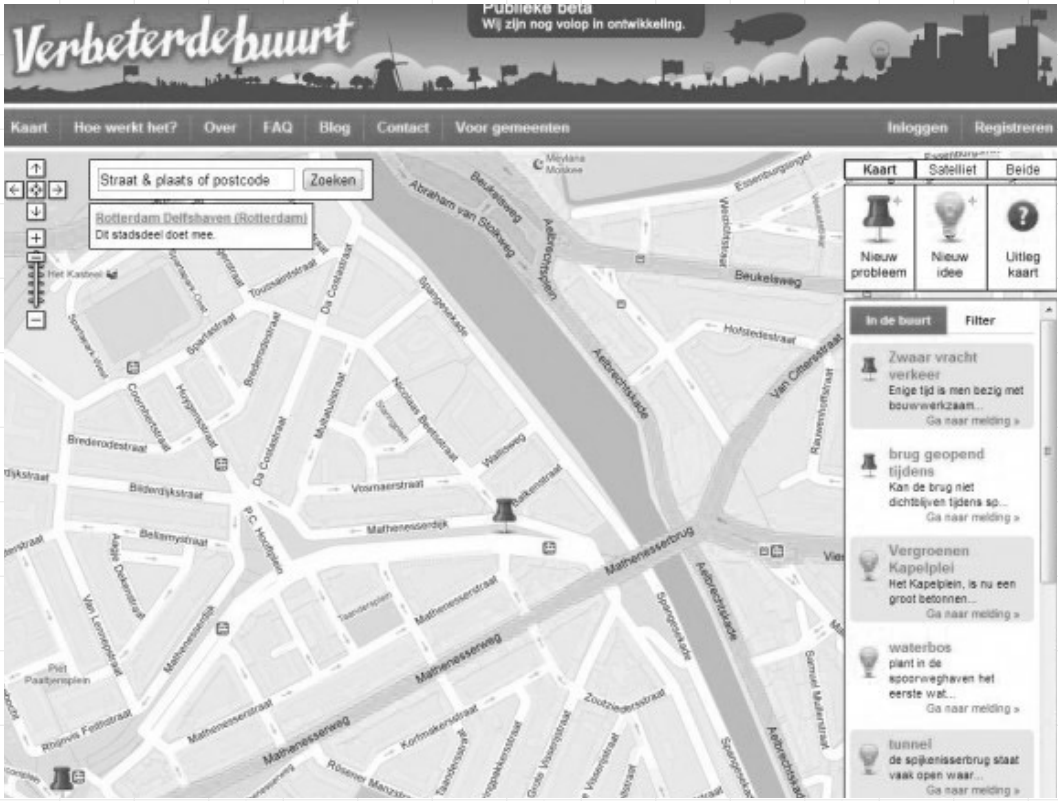
What was about to bring to attention is that in the contemporary urban environment - dynamics of which are stratified in a growing complexity of the system - in the formulation of decisions that decreed the structure and future of the city, is to be held into account the role of people as *co-creators* and *co-managers* of the public domain. Citizens should have a sense of self - and this is a responsibility of the institution to raise this consciousness - not as *users* (those who "use") - of the city, but rather as *makers* of urban dynamics, as the principal creators of the future outcome of it.

The need to involve citizens, therefore, becomes more pronounced the more is referred to urban contexts in which *certain types of inhabitants* act. Neo-residents, temporary dwellers and citizens-for-generation trigger dynamics of the use of the city and of its public spaces very different from each other and sometimes even in open conflict.

In this regard, Urbino appears as a paradigmatic case; mainly inhabited by temporary actors: *university students*. Young people from all over Italy are drawn in the small town of Marche by the excellent academic offer, they spend within a period of a few years - useful to achieve the desired degree - and then in most cases leave the city, to move elsewhere in search of work. The use of the urban spaces those students make is evidently on a temporary basis; it is planned, in fact, that the transfer to Urbino is for a medium-short period and the choice to remain in place even after the completion of studies, moving indefinitely, is rather an exception.

The effects, even dramatic, that this kind of attitude generate, are easily imaginable. Students are *temporary users*: they spend in Urbino a medium-short period of time, attending the good universities and then going away. They are not interested in the fortunes and in the outcomes of the spaces within the city, simply because they won't be there in ten years.

Then promote policies that bring attention to the mechanisms of re-appropriation of public spaces, and collective action is essential. Return a feeling of *common good*, certainly as a collective property to be used, but above all to safeguard, both for a later use and, that as a legacy for generations to come. Not "*my city*", but mostly "*our city*", the one that belongs to us as citizen, that represents us; regain a sense of common belonging to places is definitely one of the key objectives to be pursued.



(figure 9) STICHTING VERBETERDEBUURT, Improve The Neighbourhood, 2009



(figure 10) STICHTING VERBETERDEBUURT, Improve The Neighbourhood, 2009

The involvement of citizen – both *effective* citizen both temporary ones – in the processes of decision making and decision taking has to be a crucial point for nowadays public administration. And, as previously argued, the implementation of digital media technologies in the public realm can actually represent a valid tool to incentive, speed up and optimize these hoped collaborations and partnerships between municipalities and common citizens.

1.3

Digital mapping: an outcome and a tool

1.3.1 The Renaissance of maps

Mapping, thanks to the possibility of overlap of layers, to the digital support – which allows a real time update – and new GPS devices which, combined with other media and sensors, facilitate the acquisition of a number of increasingly relevant information, has arrived at a point of substantial change in practices and purposes. Mapped items are the different levels of information that our spaces have (people, feelings, memories, pollution), making the new maps the best tool to make visible invisible processes. The codes are more and more free, the maps are online available and are updated in real time. The information mapped is often edited in open-source, thanks to the direct contributions and volunteers users.

During the past two decades, the nature of cities has been undergoing an enormous shift powered by information technology that avails a vast variety of information by tracking people's behaviour in the city. Common data can be collected and thus could change common behaviours. As a result, the work, travel and social patterns of urban residents have been gradually transformed. The action of visualizing and sharing that information is a necessary task that could be embodied by maps.

Maps and the act of mapping are going through a moment of great development in these years. Some scholars have argued that this is the *Renaissance of Maps*¹¹⁴ and that what digital tools are doing today to the act of mapping could be compared to what photography made to painting two hundred years ago.

114 J. ABRAMS, P. HALL, *Else /Where: Mapping- new cartographies of networks and territories*, University of Minnesota, Design Institute, Minneapolis, 2006, p. 2;

To clarify this statement it is necessary to understand how maps are not neutral instruments, but powerful tools that deeply affect the way people see the world, and change it.

Franco Farinelli¹¹⁵ in his book *Geografia*¹¹⁶, recognizes how traditional Maps, representing a scaled reality, were just a mirror of a commercial society, that needed those kinds of information to trade. In other words, city planners, urban designers and architects, who work intensively with maps, are deeply influenced by the type of these latter they decided to use. Different geographical restitutions may profoundly affect the outcome of their works. For example the introduction in XVI Century of city plans based on surveying results and perfectly scaled, such as Leonardo Da Vinci's *Plan of Imola*¹¹⁷ (1502) and Leonardo Bufalini's *Plan of Rome*¹¹⁸ (1551), is simultaneous to the spreading of the interest in "*the city as an ideal architectural form*" in the Renaissance¹¹⁹.

With the same logic *The Map of Rome* by Gianbattista Nolli¹²⁰ – realized with an infinitive projecting point that, visualizing scaled distances, and volumes – provided a tool to start urban studies on city formal aspect.

The Rationalism urbanism, in the 70s requires a different type of representation of space, thus the functional masterplanning, makes immediately visible the different functions in the city.

In the era of informational technology, several situations changed the

115 F. FARINELLI, is an Italian geographer;

116 F. FARINELLI, *Geografia: Un'introduzione ai modelli del mondo*, Einaudi, Torino, 2003;

117 *PLAN OF IMOLA*, made by Leonardo, while he was in Florence. The work is astonishing for technical achievements and precision. In fact Leonardo's map depicts every street, building, and every parcel of land. The mode of projection is from an infinite point, a big innovation in those times;

118 *PLAN OF ROME*, made by Leonardo Bufalini, was the first printed map of the Eternal City. This type of map, which includes plans of individual structures within the larger urban matrix, is called ichnographic;

119 J. A. PINTO, *Origins and development of the Ichnographic City Plan*, *Journal of the society of Architectural Historian*, Vol. 35, nz. 1, March 1976, pp. 35-50;

120 *PIANTA GRANDE DI ROMA*, by Gian Battista Nolli (1748). The map reflects the Bufalini map, but this ichnographic map (orthogonal projection from an infinite point), is not only a figure ground representation, but it includes public open spaces, and it is one of the first map oriented to the North;

way city are understood, and lived. Different ways of representing cities are required in order to deal with a complex set of information. At the same time, new technologies changed the role, and the act of mapping, bringing it to a more subjective, customized process. As general definition we could say that:

*“Mapping has emerged in the information age as a means to make the complex accessible, the hidden visible, the unmappable mappable.”*¹²¹

The on-going processes are different and involve different actors and technologies, but they could be summarized as follows.

DESPONSABILIZATION

In experienced cartography there has always been the feeling that creating a map was a high subjective action.

J.B. Harley¹²² argued that maps are social construction of the world. *“Far from holding up a simple mirror of nature that is true or false, maps re-describe the world in terms of relations of power and cultural practices, preferences and priorities”*¹²³.

Cartography started in the XVII Century and as recognized discipline in the XIX Century; its products, the maps, are objective archives of geographical information that usually describe scaled distances and forms. Compared to other types of visualizations, maps carry a special sense of authority, and the evolution of cartography is a history of inventing devices that capture more accurate data and methods that make more accurate reproductions of them.

Only technicians know that objectivity of maps is just a myth and that each map carries a lot of subjective choices. From the mode of projection, to the way

121 J. ABRAMS, P. HALL, *Else /Where: Mapping- new cartographies of networks and territories*, University of Minnesota design Institute, Minneapolis, 2006, p. 2;

122 J. B. HARLEY (1932 –1991) was a geographer, cartographer, and map historian at the universities of Birmingham, Liverpool, Exeter and Wisconsin–Milwaukee. He is the founding co-editor of *The History of Cartography*. In recent years, Harley’s work has gained broad prominence among geographers and social theorists, and it has contributed greatly to the emerging discipline of critical cartography;

123 J. B. HARLEY, *Text and Contexts in the Interpretation of Early Maps*, in *The New Nature of Maps: Essays in the History of Cartography*, Johns Hopkins University Press, Baltimore and London, 2001, p. 35;

objective information is visualized. As Monmonier¹²⁴ stated in his book *How to Lie with Maps*, “A single map is but one of an indefinitely large number of maps that might be produced for the same situation or from the same data.”¹²⁵

Today, with satellite photography, GPS locating and *Geographical Information Systems (GIS)*¹²⁶, we are able to acquire and plot geographical data in high fidelity on the global scale. This geographical information is easy-to-access and free for everybody. This created freedom and responsibility at the same time, in sense that mapping is no more the only tool in charge to give geographical information about the world, but it could fulfil different goals, and layer different types of information. This freedom created in turn a sense of responsibility towards what to represent and how to represent it.

LAYARING

The *Geographic Information System (GIS)*, in the way it is designed, let the map-makers collect different layers of information and the decide where to switch on, switch off. Thus the choice of mapmakers has been reduced. Instead of picking what to draw, they could draw everything and let the user decide what to visualize, leading to a more customer-oriented conceptualization of maps.

DEMOCRATIZATION

The widespread of *Geographic Information System (GIS)*, *Google Maps Applica-*

124 — M. MONMONIER (1943-) is a Distinguished Professor of Geography at the Maxwell School of Syracuse University. He specializes in toponymy, geography, and geographic information systems. His popular written works show a combination of serious study and a sense of humor. Most of his work is published by University of Chicago Press. He has appeared on National Public Radio interview programs;

125 — M. MONMONIER, *How to Lie with Maps*, University of Chicago press, Chicago, 1996

126 — *Geographic information system (GIS)* is a system designed to capture, store, analyze, manage and present all types of geographical information. *GIS* is the merging of cartography, statistical analysis, and database technology: in the simplest words it is a spatial data infrastructure. Generally a GIS is custom-designed for an organization: *GIS* applications are tools that allow users to create interactive queries, analyze spatial information, edit data in maps, and present the result of all these operations;

tion Programmer's Interface (API)¹²⁷, has spawned a new generation of “users cartographer”. This solved the century lasting dilemma of maps as instrument of power. Users could report information and thus maps have lost even the persuasive power to modify reality. At the same time made-to-measure users content could be generated, creating personal cartographies, publishing and sharing considerations and content.

THE MAPPED SPACE

As consequences of the running out of responsibility of these process and according to the possibility to use layering of information to return different kind of data – even users generated – enlarged the possible mapped materials.

“The mapped space under consideration ranges from information space (grasping patterns within vast quantities of data) to physical space (navigating the city, region or globe) to social space (representing relations within and between organization)”¹²⁸

In history there are several examples of “dissident cartography” collecting, and visualizing variable information. But now the descendant Debor¹²⁹ *Map of Paris*¹³⁰, instead of being a drawn manifesto of a subversive social movement, is – at least in common practices – an institutionalized way of gathering information.

The new maps allow users to visualize social space, and information space, thus

127 *Application Programming Interface (API)*, is the term to indicate the interface through which software communicate each other. Google launched the *Google Maps API* in 2005 to allow developers to include Google maps into their websites. The map, then could be included and site specific data could be overlaid. The result is the spreading of blog or website, that were asking to embed information on the maps, or generally as the digital base map is easy to have and could be layered with information with *JAVA*, and previously with *Adobe Flash*, this led to several projects or method of advertisements map based;

128 J. ABRAMS, P. HALL, *Else /Where: Mapping- new cartographies of networks and territories*, University of Minnesota design Institute, Minneapolis, 2006, p. 1;

129 G. E. DEBORD, was a French Marxist theorist, founder of a *Letterist Faction*, and founding member of the *Situationist International*. For the *Situationists*, the *dérive* is the primary technique for exploring an urban landscape's *psycho-geography*. Defined as the “specific effects of the geographical environment (whether consciously organized or not) on the emotions and behavior of individuals.” Considering the concept of *psycho-geography*, the *Situationists* draw a map of Paris, where perceived as different parts of the city were represented as fragments, with arrows suggesting the natural movements induced by the urban form;

130 G. DEBORD, *Psychogeographic guide of Paris*, 1955;

mapping invisible phenomena. Users have new information, before impossible to grasp that could affect their behaviour.

TRIANGULATION

At the same time, collecting space related information has never been that easy. A new broadening revolution was the introduction of the *GPS*.

The *GPS* not only changed our way to navigate and experience the space, but also allowed the use, together with the spreading of *RFID*¹³¹, wireless networks and mobile phones with location-based software, of *locative media*. This latter made the “work” of users-map-maker even easier. Mobile social networks and application, while providing services, create an huge quantity of information, embedded by coordinates, that once collected and visualized could give significant information about people use of the public space. Moreover *locative media projects* frequently ask people to map with their mobile phones, activities perception for a particular project purpose.

Even general information about traffic, light, economic transactions could be easier collected by sensors and the tracking systems of our society.

The possibility of returning dynamic images of the city as it is used and perceived by its citizens seems a simple reality: today contemporary computing systems can track everything in a city.

OVER TIME-EASY TO ACCESS

*“In contrast with the mutable digital map, every printed map is already out of date, as soon as it is published.”*¹³² Digital mapping on the contrary could be continuously updated and modified.

The digitalized maps, when they become web-application are even free to access, with our Internet connection and mobile, basically from anywhere.

131 *Radio Frequency Identification (RFI)*, is the use of a wireless, non contact frequency system that uses radio, frequency to transfer data from a tag attached to an object;

132 J. AMBRAMS, P. HALL, *Else /Where: Mapping- new cartographies of networks and territories*, University of Minnesota design Institute, Minneapolis, 2006, p. 1;

CONVERSATION WITH MAP

Under those premises the map (the final product) became secondary to the mapping process itself.

“If a map is a completed document, mapping refers to a process on-going, incomplete and of indeterminate mutable forms”¹³³

It is important to decide how to collect and visualize data, while the final product is customizable and modifiable. In this context in which basically everything could be mapped and made accessible new question arises:

Which kind of urban knowledge can we extract from the contributions that people spontaneously share every day while living and experiencing the city? Is it possible to provide a framework to help citizens, planners and decision makers at understanding which unsolved urban questions the nature of those data can, even partially, answer?

At the same time interactive mapping, could allow different uses of space, new shared used of it, becoming from a passive tool of investigating, an active tool of *solving problems* itself?

133 J. AMBRAMS, P. HALL, *Else /Where: Mapping- new cartographies of networks and territories*, University of Minnesota design Institute, Minneapolis, 2006, p. 1;

1.3.2 Maps: interpreting social networks data

The growing number of subscribers to social networks as well as the growing number of geo-located interactions observed on these latters has provided new opportunities for the collection, processing and returning of data through maps. The advantages in terms of time, involved actors and effectiveness of these tools are self-evident, but there are instances that should be taken into account. In primis, it must be clear what is the purpose of the research, what is intended to interpret from the collected information. It is also essential to understand the target of the research: the use of digital devices for access to social networks is very imbalanced and varies significantly depending on the country, the considered location and the segment of the population to be studied. Moreover, each social network has its own peculiarities that, if taken into account, allow partially estimating the expected results. Remains unresolved the ethical issue about the use of these data: though it is not an infringement of privacy laws, it remains to ask: when should the personal sphere of others be invaded for personal research purposes?

Reading the dynamics of an urban settlement has traditionally been a challenging endeavor, often requiring long hours of observation and interviews. This process has been extremely simplified thanks to the raise of new methodologies of data recollection and representation, vehicled by the diffusion of digital technologies.

As previously underlined the importance of maps has been a crescendo in the last two decades: sensing devices and spontaneous provided information fostered the principle of the city as an information generating system.

Particularly interesting is the chance offered by the collection, organi-

zation and interpretation of data coming from social networks, passively provided by users. Actually, they do not come from an explicit will to personally give a contribution in mapping a phenomenon; they are rather the result of a social interaction on a digital platform, implicitly containing data about the user itself and his location.

Therefore, A large number of individuals can be studied, without directly involving them in the research: whether the user expresses no restrictions in terms of privacy rights, this data can be easily obtained, gathered and visualized towards proper maps. There are clear advantages in the employ of so-obtained information, primarily because they are automatically produced, free and continuously updated.

Once again, the more delicate and relevant issue about mapping – especially in mainly computerized society – doesn't deal with the availability of data that are even in excess, but with the selection and interpretation criteria these are read through.

Three main features must be kept in mind:

- *The Goal.* It is necessary to clarify which is the purpose of the investigation. The research has to be finalized since the beginnings: data have to be considered as signifiers, the significance of which is attributed by the aim of the research at large.

In general terms, what it is here intended to underline and what has been experimented in this research, is the fact that social networks maps can help in comprehending two main factors:

- *The use of the space in the city.* Whether social media active population is usually present in that place, if they tend to come back, what is the part of the day when they tend to use the place;
 - *Discover new poles in the city.* Whether are places perceived as significant of a city, what are the places most talked about or that are most photographed.
- *The Target.* The main research question has to be “*Is the senseable portion of users significant to the terms of my research?*”

Geo-located data from social networks come from citizens equipped with a smartphone or another *GPS* device and, even if continuously growing, these people do not represent the most substantial portion of the population. This type of analysis, therefore, has to keep in account

the number of subjects is able to observe.

There are certain countries that record a higher number of smart-phones-equipped citizens and among these it has to be considered the percentage that uses a smartphone to access social networks sites. In a survey¹³⁴ conducted in December 2012 by the *Princeton Survey Research Associates International*, on a sample of about one thousand people for each country, it results that in US, for instance, the 51% of the interviewed people sustain to have a smartphone, and the 60% of those affirm to use it to interact through social networks¹³⁵. This state of fact changes if compared to the Italian results, where the number of people equipped with a smartphone drops to the 23% of the interview subjects, the 37% of which seems to use social networks via mobile¹³⁶. This means that in the United States three out of ten people use a smartphone to access social networks, while in Italy the ratio is much lower (0.85/10).

In general terms, the survey previously introduced states that in countries such as Britain, the United States, Russia, the Czech Republic and Spain, about half of all adults now use *Facebook* and similar websites¹³⁷. Nevertheless even in smartphone-intensive-use places, the incidence changes from area to area. For sure a research based on location services and applications will be more effective if applied on a metropolitan reality, where the quantity and use of smartphones and highly technological tools are pretty widespread.

Finally, it has to be taken in account that young people are considerably more engaged with cell phones than their elders.

“There are double-digit age gaps in most countries for all cell phone activities except making calls. For example, in 19 of the 21 countries surveyed, 18-29 year olds are at least 10 percentage points more likely than those age 50 or older to use their cell phone to access the internet. The biggest differences occur in

134 PEW RESEARCH CENTER, *Social Networking Popular Across Globe*, Global Attitude Project, December 12, 2012, via <http://www.pewglobal.org/2012/12/12/social-networking-popular-across-globe/>;

135 *ibidem*;

136 *ibidem*;

137 *ibidem*;

*China (+63 points), Japan (+62), Russia (+62) and Britain (+61)."*¹³⁸

In this sense a research founded on social networks traces can't be considered as an exhaustive cross-section of the urban reality, since it will be related to a proportion of the population with less than thirtyfive years.

Distinctive Traits. What has been observed is that every social network brings with it peculiar features, connected to the nature of the platform it self, to the type of sharable contents, to the main kind of user.

The main difference occurs between location-sharing applications, allowing users to continuously collect and share their current location – such as Foursquare, Facebook Places, Gowalla – and social media applications, whose aim is to let collect and share different kind of contents (pictures, video, comments) and eventually embed the current location of users – Facebook, Twitter, Instagram.

These latters, indeed, present a more implicit will to communicate a message about a place. Even if it's the user that each time is able to choose whether including or not his geographical position in the content he means to share, his location is not the chief focus of his social interaction: it's a sort of side effect. This circumstance is particularly meaningful, as these kind of digital footprints on the city can be considered as a more spontaneous pattern of the truly most attended places by smartphone-equipped dwellers: those are the real venues where people spend their urban lives and from which they socially interact.

A different speech regards the location-sharing applications (*LSAs*). Before the introduction of these devices, people used to aware about their location via phone cells and SMS; with *LSAs* there has been a shift in location sharing from previous approach using one-to-one sharing to collectively shared tracks.

"Past literature has shown that these micro-blogging sites are

138 PEW RESEARCH CENTER, *Social Networking Popular Across Globe*, Global Attitude Project, December 12, 2012, via <http://www.pewglobal.org/2012/12/12/social-networking-popular-across-globe/>

successful in part because they help users build up social capital within their network. We believe that this “social” factor has been under-utilized in past LSAs. Consider, for example, LSAs like Reno, WatchMe, and the Whereabouts Clock – these LSAs are all motivated by scenarios that emphasize a more utilitarian perspective of location sharing and focuses on activities like coordination and planning. These purposedriven LSAs are in distinct contrast from those that support location sharing within social networks like Foursquare, Loopt, BrightKite, and Lorcaccino. LSAs have motivating scenarios that emphasize the social aspects of location sharing, where users might announce their arrival at a location not because others need to know but because it is simply interesting or fun to do so.”¹³⁹

The research paper here reported underlines a relevant issue about location-sharing devices: they have an undeniable community value and they became popular once the social-driven purpose was embedded in their structures. These applications have to be seen as an apparatus aiming at creating social interactions among users, where the shared content is not a picture or a written message, is the declaration of the current location. Thus, information about venues becomes a tool to catch the attention in a one-to-many/one-to-all process and to boost self-representation. The places where people check-in using *Foursquare*, for instance, doesn't necessary embodies the places of the city where the users spend the most of their lives, but represent instead the spots and nodes they consider as most representatives and they mean to broadcast.

Briefly, it is enough fair to assert that the choice of the social networks to place under analysis is essential. Since it gives enough precise indications about the kind of response it is possible to obtain from each of them.

As a partial conclusion, the possibility offered by the analysis and restitution of social media footprints through new maps are attractive and enormously valu-

139 K. P. TANG, J. LIN, J. I. HONG, D. P. SIEWIOREK, N. SADEH, *Rethinking Location Sharing: Exploring the Implications of Social-Driven vs. Purpose-Driven Location Sharing*, Human-Computer Interaction Institute, Computer Science Department, Carnegie Mellon University, 2010, via <http://www.cs.cmu.edu/~jasonh/publications/ubicomp2010-socialsharing-final.pdf>,

able in taking an effective snapshot of the social dynamics steering an urban settlement. Especially in terms of required time, number of the subjects that it is possible to involve and opportunity to upload and intervene on the results in real-time, these new survey procedures have no previous: their efficiency is undeniable.

The question is rather if we are entitled to collect, organize and visualize – practically if we have the right *to use* – this data. The real goal of the search has to be kept in mind. Even if it is not illegal to employ information coming from social networks shared interactions, is it ethically correct to use someone else's personal habits for the purpose of another? Though the users have given consent not to make private their social interactions, are we sure they know what risks to privacy could encounter?

These kinds of data could be – or probably already are – used for trade or lucrative finalities. Aiming at understanding who the main users of a certain social networks are – what they think, where they go – and at influencing their dynamics for commercial reasons. Moreover, those data could be used to promote the speculation, deducting from the digital tracks which are the most visited and appreciated spots of a city and intervening changing the economic value of these.

On the other side, the aim of this social media-based researches could be the recollection of data to be visualized in a map, the finality of which is to make evident invisible social dynamics or poorly perceived informations at a traditional analysis. In this sense, the invasion of privacy may make sense, as the goal lies in providing an *open-data* tool, therefore accessible to all citizens, which raises awareness towards the issue of citizenship and that makes the inhabitant closer to the spaces of the city, enhancing the liveability of these latter.

We have already shown that displaying the results of the individual action activates in the dweller a raising mindfulness towards the common destiny of the city. Maps thus created have the capability to influence the behaviour of users once they are published and as a consequence the work, travel and social patterns of the urban people gradually change.

1.3.3 Maps: information and proactive tools for urban planning

The new maps led to a substantial change in redefining the goals of the operation of mapping. Maps are not just the direct tools that allow transparency and open data to promote awareness, empowerment of citizens on various issues and higher efficiency of the city system.

In fact, their implementation, involving groups of dwellers, can bring an immediate effect, increasing the sense of community towards certain places. For example, mapping can help to emphasize cultures and practices, also shared between strangers. Or rediscover unutilized spaces or forgotten collective memories.

Finally, we studied the possibility of expanding the resources for active citizenship and asked people to map data concerning certain environmental and pollutants factor through smart phones, promoting a raising responsibility and possibility of action on issues of wellbeing of the territory.

“[...] I believe another body of research should look at how maps are inevitably cultural constructs, not simply inert rational data banks, but active diagrams that extend a certain agency over how the world gets shaped. Artists and conceptualists are good at seeing maps in this way, not so much as informational devices, but as performance stages that can critically script certain spatial geographies in fresh ways.”¹⁴⁰

In general terms nowadays the *mapping* refers to two interfering activities:

140 J. CORNER, *Taking Measures Across the American Landscape*, Yale University Press, 2000, p. 112;

- The activity of people, providing new located data, with their mobiles or through different sensor (that require active or passive actions);
- The activity to collect data and, by visualizing them and making them visible. The digital map is made accessible to everybody via Internet and via mobile, with the possibility to connect anywhere and anytime.

In this broad terms it is clear that *mapping* is a powerful tool for urban planners, not only as a source of information, but even to promote and activate certain behaviour in the city, as to solve some problems in different ways. This is called *proactivity of maps*.

Considering the first meaning of the term *mapping* we can distinguish two different types.

*“either annotative— virtually tagging the world—or phenomenological— tracing the action of the subject in the world. Annotative projects, [...] generally seek to change the world by adding data to it. [...] while tracing-based locative media suggest that we can re-embody ourselves in the world. More typically, these projects resort to the map, using high technology to reproduce the famous diagram created for urban sociologist Paul-Henry Chombart de Lauwe to trace the daily movements of a young woman living the 16th arrondissement of Paris over the course of one year, a map of great importance to the Situationists.”*¹⁴¹

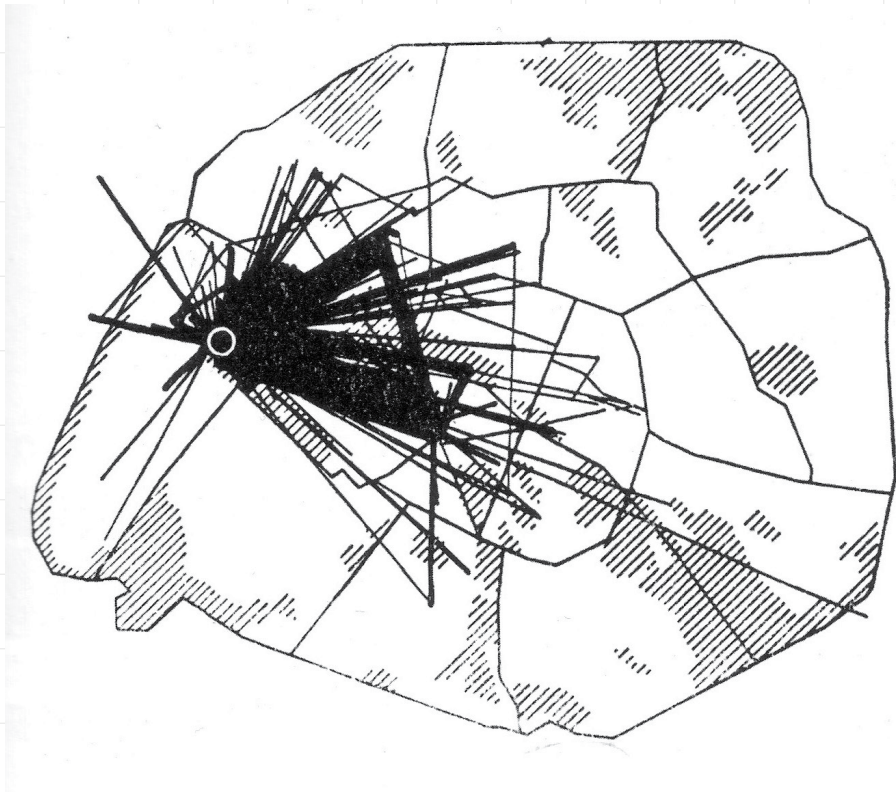
An example of the first type of map is the *Urban Tapestries*¹⁴², project by ProboScis: during a series of trials in 2004 and 2008, participants used mobile phones to annotate areas of London, thereby embedding social knowledge in the city landscape for others to discover. Such annotation or digital layers of collective memory may enable a process that Lily Shirvanee¹⁴³ calls ‘*social viscosity*’.

This could be considered as the first proactive effects of maps: through the use

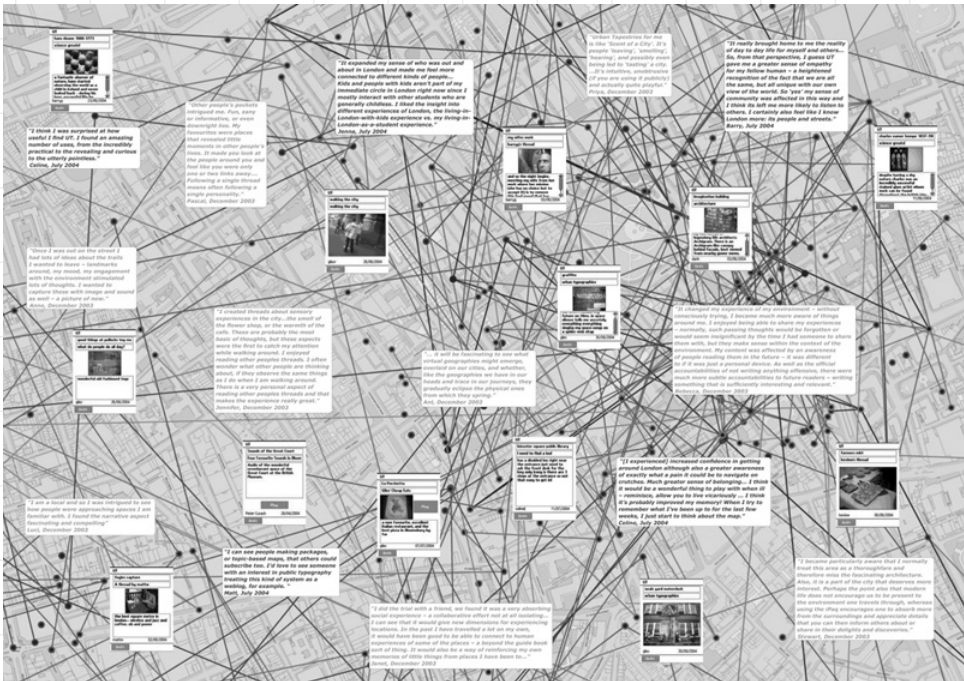
141 M. TUTERS, K. VARNELIS, *Beyond Locative Media: Giving Shape to the Internet of Things*, published on the web at <http://www.turbulence.org/blog/archives/003303.html>, p. 6;

142 *ProboScis*, Social Tapestries, 2004-08, London (<http://urbantapestries.net/weblog>);

143 L. SHIRVANEE is Doctoral Researcher at the University of Cambridge, England, where her current research is centered on novel material technologies for networked social interaction in public space. Prior to studying at Cambridge, she also received a Masters in Media Arts and Sciences from MIT’s Media Lab (MSci) as well as a Bachelors and a Masters in Architecture;



(figure 11) P.H.C. De Lauve Map of Paris, 1957



(figure 12) PROBOSICS, Urban Tapestries, 2004:2008ddd

of locative media, user might become aware of memories, of experiences or of other data that they wouldn't perceive without them. These tags might function as conversation pieces or symbols around which communities are formed, experienced and performed.

*“This viscosity of space is perceived as a bond that may exist not only between people with established relationships who can find each other ‘on the street’ in a mobile context, but also between strangers, thereby inspiring a new community and, possibly, creating the potential for a more democratized public space.”*¹⁴⁴

On the other side *phenomenological maps* asks cities to be tracked while experiencing the space, like the work of Christian Nold¹⁴⁵, *Crowd Compiler*¹⁴⁶, where the artist generates time-lapse images of crowds in public space, to understand the movement of all the individuals in one place over time simultaneously. Thus the perception, or the movements of people engaged in their everyday activities could be followed, in automatically collected information useful for urban planners and designers. Directly involving people, the act of mapping could generate collateral actions or goals:

*“Where annotative projects seek to demystify, tracing-based projects typically seek to use high technology to stimulate dying everyday practices such as walking or occupying public space.”*¹⁴⁷

Asking people to walk and discover or to trace their movement, could help in making them re-appreciate public spaces and rediscover practicing. The first proactive asset of mapping is then providing a frame in which people could rediscover under-used places or activity.

144 L. SHIRVANEE, *Locative Viscosity: Traces Of Social Histories In Public Space*, Leonardo Electronic Almanac, Vol. 14, No. 3, 2006;

145 C. NOLD, is an artist, designer and educator working to develop new participatory models and technologies for communal representation. Since graduating from the Royal College of Art in 2004, Nold has led many large scale participatory mapping projects. In particular his Bio Mapping project has been staged in sixteen different countries;

146 C. NOLD, *Crowd Compiler*, 2004-05;

147 M. TUTERS, K. VARNELIS, *Beyond Locative Media: Giving Shape to the Internet of Things*, published on the web at <http://www.turbulence.org/blog/archives/003303.html>, p. 5;

Another consideration is the empowerment of people, performed by the request of mapping. In “*Citizen science*”¹⁴⁸, Eric Paulos¹⁴⁹ shows that by repositioning individuals as producers and consumers of environmental common data, by sensor embedded in their mobile phone, a new citizen driven model of civic government can emerge.

*Our research positions citizens as the driving element for collecting, reporting, interpreting and collectively improving the health of our natural environment [...] by elevating everyday citizens into the role of data collector, commentator, and policy maker, we hope to directly empowering such individuals to act as change agents within their world.*¹⁵⁰

He coined the expression of *participatory urbanism* in the sense “*emerging ubiquitous urban and personal mobile technologies to enable citizens action by allowing open measuring, sharing, and remixing of elements of urban living asked by, requiring, or involving participation, especially affording the opportunity for individual citizens participation, sharing and voice. Participatory urbanism promotes new styles and methods for individual citizens to become proactive in their involvement with their city, neighbourhood, and urban self-reflexivity*”.¹⁵¹

The proactive effects of mapping are in this sense of engaging the public trust and then encouraging the co-management and the taking cares of public goods, giving citizens the opportunity to become change agents by information.¹⁵² Thus the operation of mapping is an active tool in sense of empowering, and creating the background in order to perform an active behaviour towards the management of common goods and places. An example of this

148 E. PAULO, *Citizens science* in M. Foth, *Handbook of research on urban informatics : the practice and promise of the real-time city*, Hershey, New York, 2009;

149 E. PAULO is an American computer scientist, media artist, and inventor, best known for his early work on internet robotic tele-operation and is considered a founder of the field of Urban Computing. His current work is in the area of citizen science, energy materiality, DIY Biology, DIY culture, micro-volunteerism, and the cultural critique of such technologies through New Media strategies;

150 E. PAULO, *Citizens science* in M. Foth, *Handbook of research on urban informatics : the practice and promise of the real-time city*, Hershey, New York, 2009, p.417;

151 *ibidem*, p.420;

152 *ibidem*, p.418;

exercise is the mapping activity performed by José Gómez-Márquez¹⁵³, to let people measure the water composition, pH, and pollution in Berlin. The little toolkit called *Kleiner Wassersensor* (the *Little Water Sensor*) is a *DIY* water testing, currently being distributed to people all over Berlin. The test is incredibly simple: the user is provided with five pieces of litmus-like paper, which measure various aspects of water. The card has to be immersed in some sort of water, from a natural body of water in the city, from the Spree or Müggelsee, to the water coming out of a shower. The user waits a minute to let the magic paper do its *color-changing thing*, and then snaps a photo of the card using a smartphone, embedded with localization information.

The act of mapping, thus, let people understands, usual invisible data, affecting our life in the city, such as the level of pollution of water. By collecting data, and realizing the crowd-sourced map, they could, then develop a more aware and responsible acting toward consume and the use of water.

The proactive effects of the mapping are present even in the moment they passes through the second meaning of mapping: collection of data and publication of an easy to understand visualization.

In fact the resulting product is generally later displayed at a gallery or on a web site. In the moment it enters the web the effects are huge.

*“Paid or free, localized information is now continuously accessible via digital cartography on personal computers, mobile phones or GPS receivers supplying simultaneously a large number of people with a highly precise territory view”*¹⁵⁴

Publishing and making maps available, create their proactive power. In particular cybernetics theory is based on the concept of *feedback*:

“Feedback is a method of controlling a system by reinserting into it the results of its past performance. If these results are merely used as numerical data for the criticism of the system and its regulation, we have the simple feedback of the control engineers. If, however, the information which proceeds backwards from the performance is able to change the general method and

153 J. GÓMEZ-MÁRQUEZ, is the program director for the *Innovations in International Health (IiH)* initiative at the *Massachusetts Institute of Technology (MIT)* and cofounder of *LDTC+Labs*, a design and strategy consultancy for international development technology;

154 M. TUTERS, K. VARNELIS, *Beyond Locative Media: Giving Shape to the Internet of Things*, published on the web, <http://www.turbulence.org/blog/archives/003303.html>, p. 6;



(figure 13) J. GÓMEZ-MÁRQUEZ, Kleiner Wassersensor, 2012 - tester



(figure 14) J. GÓMEZ-MÁRQUEZ, Kleiner Wassersensor, 2012 - map

patterns of perform, we have a process which may well be called learning."¹⁵⁵

If we consider then the city as a system, made up of built environment, nature, people and events feeding back the information to the system causes a *feedback loop*. The system then acts more efficiently and new relationships are discovered causing new data that immediately re-enter in the stream.

When the data about people, events and use of space are collected and then given back by maps, those generate an alteration in these variables as a feedback adaptation. Clearly this is not a linear process, as it would happen in an idiotypic situation, but similar transformations have been studied, as to create a framework to relay when implementing those actions in new environments.

Thus focusing on how to improve the public realm using digital devices, it is necessary to empathize on what have been called in recent years *Living Maps*, understanding what the proactive actions of maps are, and how these can generate new codes of experiencing the space of the city.

155 N. WIENER, *The Human Use of Human Beings*, London: Sphere Books, 1968, p. 56;

1.3.4 Living maps: navigating the urban space in a scattered way

The maps that more focus the goals of our research, and whose effects need to be studied, are the living maps: maps that overlap spatial information to data about people, activities and events. The living maps are available in real time and their consultation is able to influence the movements and the use of the spaces of the city, creating what in cybernetic is defined as feedback loop, a system (the use of space in the city) that nonlinearly evolves as to ensure the continuous reintegration of data. In particular, some living maps and application available on the market allow the user to view locations and events of friends, and to “discover” the city using the results of some algorithms that suggest places and activities preferred by other users with similar interests and profiles.

What is emerging, through the use of new maps, which trace wires and invisible connections between places disconnected but associated to the user, an interest-oriented movement within areas of the city.

The risk is that these practices might encourage or induce social segregation, with the spatialization of virtual networks in the cluster. Or more simply as the first studied possibility of using the living maps to strengthen the sense of the common good and appropriation between communities is not reformulating in identifying local communities, but communities of interest, favoring the creation of sub-urban cultures. The point of arrival is still uncertain, the only safety is an invitation not to leave the living map to free trade but to study them and understand them in order to address the effects that those have on the use of the space.

“Living map is a contemporary merger between a classical digital territory map and a dynamic localized flows representation producing a new kind of visual information where

places, people, activities, and time are mixed together."¹⁵⁶

What are the interaction that could be established between living maps and people?

In first place we have to consider how living maps could be accessible on locate mobile, providing real time information. Once put into the hands of the user, "*living maps are not only a useful way to domesticate space but also a potentially real-time information engine to see where and what kind of activity is going on.*"¹⁵⁷

There are three different types of living maps. The first type provides *mass data* and is similar to the dynamic chart of rooms control, with the difference that they have an user-friendly interface easy to understand. This map monitors large range of spatial phenomena: Internet communications, traffic, people use of social network in the city. An example of this map is the 2006 *SenseAble City Lab*¹⁵⁸ *Real Time Rome*¹⁵⁹ project that reports aggregated localized data of the use of cell phone in Rome, providing interesting portraits of the city dynamics.

The second types are *tribe maps*, representing hot spot or flow of people with the same features or taste. These types of maps show similar spatial behaviour of social clusters. For example *Accurat*¹⁶⁰ made an interesting experiment in Milan, mapping the language of tweet, with the *Maps of Babel*¹⁶¹ and then showing movement and spatial distribution of major ethnic groups.

The third type of map, just show *friends' geo-location*, usually using proximity as a search engine. Those kinds of maps show where acquaintances or people with similar taste are in real time, and create the possibility to reach them, generating a *technological serendipity*.

156 C. AGUITTON, D. CARDON, Z. SMOREDA, *Living Maps: New data, new uses, new problems*, Orange Lab, Paris, 2009;

157 Op cit. p. 1;

158 *SenseAble City Lab* is a research lab that operates within the MIT (Massachusetts Institute of Technology, lead by the engineer and architect Carlo Ratti. The research focuses on the analysis of localized data in the city;

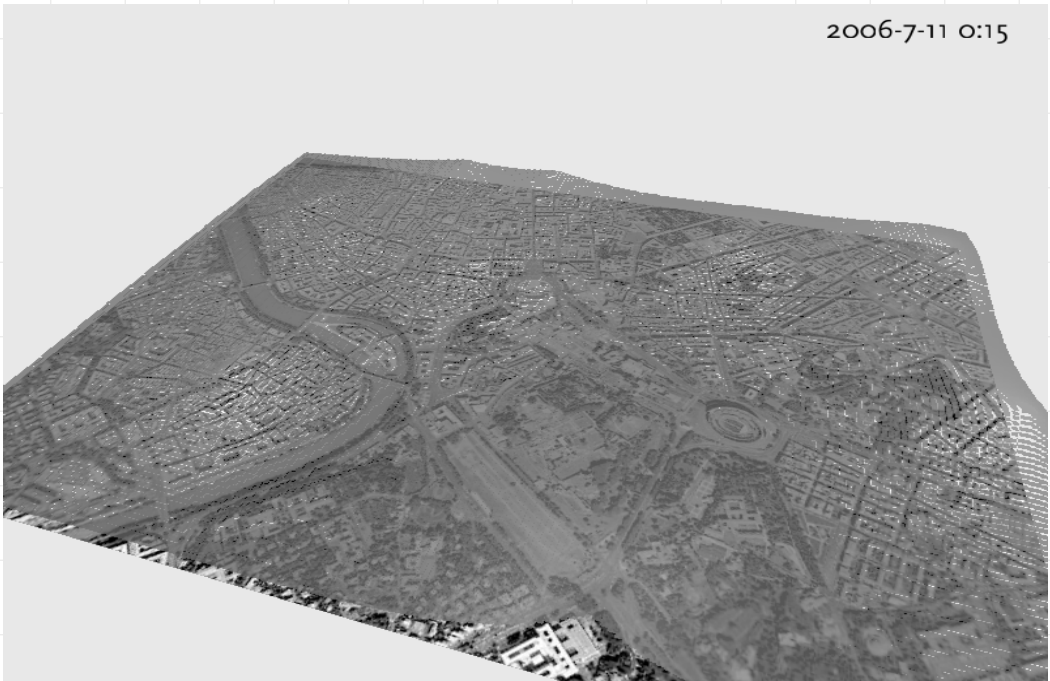
159 *SenseAble city lab*, Telecom, Real Time Rome, 2006 (<http://senseable.mit.edu/real-timerome/>);

160 *Accurat*. is an agency and consultancy, that operates in Milan. They interoperate among information, people and context;

161 P. PATELLI, L. SIMEONI, S. IACONESI, *Maps of Babel*, Milan, 2011;



(figure 15) SENSEABLECITY LAB, Real Time Rome, 2006 - time 1



(figure 16) SENSEABLECITY LAB, Real Time Rome, 2006 - time 2

Except from the well know *Foursquare*¹⁶², another example is *Spot Me*¹⁶³: an application to provide to participants of conferences a tool to discover people sharing the same interest around them.

Moreover, *Real Time Copenhagen*¹⁶⁴, made by *SenseAble City Lab*, was a map available on Smart Phones, during the *Copenhagen's Kulturnatten (Culture Night)*. The micro dynamics of the city were captured in a screen that showed events and overlaying of people movements, or at least people mobile phones activities (including calls, text messages) during the night. Meanwhile the tracking of volunteers through *GPS* provided a more personal glimpse on the individual movement traces that were created, giving the possibility to follow interesting or “cool” people.

The rise of living maps and the access to utilities information suggested several changes in the articulation of space and time in our society. People tend to use them in a *reflexive way*, changing their pattern of movement. Data provided chance the movements of people in space, and those movements re-enter the system as data.

If the data re-introduced in the system are about collective activities, the shared meaning of places could be affected, creating, as mentioned before, the concept of *social viscosity*, which is:

*“The nature of viscosities of flow that are projected from and implied by collective activities there. When information can actively find you on the street, there is a viscosity of space that forms between strangers with locative media, creating landscapes charged with traces of others that have inhabited the same space.”*¹⁶⁵

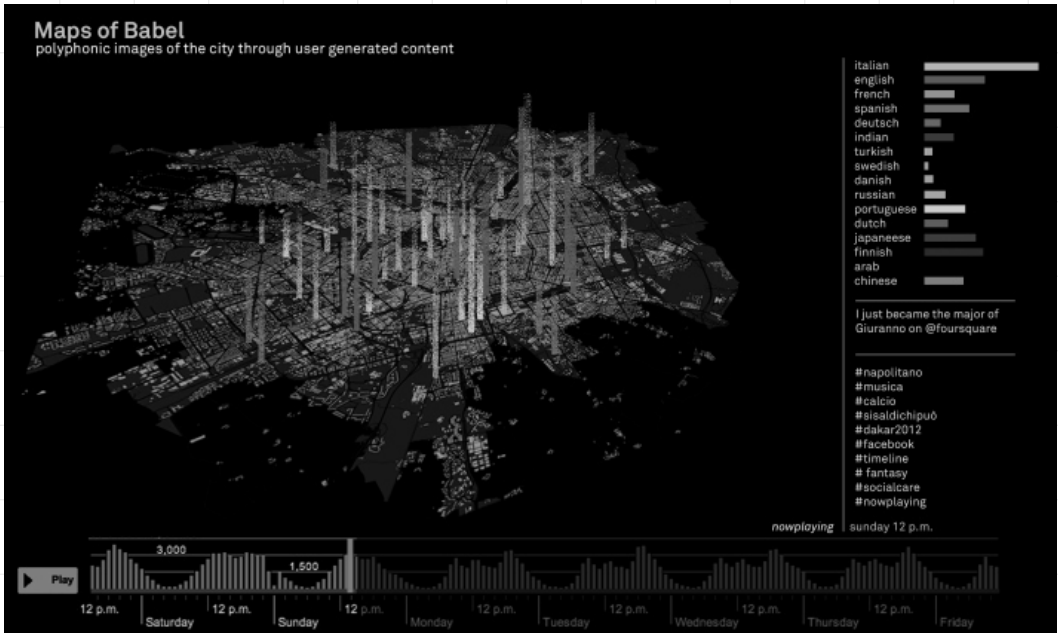
The shared information are then common meanings of a places, that, once mapped, reveals new bonds and creates sense of communities. Locative media are potential positive forces that enables citizens to name and claim their own

162 — *Foursquare*, is a location-based social networking website for mobile devices. Users “check in” at venues, selecting from a list of places the application recognizes nearby. Each check-in awards the user points and sometimes badges;

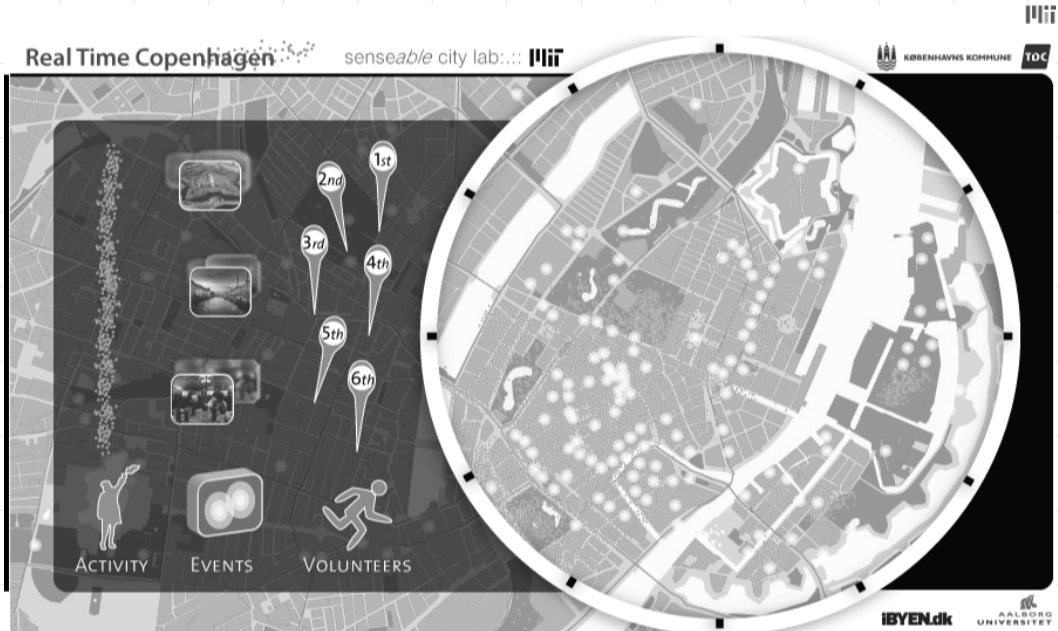
163 — <http://www.spotme.com>;

164 — *SenseAble City Lab*, Real time Copenhagen, 2008 (<http://senseable.mit.edu/real-timecopenhagen>);

165 — L. SHIRVANEE, *Locative Viscosity: Traces Of Social Histories In Public Space*, Leonardo Electronic Almanac, Vol. 14, No. 3, 2006, p.4;



(figure 17) ACCURAT, Mpo of Babel, 2012



(figure 18) SENSEABLECITY LAB, Real Time Copenhagen, 2008



spaces, and by sharing them with the living map, make them common and empower the common sense above places.

These new connections with strangers are opposite to other behaviours that living maps introduces on the users. In fact, located information will provide users trustworthy information about what is going on in the city and facilitate choices about where to go or how to navigate in the urban space. This knowledge will be distributed potentially to every person and it could become a part of a collective decision making. It can develop in an important factor of the collective action but also an element reinforcing the existing spatial structures of the city.

Considering for example the third type of map, showing *friends' geo-location*, there is the trend to propose trust-or-interest based discovery of spaces. This phenomena is called by Martin de Waal¹⁶⁶ *Long Tail Urbanism*¹⁶⁷.

The Long Tail-theory claims that in the digital universe, new ways are emerging to introduce customers to a wider variety of content. This is done by analysing the media use of a user and comparing it with that of others. A special algorithm then recommends new products. (Buyers of this book also bought...Your friends are listening to ...). In the new media industry this principle is sometimes called 'discovery'. While 'search' is about helping people finding what they are looking for, 'discovery' guides them to products or places they didn't know they were looking for. Mobile phone and navigation companies are right now in the process of experimenting with such discovery services. Rather than new books or CDs to buy, these services help you 'discover' unknown places in the city, or set you up with people you might like to meet. For instance, the American service Dodgeball can recommend you friends-offriends that have reported to be on a specific location near you in the city¹⁶⁸.

166 M. DE WAAL, is one of the founders of DeNieuweReporter.nl, one of the leading Dutch blogs about the future of journalism. Together with Michiel de Lange he took the initiative to TheMobileCity.nl, a weblog, series of conferences and research platform on the role of digital and mobile media in urban design. In 2011 he was guest researcher at the Centre for Future Civic Media at MIT in Cambridge, MA.

167 M. DE WAAL, *From BLVD Urbanism towards MSN Urban*, entry posted on December 22, 2008, via <http://www.martijndewaal.nl/>, p. 10;

168 Ivi;

The Long Tail, thus changes the way people interact with the city: virtual links among people with the same interest, once localized, could be organized in space in *interest-and-taste* cluster.

*“The urban space is socially segregated, due to the social mechanism and to the tendency of individuals to associate and bond with similar others. The spatial distribution of people, not only about the places they live but even the entertainment places, is obviously shaped by this mechanism. A real-time display of social occupancy of the city can reinforce the classic spatial segregation if this display attracts similar people to specific places.”*¹⁶⁹

According to de Waals, the combination of the first attitude – the social viscosity – and the second one – the interests-spatial segregation – could be summarized by the theory of Claude Fischer¹⁷⁰.

In his 1975 article *Towards a subcultural theory of urbanism*¹⁷¹, Fischer writes it is likely that in large cities different subcultures will emerge.

*“The density of cities accumulates critical masses of individuals with particular lifestyles who will be able to meet up to perform their particular subcultural lifestyle.”*¹⁷²

The findings of Anthony Townsend¹⁷³ three decades later provide an idea of

169 G. AGUITTON, D. CARDON, Z. SMOREDA, *Living Maps: New data, new uses, new problems*, Orange Lab, Paris, 2009;

170 C. S. FISCHER (born January 9, 1948), is an American socialist and Professor of Sociology at the *University of California Berkley*. He has taught undergraduate and graduate courses in urban sociology, research methods, and American society;

171 C. FISHER, *Towards a subcultural theory of urbanism*, The university of Chicago, 1975;

172 ibidem, via M. DE WAAL, *From BLVD Urbanism towards MSN Urban*, entry posted on December 22, 2008, via <http://www.martijndewaal.nl/>, p. 11;

173 A. M. TOWNSEND, is an American researcher. Townsend specializes in research on the implications of technology on cities and public institutions. Currently Townsend is the director of research and Director of Technology at the Institute of Future in Palo Alto, California, a think tank established in 1968 to help companies plan for the long term future. His interests span numerous topics including; mobility and urbanization, innovation systems and innovation strategy, science and technology parks and economic development, and sustainability and telework;

how the mobile phone might have a similar effect. The mobile phone may lead to what he calls a speeding up of the *urban metabolism*. The mobile phone enables people to form their own decentralized networks, and to perform these spatially.¹⁷⁴ In other words, mobile phones, social networks and geo-annotation might lead to strengthen subcultures and connect individuals with the like-minded.

Then the question that might arise is how information-driven-movements compete with real proximity. Informed people tend to have interest driven movements. This could help in creating new way of connecting spaces, and this is a possibility that will be studied and discussed afterwards, but then maybe the risk is that the next people patterns of movements, will move up and down in the city, following their friends location, in a stalker's wise attitude, totally indifferent towards the city forms.

The old way of walking down the street and discover new places will be then replaced by people walking while looking at their phones, trying to reach disconnected and isolated places in cities.

Living maps are quite a new phenomena, their real effect on people movement and pattern in the cities are still unknown. If it is toward a more subcultural spatial segregation, or towards the bonding of collective actions. If discovery will be based on spatial proximity or on interest-driven movements. It is necessary in any case not to leave the design of those maps and applications to the market, but try to control and use them as a resource for urban planning and design in the city, as the called *Architecture of Information*¹⁷⁵ could deeply influence the real one.

174 A. Townsend, Life in the real: mobile telephones and urban metabolism, Journal of Urban Technology. (7)2:85-104, 2000;

175 The term was coined by R. S. Wurman in the book *Information Architects*, Graphis Press, 1997;

1.4

Digital technologies oriented urbanism

1.4.1 Networked Urbanism

Considering the city with an information based lecture could work in the moment we reasons in terms of nodes and connections (network), where the nodes are public-semi public spaces considered as the core of public human activities, and the connection are both the physical and virtual ones, that assure the exchange among the nodes. Considering the invisible infrastructure as connections could help in framing a strategy to reactivate diffusely the public realm of an historical city centre.

New functions and activities could be introduces diffusely, in new nodes of the urban fabric, assuring the interconnections and contamination among the different activities proposed, through a set of invisible infrastructure: social data-base exchanged among the places and audio-video streaming. Then the focus is about the possible gateways, points of contact between virtual and physical reality and the design of the infrastructure itself, that should not only connect each new node, but even anchor them to major nodes of the city social life.

If *invisible infrastructure* is now affecting the materiality of the space what is a design that take into consideration the possibilities of communication technology? How could we think to intervene in the built form considering the influences of those invisible forces? What is the point of contact between the two realities? It is quite a difficult question to answer back.

“We are still more familiar with physical space than with virtual space, both as users and as practitioners of urban planning. Physical space is the material object of urban planning. It comprises, traditionally, zones adapted to certain human activities and channels of communication connecting them and cater-

*ing to transport. Virtual space, on the other hand, is less familiar.”*¹⁷⁶

According to Salingaros¹⁷⁷ the *Network Urbanism* is a way of thinking about cities, according to which cities should be understood by the flow of information, not just by their physical form. He introduced the concept of the *urban web*, or *network*:

*“the urban web consists of activity nodes and connections”*¹⁷⁸.

According to Salingaros an information-based lecture of the city is the one that reasons in terms of nodes and connections; the *nodes* are places where a collective activity is performed.

“A node can be anything that attracts people, and shared activities, like a hot-dog stand, shaded benches, a public building”.¹⁷⁹

Whereas the connections indicate both physical and digital technologies infrastructure that let people communicate. The network has to be studied in order to be redundant: two nodes should be connected in different ways.

*“Information flow can for example be a person moving from one place to another, or the conversation between two people (either face to face or for instance through an email) [...] within this more process-minded approach new goals can be formulated. For example, minimizing the overall cost of information exchange in a city should be one of the main goals during the design or planning process.”*¹⁸⁰

Considering a network based strategy in an historic city centre, is particularly relevant, as the physical connections are generally well functioning, assuring the physical accessibility and the physical information among the “nodes of

176 P. DREWE, *Toward a network-oriented, ICT-based urban planning*, published on the web via <http://www.drewe.nl/pdf/Toward%20a%20network.pdf>;

177 A. SALINGEROS, is a mathematician known for his work on urban theory, architectural theory, complexity theory, and design philosophy. He teaches mathematics, and is professor of Mathematics at the University of Texas San Antonio. He is also on the Architecture faculties of universities in Italy, Mexico and the Netherlands;

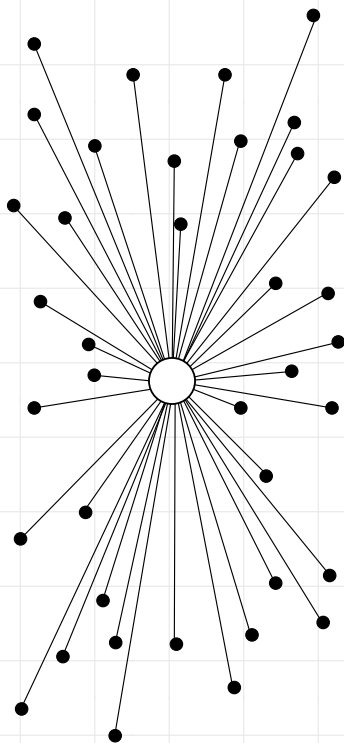
178 A. SALINGEROS *Theory of the Urban Web in Principles of Urban structure*, Techne, Delft, 2005, p. 15;

179 ivi;

180 A. SALINGEROS *The information Architecture of Cities in Principles of Urban structure*, Techne, Delft, 2005, pp.169-172;

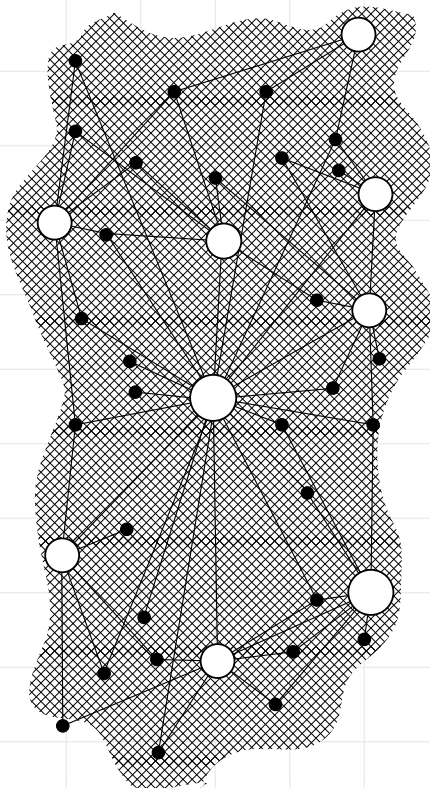
urban network_ the evolution

from a **MOCENTRIC**
STRUCTURE



past

to a **POLYCENTRIC**
STRUCTURE



future

(figure 19) past and future network structure

urban activities”.

But the network of public life in a historic centre could be focused in just one node of human activities showing relevant under-used public areas.

Considering digital technologies as part of connections enable to imagine different shapes of the networks.¹⁸¹:

*“The shape of cities is moving towards a polycentric or multi-centered form which functions as a whole. Moreover, the concept of public space is extended, catering to physical as well as virtual interactions.”*¹⁸²

City centres tend to show more than one node, different points could work simultaneously and the synergies and the collaboration among the points are assured by the presence of the invisible infrastructure.

Considering an historical city centre, it is possible then to frame a strategy to reactivate underused public spaces diffusely, through nodes simultaneously connected one to the other.

To understand the potential of this kind of action it is important to analyze well the two key concepts of this definition.

On the one hand the concept of polycentric based on a multitude of nodes that are diffuse in the urban fabric. On the other hand the possibility to create synergies and unexpected activities generated by interferences among different nodes, so that the result is not only the sum of the parts but something unexpected, new.

The first concept of diffuse is not a new idea of urban planning. In fact Jaime Lerner¹⁸³ postulated the principles of *Acopuntura Urbana*¹⁸⁴ that was wishing for a renewal of the public life inside the city centre of a city through some punctual intervention that could spread their power into the surrounding area.

181 — G. DUPUY, born in 1941, is a French university. He is known for his work on the networks of transportation and communication in relation to urban and regional planning;

182 — P. DREWE, *Toward a network-oriented, ICT-based urban planning*, published on the web via <http://www.drewe.nl/pdf/Toward%20a%20network.pdf>;

183 — J. LERNER (born December 17, 1937) was governor of the state of Paraná, in southern Brazil. He is renowned as an architect and urban planner, having been mayor of Curitiba, capital of Paraná, three times (1971–75, 1979–84 and 1989–92);

184 — J. LERNER, *Acopuntura Urbana*, Editora Record, 2003;

Thus the punctual interventions were about some new functions, temporal structures that enhance latent activities.

“Cuando un lugar está vacío, tiene que llenarse inmediatamente, preferiblemente con alguna actividad de animación. E incluso instalando estructuras provisionales para consolidar algunas actividades hasta que surjan nuevos proyectos. Es la acupuntura de la creación de nuevas estructuras mediante la instalación de estructuras portátiles que se puedan colocar en un lugar para garantizar vida, para revitalizar una región, generando así la función urbana que falta. Si falta actividad. Si faltan lugares de ocio nocturno, se monta una estructura de ocio. Si, por otro lado, faltan residencias, se traen residencias. Pero todo eso rápidamente, casi instantáneamente.”¹⁸⁵

The idea is then that the intervention generates reaction from the city, like a kind of living organism.

“Del mismo modo en que la medicina necesita la interacción entre el médico y el paciente, en el urbanismo también es necesario hacer que la ciudad reaccione. Tocar un área de tal modo que pueda ayudar a curar, mejorar, crear reacciones positivas y en cadena. Es necesario intervenir para revitalizar, hacer que el organismo trabaje de otro modo. [...]”¹⁸⁶

The principle is then to act diffuse in small intervention and to let the city react.

What it is missing in *acopuntura* is that if the scale of intervention is not big, or with big impact on the city, the city will react causing its failure. Those material and immaterial intervention that Jamie wished could be totally disconnected from the rest of public life and could die in short time.

There have been several examples of planned from the above creative district that couldn't survive, because of the distance and the lack of interaction with the human activities nodes.

The second concept of exchange and unexpected activities has been solved by urban design and architects through *density*.

In fact the unexpected activities coming from random social collision were one of the main aspects envied to the traditional European city: concentrating the majority of functions in a dense city centre and inside it in a major core that

185 J. LERNER, *Acopuntura Urbana*, Editora Record, 2003, p.5;

186 ivi;

assured the exchange among different type of users and functions.

In the last century this process was studied and brought, again enhancing the density, to an architectural level.

With totally different aims, the '70s *social condenser* and the modern *hybrids* try to propose, in a architectural scale those types of synergies among people, putting at the basis of the architectural concept the different uses and the spaces of interactions and exchange among them.

In the publication *Content*, Rem Koolhaas¹⁸⁷ defines a social condenser as

*“The programmatic layering upon vacant terrain to encourage dynamic coexistence of activities and to generate through their interference, unprecedented events.”*¹⁸⁸

But nowadays density can no longer be the sole answer for potential exchange and synergies among different functions if it is not connected with the accessibility intended in a wide sense.

*“Density, for example, can no longer be used as an indicator of potential exchange unless combined with accessibility (taking into account different speeds, from pedestrians to electrons, and different kinds of transport, i.e. passengers, goods and information).”*¹⁸⁹

Congestion and density are still working but there is a high competition coming from the virtual world. A social event, in the middle of nothing just because it is published on a Facebook friend's pages, attracts millions of city-users. District and area of cities that abruptly starts to have a lively public life just because being advertised by bloggers. An easy to understand example of the power of virtual community to bring life in the city, a kind of life that seems totally not influenced by the programming and the form that the city suggests are flash mobs. People decide to gather in selected place and to perform a

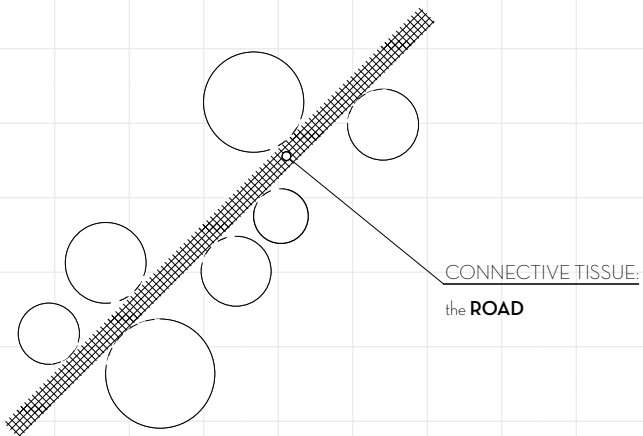
187 R. KOOLHAAS, is a Dutch architect, architectural theorist, urbanist and Professor in Practice of Architecture and Urban Design at the Graduate School of Design at Harvard University. Koolhaas studied at the Architectural Association School of Architecture in London and at Cornell University in Ithaca, New York. Koolhaas is the founding partner of OMA, and of its research-oriented counterpart AMO, currently based in Rotterdam, Netherlands. In 2005 he co-founded Volume Magazine together with Mark Wigley and Ole Bouman;

188 R. KOOLHAAS, *Content*, Tashen, Loin, 2004;

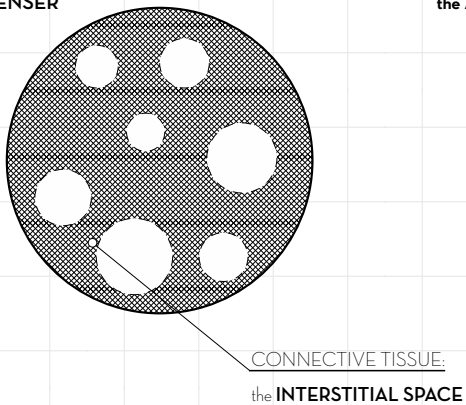
189 P. DREWE, *Toward a network-oriented, ICT-based urban planning*, published on the web via <http://www.drewe.nl/pdf/Toward%20a%20network.pdf>, p.9;

diffused condenser_the evolution

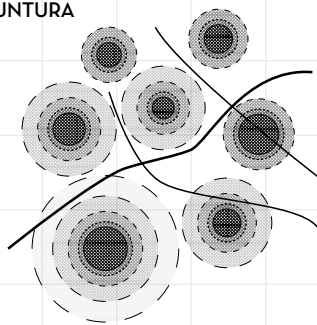
the URBAN AXE



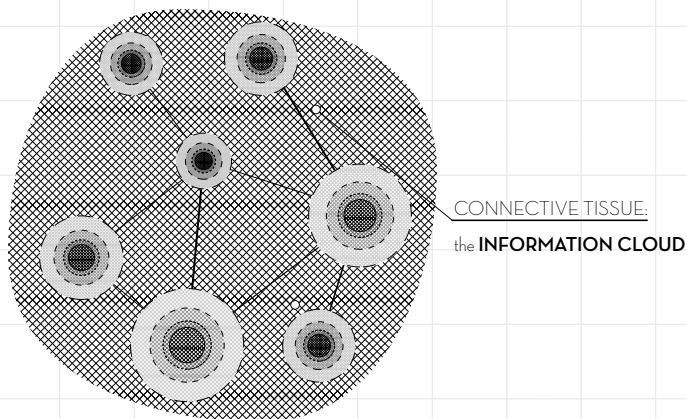
the CONDENSER



the ACOPUNTURA



the DIFFUSED CONDENSER



(figure 20) diffused condenser - the evolution

common activity. Could urban design support those types of operations or is it going to continuing being practiced in a total indifferent way towards them?

The proposal is then to create a mulycentric strategy to reactivate scattered public spaces in the urban fabric. As said by the *acupuntura urbana*, those intervention will spread their new social life in the surrounding areas, introducing new activities, in order to enhance the public life in the public spaces. And at the same time the advantage of density (accessibility and un-expected uses coming from contaminations of different functions) will be assures by the invisible infrastructure.

It is important then to define what it is the invisible infrastructure and what are the major points of it that need to be studied and controlled by urban designers.

As previously explained, the digital infrastructure network implies not only the wireless connection but even the possibility to create interactions and synergies among people, people and places, people and their use of heavy infrastructure, through a constant flow of information. The digital technologies connections are then, made up of a constant exchange of information among people, people and places, people and localized services and activities.

Generally we could say that to introduce a service or a use in the city it is not enough to plan a building to host the function but to create database and digital information to deliver the service though telecommunication. According to Mitchell concept of Recombinant architecture, a museum has to have a data base of the piece of art (a virtual gallery), an atelier has to have its digitalysed portfolio, a hospital stet the possibility for telemedicine, and so on .

In our specific case, enhancing the public social life in underused public spaces, the information could be about events and social life in a place. This information could travel in the invisible infrastructure through two different ways:

- *Audio video Connection* that virtually re-propose in one place the social life happening in another
- *Data Set*, that collects actively poured in information about events, or collected data coming from social networks.

There are some major aspects of the invisible connections that need to be

studied¹⁹⁰:

- *Gateway*¹⁹¹: the interface between virtual networks and physical space;
- *Preferential attachment*: new nodes to an existing network preferably link to well-connected nodes;

The interface that gives that information back to people – that we called *gateway* – is the first point. Considering the adhesion as a major problem in network oriented urban design creates an interesting virtual and material scale of action. Somehow urban issues are solved in a total immaterial way, creating invisible connections and dataset. And the only material operation is how and where to give back that information bringing it to an urban furniture or web design scale.

How could information reach people moving in the space of the city nowadays?

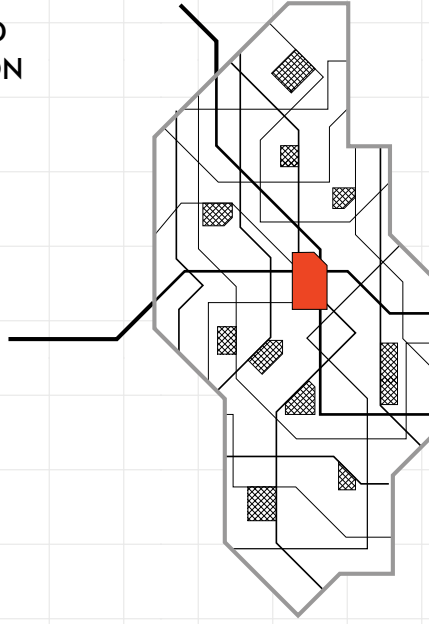
- The most plausible solution would be to give back any kind of information to anyone, everywhere. This hypothesis, which once expressed in words might seem to have almost divine connotations, is the practice at the time. Updated maps in real time, are available at any time to any owner of a smart phone. But there are some contraindications against this type of *adhesion*. In fact there is no doubt there are some information that it is worth returning to certain places. For example a system that connects all public transportations, informing people in real time about the location of public transports and how much they are crowded; this information should be available through an application for smart phones, but, it would be useful to display it on the screen next to a tram stop or the metro station, for two main reasons: in first place to make sure that even people not yet smart phone equipped could make use of it; in the second place because it is more likely that people in that specific moment, while at the stop are in need of such information. In particular, today, besides the possibility of having any information at any location via smart phones, named as *infocloud*, there

190 G. DUPUY *The automobile system: a territorial adapter*. in G. DUPUY, *Urban networks – network urbanism*, Amsterdam: Techne Press, pp. 121-137

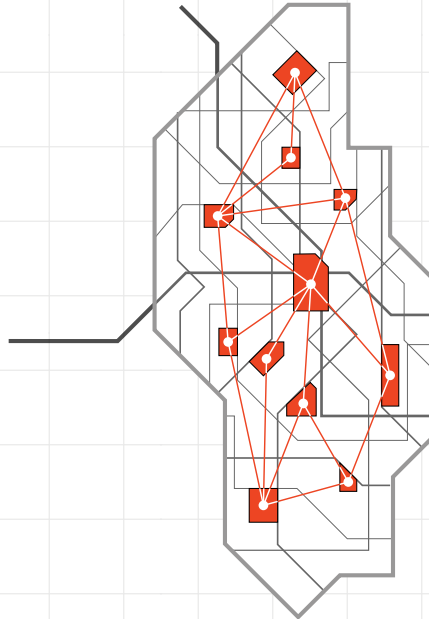
191 J. FIRMINIO, S. GRAHAM, *Typology for virtual cities: the interplay between physical and virtual urban spaces*. paper presented at the Conference “EDA 2001 –European Digital Architect”, Prague 2001

urban network_the strategy

from a **ROAD
INFLUENCED
DISTRIBUTION**
of **NODES**



to a **POLYCENTRIC
DIFFUSED
CONDENSER**



(figure 21) urban network - the strategy

are other ways to give back locally some information.

- Always using mobile devices, but by other telecommunication channels, so it is not the user who search the statues, but it is the information (text, sound, video, image) that comes in pop-up to the user when is near specified places. For example *NFCs* is one system that using radio frequencies gives information in a short distance, so that specific information comes in specific places.
- The other possibilities are screens or interactive screens. Screens are somehow a virtual extension of a common activity, as big screen let different people to consume the same content contemporary. At the same time they extend the gateway to the virtual world even to people not endowed with smart phones.
- The last possibility is creating a piece of urban design that performs and interacts in a specific way, responding to some inputs coming from data set. For example some benches that lights up if they know that inside a building there is some sort of event going on. In this way the outside public space is connected through an invisible infrastructure to the inside, creating a sign that tells people about another place. This possibility, as screens, let the users engage in a common activity while consuming the information and enlarge the possible information consumers, not bounding them just to smart phone equipped.

The second point of Dupuy is preferential attachment: it deals with the design of the invisible infrastructure. In fact not only the point has to be connected one to the other to assure the contamination of uses, but their existence and activities should be visible in major points of public life inside the city centre. Somehow this is an extension of the usual words of urban design contingency and accessibility: contingency expanded to the virtual world means that two activities and places don't just have to be close in order to create synergies but have to exchange information. And the expanded concept of accessibility is that one place doesn't just have to be accessible by pedestrian or public transportation but its existence has to be advertised, through information, in in major nodes, both real and virtual.

1.4.2 Network oriented design

There are new uses observed by urban sociologists of the public spaces, which could be enhanced by a technological oriented design. A design that considers the possibility to find the equipment necessary to work everywhere, with mobile devices, to visualize common media contents, that incorporate elements fostering interactivity and shared urban narratives.

There are new uses of the public spaces observed by urban sociologists, which could be enhanced by a technological oriented design. A design that considers the possibility to find the equipment necessary to perform common activities boosted in public action thanks to the spreading of digital technologies. It has been studied as new uses of the public spaces are spreading with the use of digital technologies.

Some scholars argue that till now the phones, and the laptop create a bubble of privacy around the user, a private shield around him that discourages collective actions in the public field.

“One of the primary functions of mobile media that is carried in public and semi-private places is to provide a personalized media environment that is attached to the person and not the physical place [...] [creating] a cocoon that sheltered them from engagement with the physical location and co-present others, a private territory within the confines of urban space, temporarily appropriating public space for personal use.”¹⁹²

But there are other actions, like the *camping*, meaning setting up in the middle

192 M. ITO, D. OKABE, M. MATSUDA, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA, MIT Press, 2006, p. 6;

of the public space and work through the mobile computer. The camping is a way to actually live the public space, occupying it, being connected with the people around and the landscape, at the same time working.

*“One brings a personal media device and works with it in a public space. Yet the goal is not to completely shut off public space, the public space is especially chosen because one finds it an agreeable location to work from. Like reading a paper in a café rather than at home. They put down roots that have temporal limits, but are more extended than commuters who are simply passing through.”*¹⁹³

It was already observed in the previous chapter how online cooperation tools; platform that enables open-source participation and blogs foster, through constant information between the social sphere and the places, the sense of appropriation, the feeling of common above the public spaces, working as place-making agents.

As the same time the *camping* could be taken as a new public activity, potentiated and equipped, in a way that public spaces could be updates to contemporary needs.

To do so it is important to observe some activities already going on and to push them, through the design. On the other side some public space classic activities are partly performed in social media. The encounter, the watching the stranger, the discussion. Giving gateways in the real public space to these virtual public realms could create interesting *cross sections interactions*.

FLEXIBLE WORKING AND SOCIAL PLACES

For example the *flash mob* and the *tweet-up* are two examples in which a virtual social community, created and empowered in the social networks decide to meet the real world.

The most important point of the story is that the number of people who attend the event can not be predicted. Can be 5 to 10 or 20 people.

The general direction to be taken would be to design of flexible meeting places, where the number of participants may vary, always finding the physical sup-

193 M. ITO, D. OKABE, M. MATSUDA, *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, Cambridge, MA, MIT Press, 2006, p. 9;

port to make the venue suitable.

This type of attitude could be extended to the work. It's phenomenon widely observed how more and more people like to work outside or in bar munity of wireless with their own laptop (*camping*).

*"The knowledge worker will want to be able to sit at any park or cafe and be able to instant message each other, check their e-mail, work remotely from their laptop. To do this they will demand wireless broadband internet encompassing the city – not just a few "hotspot" Starbucks."*¹⁹⁴

It is also possible to imagine that these individual knowledge workers might also like to work together, collaboratively. To sit together and develop a proposal on media, collectively *speak* to another like-minded group member.

Then public space may serve as support not only to individual work but it could also provide a shaded group work space, easily adaptable to different needs, equipped with wireless connections and plug-in devices.

A proposal may therefore be made for open-air public workspaces, flexible and changeable, depending on the size of the working group, equipped with wireless connection and socket to recharge the various technological devices. Better if those equipped area are outside a public building for common culture, a museum or a co-working spaces, so that it just extend his functions in the facing public space, creating an whole system.

*"Naturally, rather than by design, the plaza operates as an outdoor meeting room, encouraging gatherings both large and small, it is a work place and a social space."*¹⁹⁵

COMMON MEDIA SCREENS

The big screen that displays media content, games events, can create a common activity in public space. An absolutely fascinating example of this phe-

194 R. MARSHALL, *Working in the wireless city, in Public 3: work life* edited by J. CALDER, Melbourne, WB Reaserch Press, 2007, p. 186

195 M. CRAMER, "Where are you?" *Technology and Public Space: Why design the public domain for mobile media technology*, Sydney, Woods Bagot , p. 3

nomenon is the transformation of the city of Hamburg during any football tournament. Each bar in the centre decides to take out a small TV screen. Every people poured into the streets, sit in a before-today empty cafe, to watch the events as if it were a big common unplanned party.

Or even in Milan, going to Piazza Duomo to watch a football match in a big screen, cause hundreds of city users to meet and hang out in the public space.

The latest trends of media presuppose the possibility of incorporating the screen on the facade of a building. An intervention of this kind, however results highly anachronistic at the same time in which the building is out of the yard, having architecture, a totally different time from technology.

The screens, as seen before, are the encouraged *gateways* from the virtual world to the physical one, as they help in creating a commune task in the public space, as a lot of people commonly consume the same content, enlarging at the same time those gateways to not smart-phone endowed people.

So, when *gateways*, the screens can also be interactive, assuming not only a passive activity performed by users, to watch, but also an active one, to choose the content to watch. They can use the screens to load and display self-produced media contents or free- from licences ones

You can imagine using a screen in a public square to watch together with friends a made-together video, and or to visualize in the- co-working area, a presentation about media. These types of equipment could promote bottom-up cineforum.

Like minded or friends could enjoy watching the video, and luckily other people could join, as watching other people's life is a old in the century activity, performed in public spaces.

As said before the screens could also show what it is going on (activity and people) in another public space. This invisible connection, as said before creates synergies between the two spaces, and luckily could extend the activity "watching the other" to another virtually connected space.

POTENTIATED AGORA`

As said before screens could be gateways from virtual to physical reality.

According to the content visualized the activities proposed in public space are different.

The public spaces have always been seen as a place of discussion; according to Habermas in public spaces, people performed his idea of public realm: citizens discussing with one another.

Discussion is largely performed nowadays in social networks, such as *Facebook* or *Twitter*. But screen in the public space could show up those types of comment, thus bringing a virtual discussion into a physical stage.

In Milan, the conference *Meet the Media Guru* takes places in a big theatre, with the speaker between two big screens on the two sides of the speaker. Every comment published in *Twitter* with a particular hash-tag is visualized in the screen in real time, creating an on-going debate among the listeners while the conference is going on.

AUGMENTED PLAY AND EXPLORATION

A final possibility is to create another type of *gateway*. An augmented reality application that can, in certain places, create new games, or information to encourage a different use of the space.

“For example the app for iPhone called The Hidden Park. Its intention is to teach kids to explore and learn about the public realm. The app sets up a number of clues that guides you through environments. Using the various functions on the phone, including the camera, GPS and compass, you encounter trolls, fairies and dragons along the way. You can play this game in any one of 12 parks in cities such as New York, Tokyo, London, Melbourne and Sydney.”¹⁹⁶

Or for example to foster information among tourists and a different type of knowledge among residents, in Berlin, *Twinity* reconstructed a true-to-scale section of the Berlin wall in virtual reality, to commemorate the 20th anniversary of its fall.

It is then possible, while walking through one of the open-air wall museum gateways at the *Brandenburg Gate*, *Potsdamer Platz*, and *Checkpoint Charlie* to step back in time to 1989.

From the *Brandenburg Gate* to *Checkpoint Charlie* - a 2 km interactive stretch of the *Berlin Wall* including the infamous death strip - will appear before your

196 M. CRAMER, “Where are you?” *Technology and Public Space: Why design the public domain for mobile media technology*, Sydney, Woods Bagot, p. 3

eyes. Memory and history, an invisible layer that used to influence our cities, is now visible and offers new services and present urban narratives tailored to the place.

Invisible layers of the city (the demolished wall) could become a touristic attraction creating new uses in the public space.

What is interesting generally about the above-mentioned possibilities is the open-source process. Technology based equipment are in fact generally highly flexible, due to the fast changing growing process of this field. Thus, once the equipment is made available, it is then open to the users to upgrade it, and find new uses. In a virtual-physical open-source way.

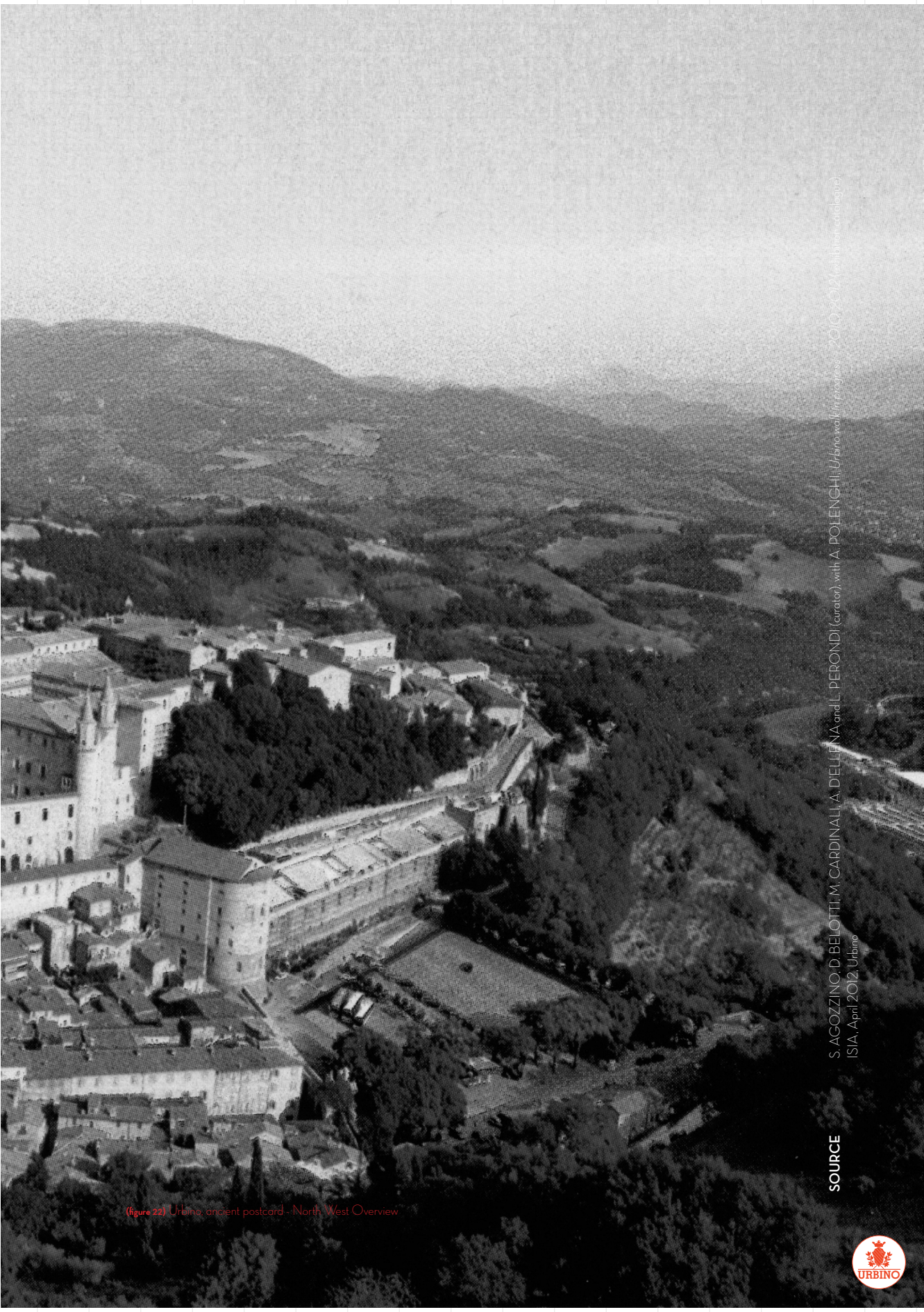
2

**URBINO AS A CASE STUDY
TO OBSERVE THE POTENTIAL BENEFITS LED
BY DIGITAL TECHNOLOGIES
IN THE PUBLIC SPACE USE AND DESIGN**

2.1

Urbino under analysis: why it could be assumed as a case study





(figure 22) Urbino, ancient postcard - North West Overview

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walking progress* - 2010, 2012 (with further corrections)
ISIA, April 2012, Urbino

SOURCE







(fig. 25) Urbino, ancient bastard. South West Overview

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENCI: *Urbino walk in progress - 2010, 2012* (exhibition catalogue)
ISIA, April 2012, Urbino

SOURCE



2.1.1 Sketching Urbino: brief outlook of the city

Urbino is a city in the Marche region of Italy, born as a Roman town.

It passed through a long series of historical events that, particularly with the dominion of Federico III, Duke of Urbino during the Renaissance, left their architectural traces as a huge heritage to the city. The growth of the university – founded at the beginning of 1500 – in the first half of the Twentieth Century, decreed the nodal role of Urbino as a main university pole in Italy. On the other hand it also led to the need for new and larger spaces for educational activities and for student accommodation. In this regard a collaboration between Carlo Bo, at that time director of the University of Urbino and the architect Giancarlo De Carlo was established, giving the city incredible samples of modern architecture.

At the present time, Urbino is a city characterized either by its astonishing historic legacy from the past and a considerable number of university students.

The city of Urbino is in the Marche region of Italy, in a geographical site between the *Foglia* and *Metauro* Valleys. The municipal area has a surface of 228,07 kilometers, the altitude ranges from 637 meters to 82 meters on the sea level¹⁹⁷. The historic city is located upon two hills and has an altitude of 450 m. on the sea level and an extension of about 1.2 square kilometres.¹⁹⁸

The ancient history of Urbino roots back to the Roman town of *Urvinum*

197 Information included in the Urbino ID on Comuni-Italiani.it, via <http://www.comuni-italiani.it/041/067/>;

198 G. DE CARLO, *Urbino: la storia di una città e il piano della sua evoluzione urbanistica*, Marsilio, 1966, p.9;

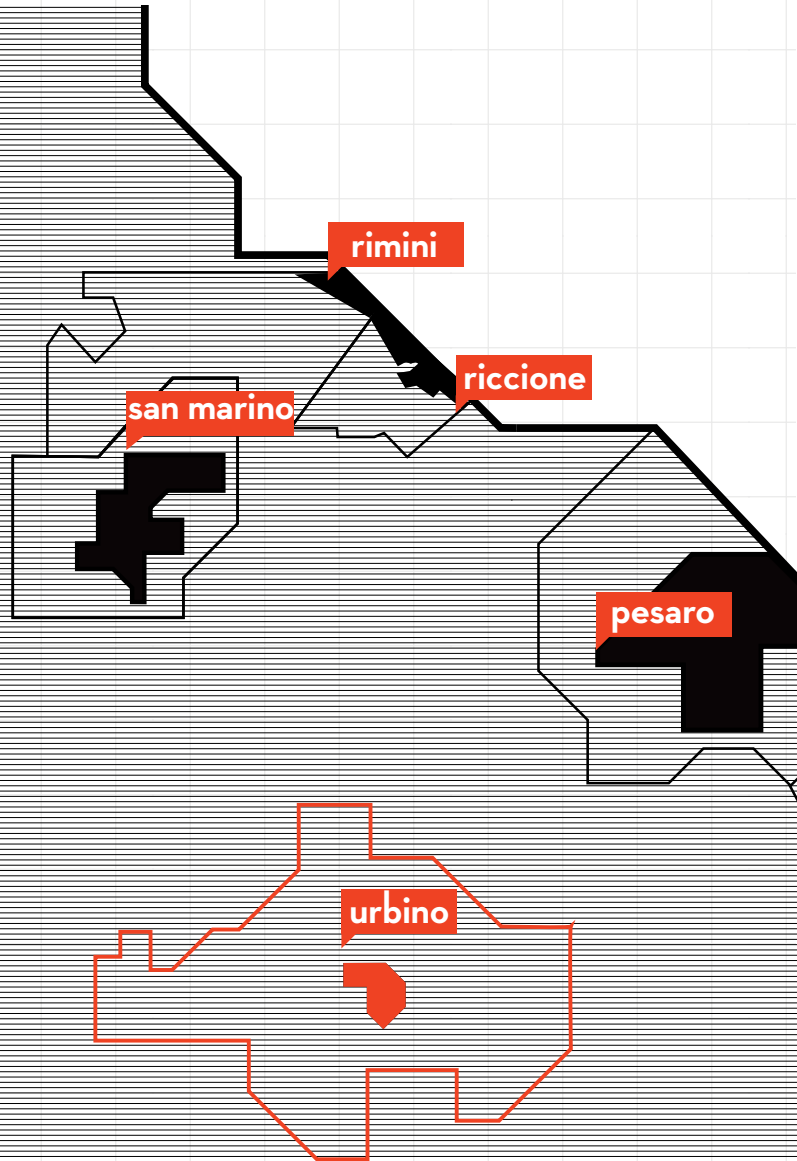
urbino_large scale localization



(figure 24) Urbino - large scale localization



urbino_main municipalities



administrative borders of Urbino municipality



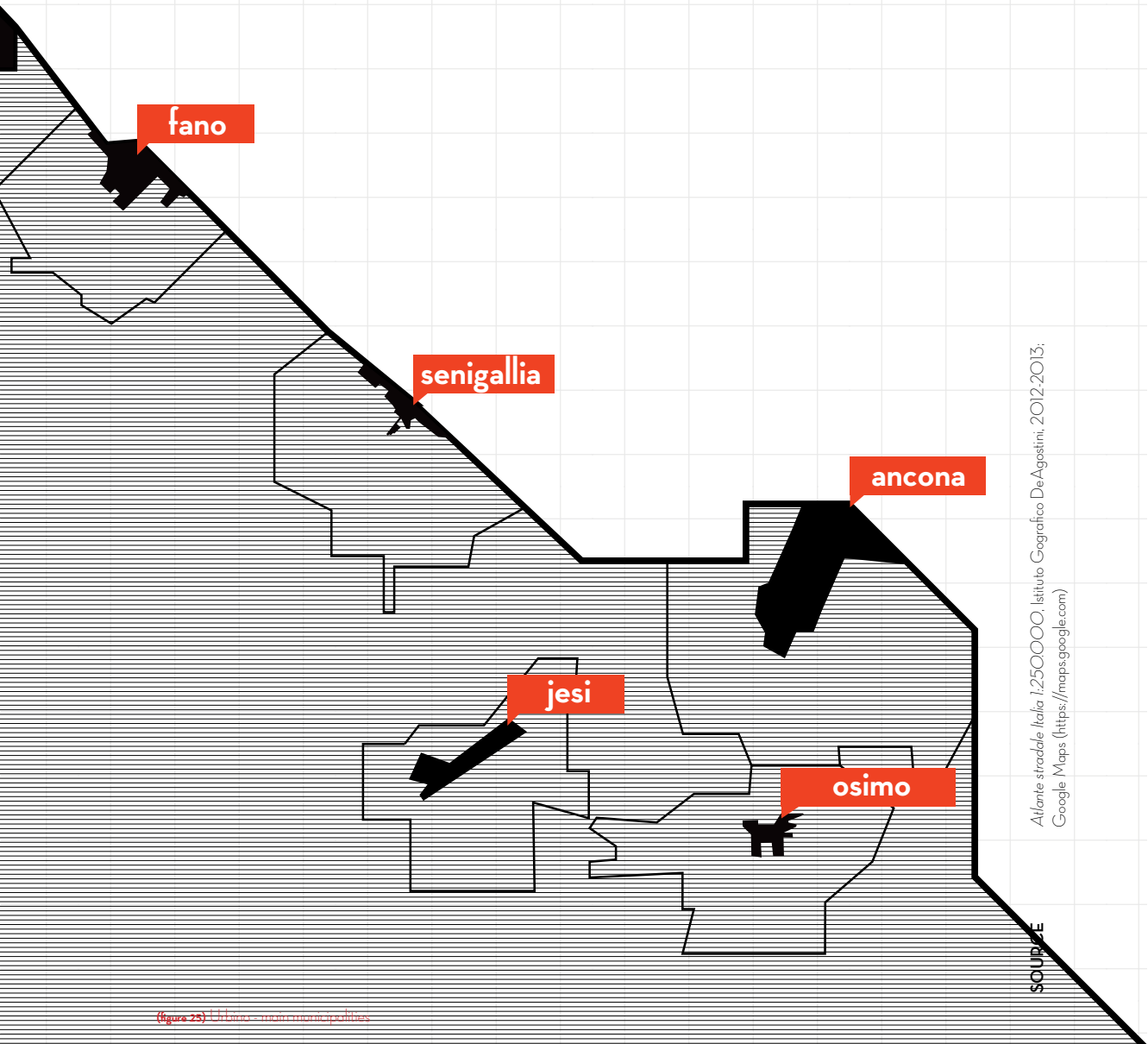
administrative borders of nearby municipalities with more than 30.000 inhabitants



Urbino city core: built density > 12%



City cores: built density > 12%



Allante stradale Italia 1:250000, Istituto Geografico DeAgostini, 2012-2013;
 Google Maps (<https://maps.google.com>)

(figure 25) Urbino - main municipalities



0m 2.5km 5km

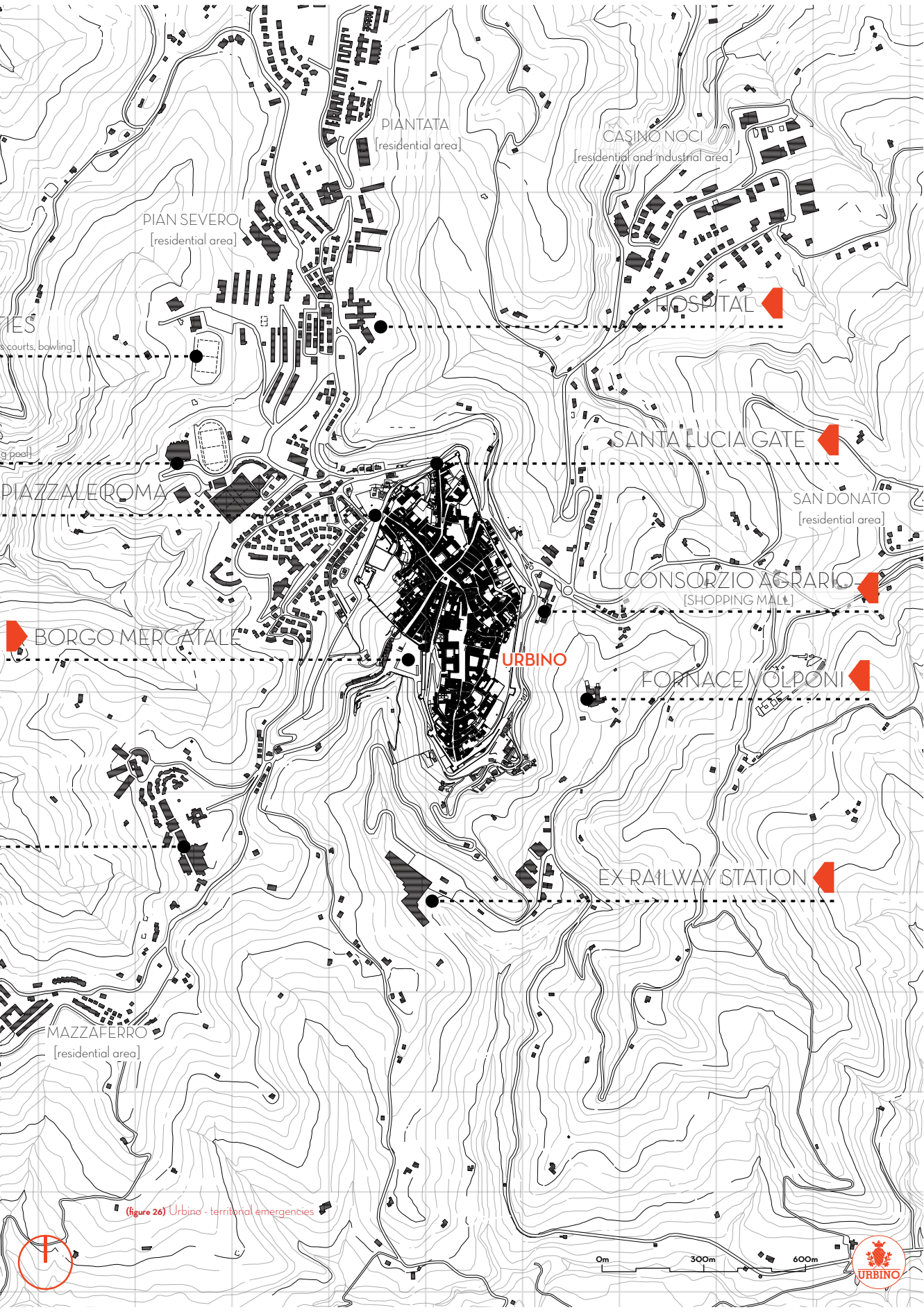


urbino_territorial emergencies

SPORT FACILITIES
[football fields, public swimmingpool, tennis]

SPORT FACILITIES
[stadium, monte telefun, hall of the sport, swimming]

COLLEGE



(figure 26) Urbino - territorial emergencies



*Mataurense*¹⁹⁹, then captured from the Ostrogoths in 538. Independent traditions were expressed in its *comune*, until, around 1200, it came into the possession of the House of Montefeltro, to be then freed by the rebellion of in 1234.

Eventually, the Montefeltro noblemen took control once more, and held it until 1508. Among them, the most famed member was Federico III, Duke of Urbino from 1444 to 1482. He was probably the most influencing personality the city has had: a leader, a diplomat and an enthusiastic patron of art and literature. The university was founded in 1506 by Duke Guidobaldo as the *Collegio dei Dottori*. Its original function was to house the administration and the judiciary of the city and to create an economic basis for the state.

Gonzagas, Borgias, Medicis, Della Roveres: many notable Italian dynasty ruled the Ducky of Urbino until 1626, when the Pope Urban VIII incorporated the city into the papal dominions, to be governed by the archbishop. The later history of Urbino is part of the history of the Papal States and, after 1861, of the Kingdom of Italy.

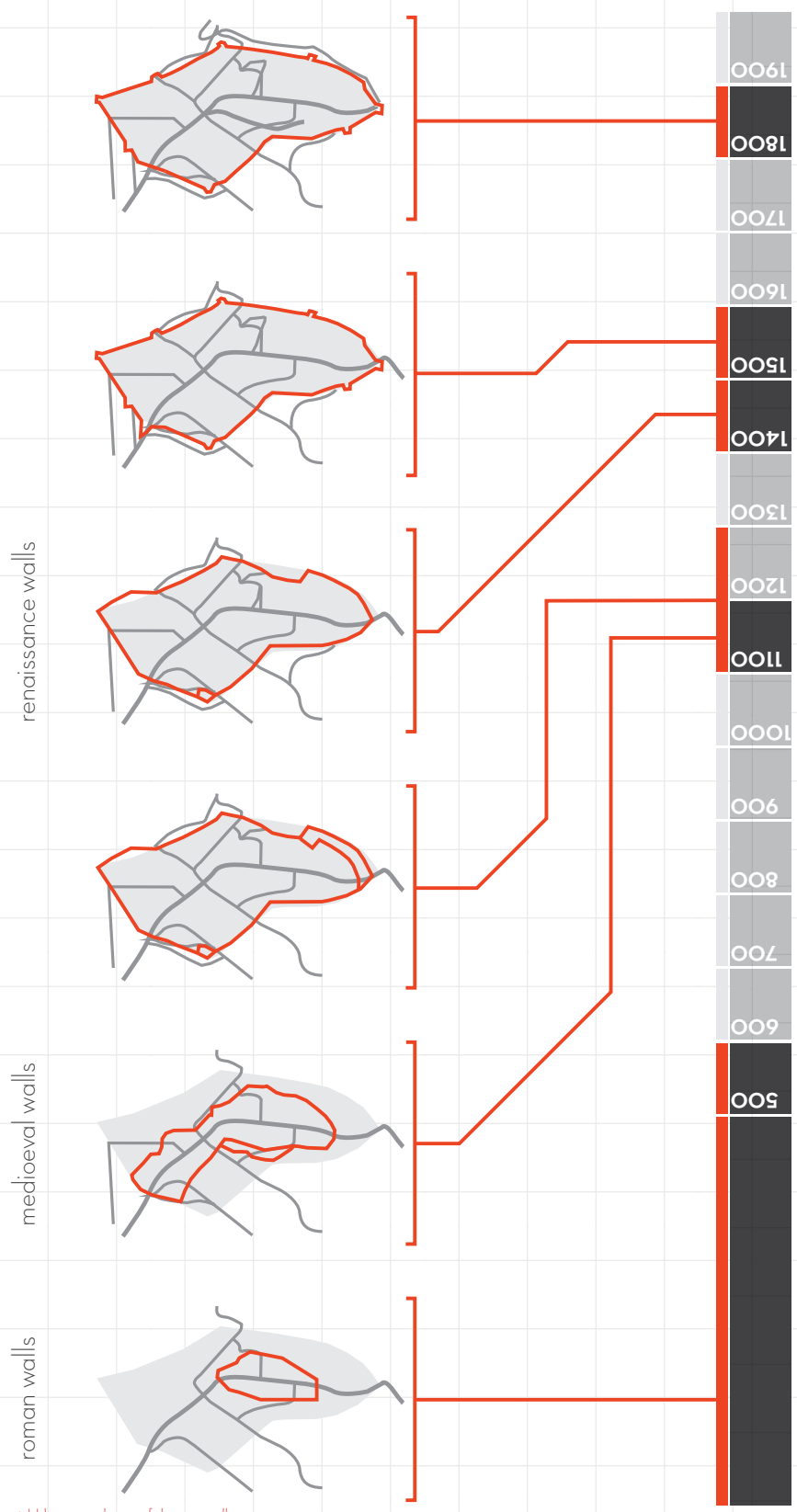
The university grew exponentially in the first Twentieth Century, with the elevation of the *School of Pharmacy* in *Faculty of Pharmacy* and the birth of the Faculty of Education (*facoltà del Magistero*) in the 1934. As a consequence of the evolution of the University there was an increase in the student population that underlined the total unpreparedness of the city, due to the lack of accommodations. The problem was partly solved with the establishment of *Raffaello* male boarding school and the *Laura Battiferri* female boarding school. With the outbreak of the *Second World War* the city did not suffer any bombing, although during the retreat of the German army the city was isolated, with the destruction of rail and road links.

The second half of the Twentieth Century was characterized by the collaboration of either the University and the Municipality with the architect Giancarlo De Carlo, partnership undertaken by Carlo Bo, at that time rector of the University, in 1956, when he commissioned the Genoese architect a project for the inner restoration of the *Palazzo Montefeltro Bonaventura*, the headquarters of the University. Immediately after he was commissioned by the city to prepare the *Piano Regolatore Generale* (1958 - 1964), aimed at the recovery of the historical center.

199 U. AGNATI, *Per la storia romana della provincia di Pesaro e Urbino*, L'Erma di Bretschneider, 1992, p. 19;

urbino_evolution_of_the_city_walls

(figure 27) Urbino - evolution of the city walls



S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walk in progress - 2010, 2012* (exhibition catalogue), ISIA, April 2012, Urbino

SOURCE

Later De Carlo will realize various projects for city, including the stunning Collegi, outside the historic center, the projects for the Faculty of Law, the Faculty of Education (*Magistero*) and the renovation of the palace Battiferri, Faculty of Economics – which are three significant examples of the inclusion of a contemporary architecture in an ancient fabric – and the restoration project of the ancient ducal stables, called Data.

At the present time, Urbino is a city that lives with this incredible historic legacy from the past and the importance of the university, as well as the number of students it houses. The population did not significantly change in the last twenty years; counting nowadays 15.270 inhabitants²⁰⁰, compared to 15.115 unites in 1991 and 15.291 in 2001²⁰¹. The spatial density, currently of 68,5 inhabitants/skm, has had no deep variation in time as well. This latter compared to the macro area is noted that the density of the city of Urbino is one third of the national one and half of the provincial and regional levels.²⁰²

According to a survey conducted by the municipality of Urbino in 2001 and based on data collected by the registry office (*ufficio anagrafe*), the number of families living in the historic center is quite limited (11%); the remaining dwellers are residing outside the city walls (32%) or in nearby hamlets or scattered houses (57%).²⁰³

Urbino has about 15.270 permanent residents divided among the inhabitants of the old town (1,141), those outside the walls (4,596) and those living in villages (within 15 minutes there are 41 villages with a total of approximately 9,900 people including Canavaccio Castle, Horse, Gadana, Pieve di Gagna, San Donato, Schieti, Trasanni).

Already in the 1966, the architect Giancarlo De Carlo was worried about the future of the historic center:

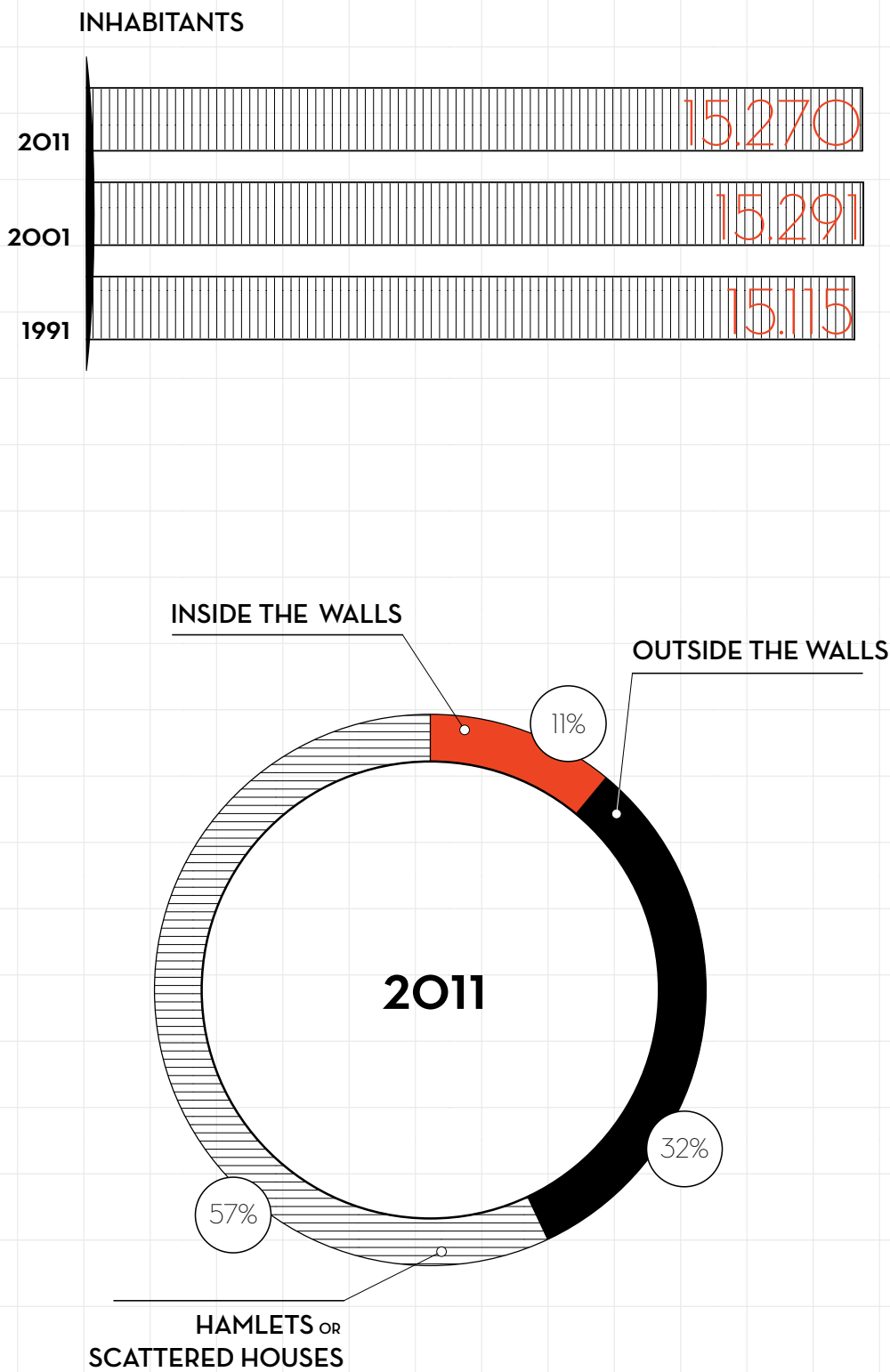
“La forza che trattiene la parte nuova sotto influenza della città antica è

200 — INSTAT, *Popolazione residente e abitazioni nelle province italiane: Pesaro e Urbino*, October 2011, via http://www3.istat.it/dati/catalogo/20071002_00/FP_Pesaro%20e%20Urbino.pdf;

201 — Comune di Urbino, *Secondo Rapporto sullo Stato dell'Ambiente*, via http://www.comune.urbino.ps.it/ContentManagement/Uploaded/CMItemAttachments/1_Quadro%20sociale.pdf;

202 — *ibidem*;

203 — *ivi*;



(figure 28) Urbino - inhabitants

INSTAT, Popolazione residente e abitazioni nelle province italiane: Pesaro e Urbino, October 2011, via http://www.istat.it/dati/catalogo/20071002_00/FP_Pesaro%20e%20Urbino.pdf;
Comune di Urbino, Secondo Rapporto sullo Stato dell'Ambiente, via http://www.comune.urbino.ps.it/ContentManagement/Uploaded/CMItemAttachments/1_Quadro%20sociale.pdf

SOURCE

infatti alimentata dalla persistenza di una radicata consuetudine sociale, ma soprattutto da una attrazione puramente gravitazionale che il Centro Storico ancora esercita in ragione del suo maggior peso di popolazione e della sua più elevata densità di servizi. Ora, per l'affermarsi di nuovi modelli culturali e di comportamento indifferenti alla storia ed ai caratteri della città, le consuetudini sociali stanno modificandosi; e la stessa forza di gravitazione si attenua man mano che lo sviluppo cresce e si espande"²⁰⁴

The impression Urbino gives is that of a dichotomous place, blocked between two realities: the heritage of the city of the past and the contemporary needs of the *city-campus*. Won the geographical isolation that characterizes it, zig-zagging along the thin road axis of connection, you arrive in a city that lives between the elegance of some unperturbed Renaissance architectures and the colorful and lively presence of university students.

While the instances of the preservation and protection of the historical heritage have to be considered as a primary objective in the administration of a city, equally striking is the risk that the integral conservation prevents the city to fulfill its fundamental role as the home of its citizens. The inability of a city to adapt and respond to changes of its inhabitants, may declare a disconnection between these latter and the lived places. Consequences are anything but positive.

*“Chi oggi visita Urbino ammira quel gioiello rinascimentale a tutti noto, una città fuori dal tempo nella quale, soprattutto quando gli studenti lasciano l'Ateneo per le festività, si respira un incanto dolce e amaro, composto di passata grandezza, di razionale lungimiranza che vince i secoli e di presente stasi, a essa collegata e contrapposta. [...] Nell'immobilità, nell'isolamento, c'è la ragione dell'incanto – le notti estive, il centro splendido e deserto, solo 'la Piazza' popolata – e insieme la radice dell'amaro.”*²⁰⁵

204 — G. DE CARLO, *Urbino: la storia di una città e il piano della sua evoluzione urbanistica*, Marsilio, 1966, p. 106:

205 — U. AGNATI, *Per la storia romana della provincia di Pesaro e Urbino*, L'Erma di Bretschneider, 1992, p. 19;

2.1.2 Isolation, City-Campus, Heritage: why Urbino is emblematic as a case study

There are three salient features that characterize the city of Urbino: the geographical isolation, the university centre, the cultural heritage. The first factor has allowed the city to preserve for centuries the great historical and architectural legacy, but with the risk of inducing the city to a situation of excessive exclusion from the rest of Italy. However, the important university that is located in Urbino allowed a continuous flow of people and content, beyond its geographic and infrastructural insufficiencies of the urban settlement. On the other hand, the conspicuous presence of temporarily users in the city, such as that of the students, led to the emergence of issues related to the use of space and the needs demonstrated towards these matters by the young dwellers – either native or not. If on the one hand the public space should be an expression of the needs of a young and increasingly more related to the use of digital technologies audience, on the other a meticulous attention to the historical and artistic heritage of the city must prevail. Instances of integrated conservation must find a meeting point with the demands of modern life.

The city of Urbino, as previously described, is a small town full of own peculiarities and memoirs, as well as many other historic centres in Italy. What makes it intensely interesting and efficient as a case study is the peculiar combination of three main factors: the condition of isolation, the relevance of the city as a university pole, the *UNESCO* historic heritage.

Specifically the first feature, the geographical isolation in which the city lays since its foundation, makes Urbino ideal as an *in vitro* test to experiment the introduction of certain new variables of the urban planning.

Let's stress this biological allegory, as to better explain the reasons that led to the choice of this city as a case study.

The most important factor in an *in vitro* test is the possibility to isolate the object of analysis from any other source of contamination. Urbino is located on a *selective culture medium*, which has inhibited the growth of other species: not all the exogenous elements can penetrate the endogenous ecosystem and any contact is carefully filtered by appropriate *inhibitors*, that are the topographic conformation of the area, the shortage of heavy infrastructure, the stiffness of weather.

The opportunities for research are therefore emphasized: the introduction of any exogenous species could be controlled and the impact on the system while attempting to respond, fight or adapt to these elements is thus identifiable and could be studied.

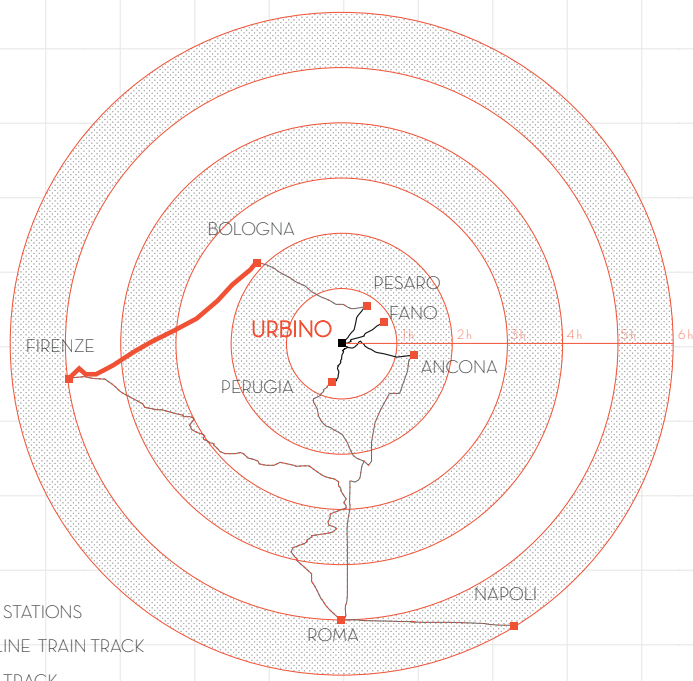
Urbino is not easily accessible and the causes are determined by the roughness of the area and the lack of road and rail networks that would make the connection to the city faster and more convenient. Those in Ancona (km. 92) and Rimini (km. 64) are the nearest airports, while the closer train stations are Pesaro (km. 37) and Fano (km. 48); from there it takes to catch a bus to reach Urbino. By car is possible to get to Urbino from Rome (km. 281) in about three hours and twenty minutes, from Florence (km. 184) in about two hours and thirty-nine minutes and from Bologna (km. 175) in about two hours.

Its condition of spatial isolation has strongly influenced the attitude of the small urban center and if on a side it gave a contribution in preserving the cultural and historical heritage of the city, on the other it ran the risk of making Urbino a provincial reality.

One of the feature that has ensured Urbino to preserve a nodal role in the Italian scenario, has been the fact that it houses one of the eldest university in Europe, founded in 1506 and still among the most prestigious. The presence of this powerful cultural catalyst influenced the human fluxes through Urbino: every year, generally for a limited period of time, a conspicuous amount of young people moves from other Italian regions to Urbino, in order to enter university.

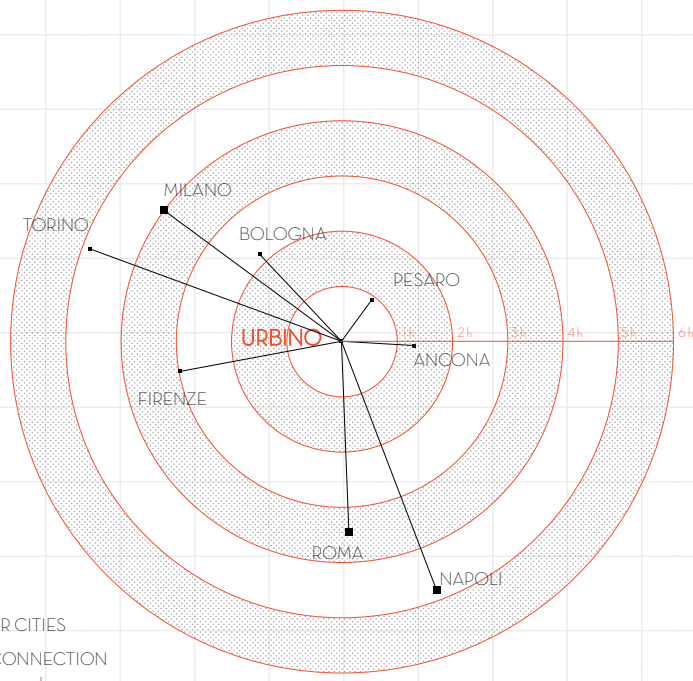
The university structure went increasingly widening and articulating, as well as student flows were – at least until the '90s – always growing and, even if in recent years the number of people enrolled is quite stationary, the small Marche

urbino_isochronic maps



- TRAIN STATIONS
- FAST LINE TRAIN TRACK
- TRAIN TRACK
- BUS ROUTE

BY **TRAIN** AND
BY **BUS**



- MAJOR CITIES
- CAR CONNECTION

BY **CAR**

(figure 29) Urbino - isochronic maps

Atlante stradale Italia 1:250000. Istituto Geografico DeAgostini, 2012-2013;
 Google Maps (<https://maps.google.com>)

SOURCE



center houses about 14.000 students²⁰⁶.

As a result, the city lives an extremely peculiar condition, counting a number of university students even higher than that of the native resident population. The consequences of this presence of temporary students are clearly imaginable. They represent a key source of the economy of Urbino, as well as fundamental portion of the urban population and are practically the main users of the publicly used places within the historic city. Despite those features, students are still considered as a kind of abnormal citizenship: they are not seen – and the other way round, they don't consider themselves – as effective resident of the city but as temporary dwellers.

They have needs and expectations towards the spaces of the city and these are not kept in consideration. Each city actor has his own specificity and requirements, young people deserves places where to meet, foster social interactions; where to study, create, write an essay, read a book, chill out, organize events. A spatial differentiation is thus absolutely necessary, especially to avoid the occurrence of conflicts between different users and their specific wishes.

Moreover, nowadays students belong to a generation that makes an intensive use of digital and electronic devices, thus requiring technologically equipped spots from which to connect, charge a smartphone, access to clouds of data.

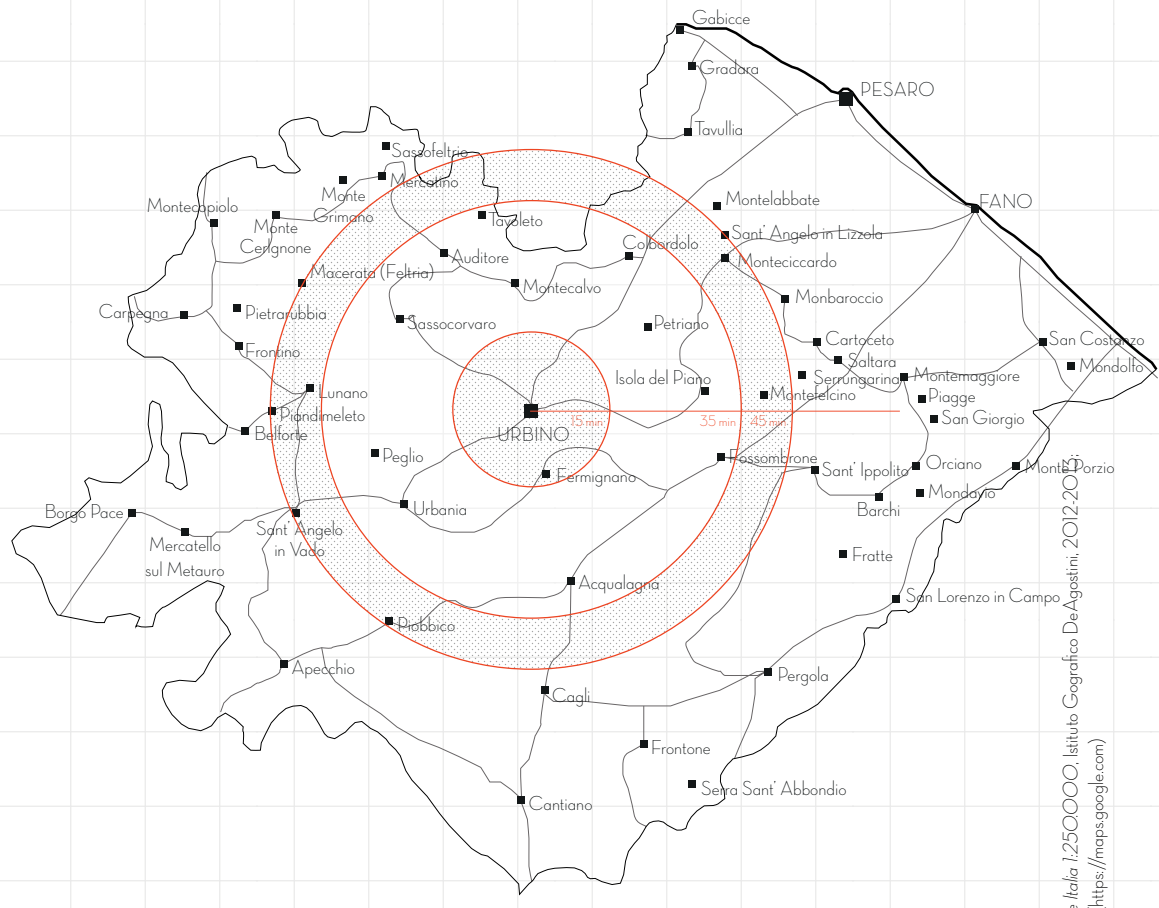
These unfulfilled expectations have to be considered among the factors that lead to a further detachment of the students towards the urban issues.

The feeling not to belong to a place or the awareness to belong only temporarily, does not activate a mechanism of identification with the spaces of the historic city centre. The *momentary user* does not perceive the city as *his* city, but as *the city where he dwells now*; the consequences of his actions on the common sphere are not considered.

The student, as a symptomatic example of *temporary user*, generally leverages Urbino: he exploits the excellent universities, the affordability of life and the tranquility of the atmosphere for a period of time, then simply goes away. He has no interest in worrying about the outcome of the city within ten years, simply because he knows he will not be there and he is not even fostered at

206 Total number of students per year: 14.359 (2010/2011); 14.449 (2011/2012); 13.777 (2012/2013). From *Statistica Studenti Iscritti per gli A.A. 2010/2011, 2011/2012 e 2012/2013* suddivisi per Dipartimenti, provided by the Office of *Offerta Formativa Corsi di I e II livello*, university of Urbino;

urbino_pesaro_urbino province



(figure 30) Urbino - Pesaro Urbino province

Atlante stradale Italia 1:250.000, Istituto Geografico DeAgostini, 2012-20
 Google Maps (<https://maps.google.com>)

SOURCE



playing immediate attention towards and to intervene on the common realm, especially because they do not have the proper tools, nor the opportunity is offered to them.

At the same time, the old citizens of Urbino, now mostly moved in peripheral or rural areas, feel an apparent desire of re-appropriation towards spaces of the city – degradation and indifference of whom is ascribed entirely to the disregard of the students – that conceals an effective decline of interest in these spaces. The ancient *common realm* is almost disappeared in the mindsets of *native citizens*, in favor of an outlook of *narrowness* – especially mental – in their own private bubble, in a “*Not In My Back Yard*” attitude.

Students just do not stay in Urbino once they have completed their studies, perhaps they don't have enough job opportunities or probably they have no chance to become attached to the city. As a result, is here reported an index that could be symptomatic of this tendency not to catch *permanent* citizens: the number of residence requests in recent years has had an average of 390 units²⁰⁷, that means an extremely low percentage of new dwellers, especially if compared to data of other Italian urban centers.

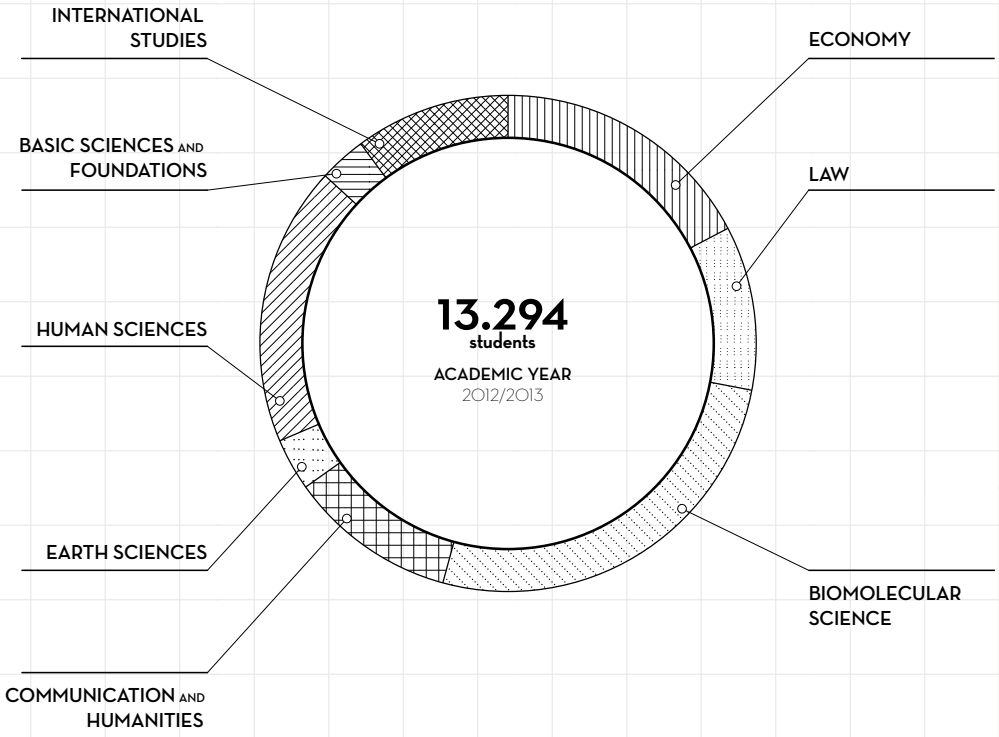
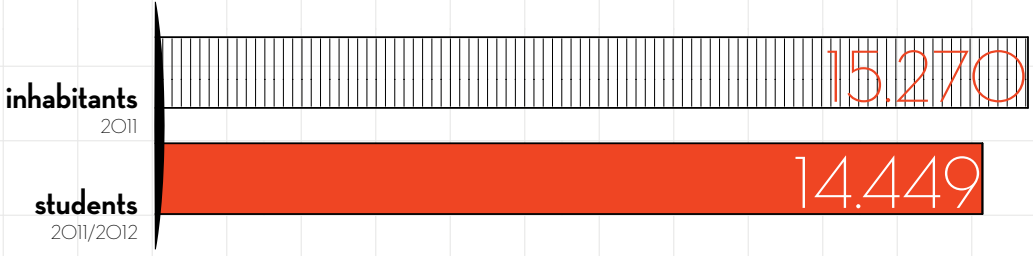
Returning to the biological metaphor, we could say that the *culture medium* of Urbino is interesting because, as well as *selective* to exogenous factors, it is also *differential* towards endogenous elements. The particular composition allows the presumptive identification of isolated *species* and the subdivision of them into *native species* (the inhabitants), *temporary species* (the students) and *phenomenal species*. The latter are *appearances* that occur for periods of time absolutely circumscribed and they take the name of “*tourists*”.

Each year, the city attracts thousands of tourists from all over the world. The charm of Urbino is out of doubt: the incredible cultural flowering it experienced in the 15th century – bringing artists and scholars from all over Italy and beyond and influencing cultural developments elsewhere in Europe – has left to the humanity a glorious legacy and “*its Renaissance appearance has been remarkably well preserved, owing to its economic and cultural stagnation from the 16th century onwards*”²⁰⁸. The uniqueness of the city is also pointed out in this

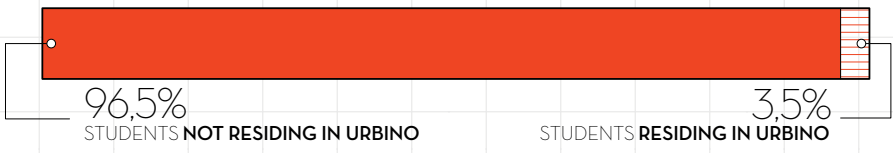
207 Residence requests: 307 (2012); 353 (2011); 404 (2010); 407 (2009); 483 (2008). Data source: *Rischieste di residenza relative agli ultimi cinque anni*, Ufficio Anagrafe, Municipality of Urbino, 2012;

208 UNESCO, *Advisory Body Evaluation*, October 1998, p. 3, via <http://whc.unesco.org/en/list/828/documents/>;

INHABITANTS / STUDENTS



STUDENTS, 2012/2013



INSTATI, Popolazione residente e abitazioni nelle province italiane: Pesaro e Urbino, October 2011, via http://www.istat.it/dati/catalogo/20071002_00/FP_Pesaro%20e%20Urbino.pdf; Office of Offerita Formativa Corsi di I e II livello, university of Urbino, February 2013

SOURCE

(figure 31) Urbino - University students



sites should represent one or more of the following:

critterion[1] individual creativity to represent a masterpiece of human creative genius

critterion[2] the history of ideas and technology to exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design

critterion[3] history of a civilization to bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared

critterion[4] historical development to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates a significant stages in human history

critterion[5] the integration of natural and man-made environments to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change

critterion[6] beliefs and cultural traditions to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria)

critterion[7] the natural sublime to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance

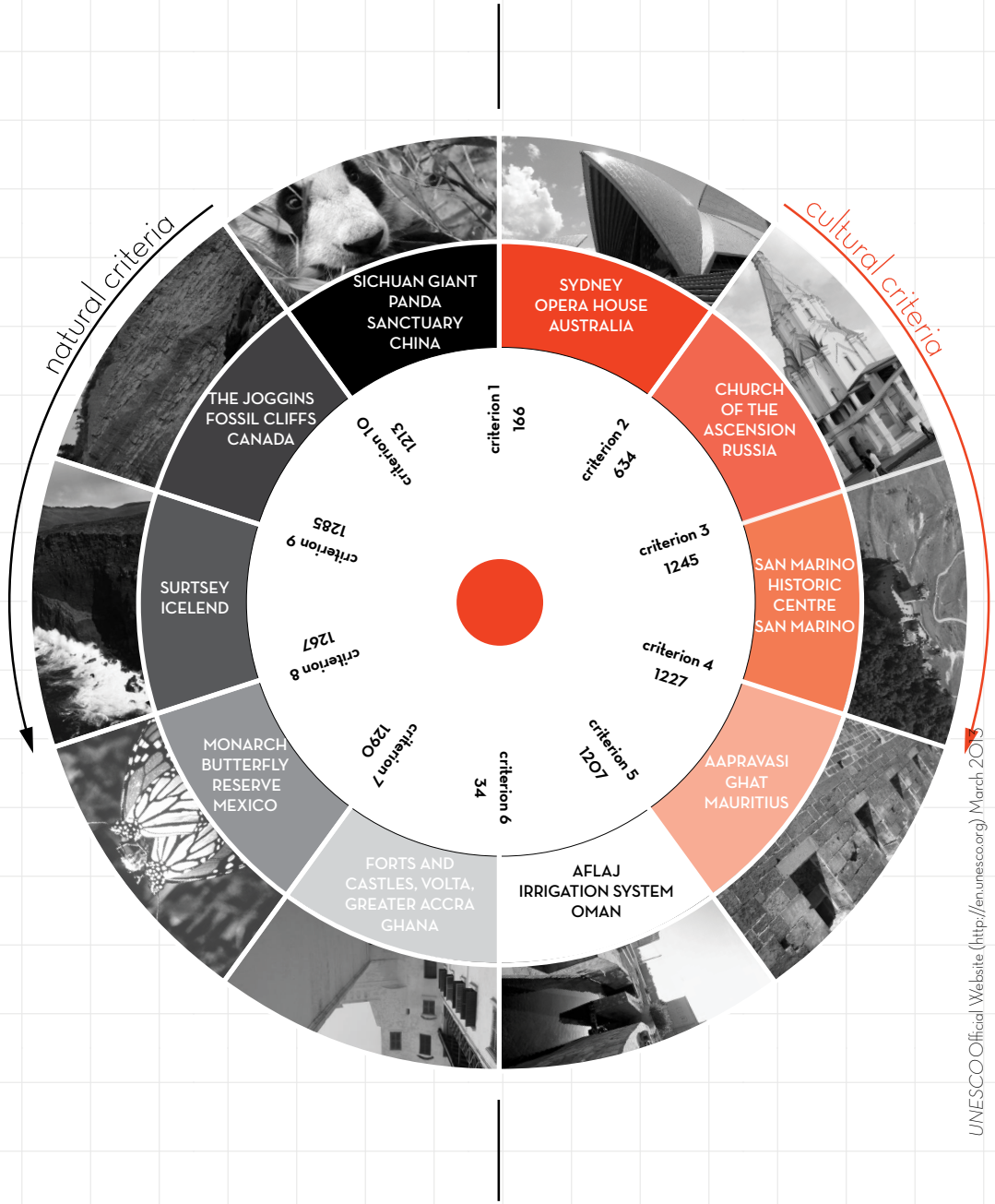
critterion[8] geological history to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features.

critterion[9] biological and evolutionary history to be outstanding examples representing significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation

critterion [10] the conservation of biodiversity to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

(figure 32) UNESCO - criteria of selection

unesco_criteria_of_selection



(figure 33) UNESCO - criteria of selection

UNESCO Official Website (<http://en.unesco.org>) March 2015

SOURCE

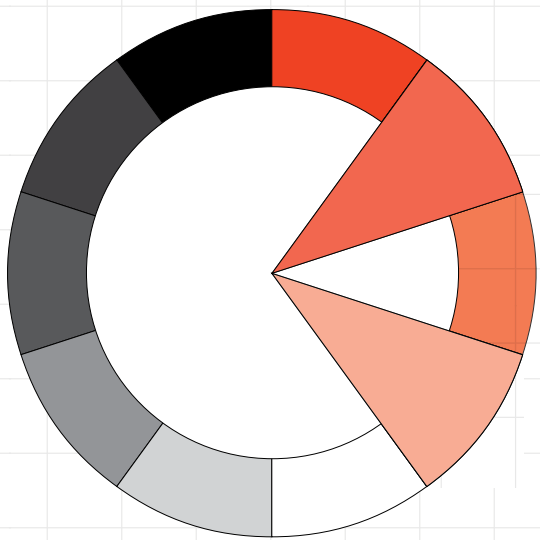


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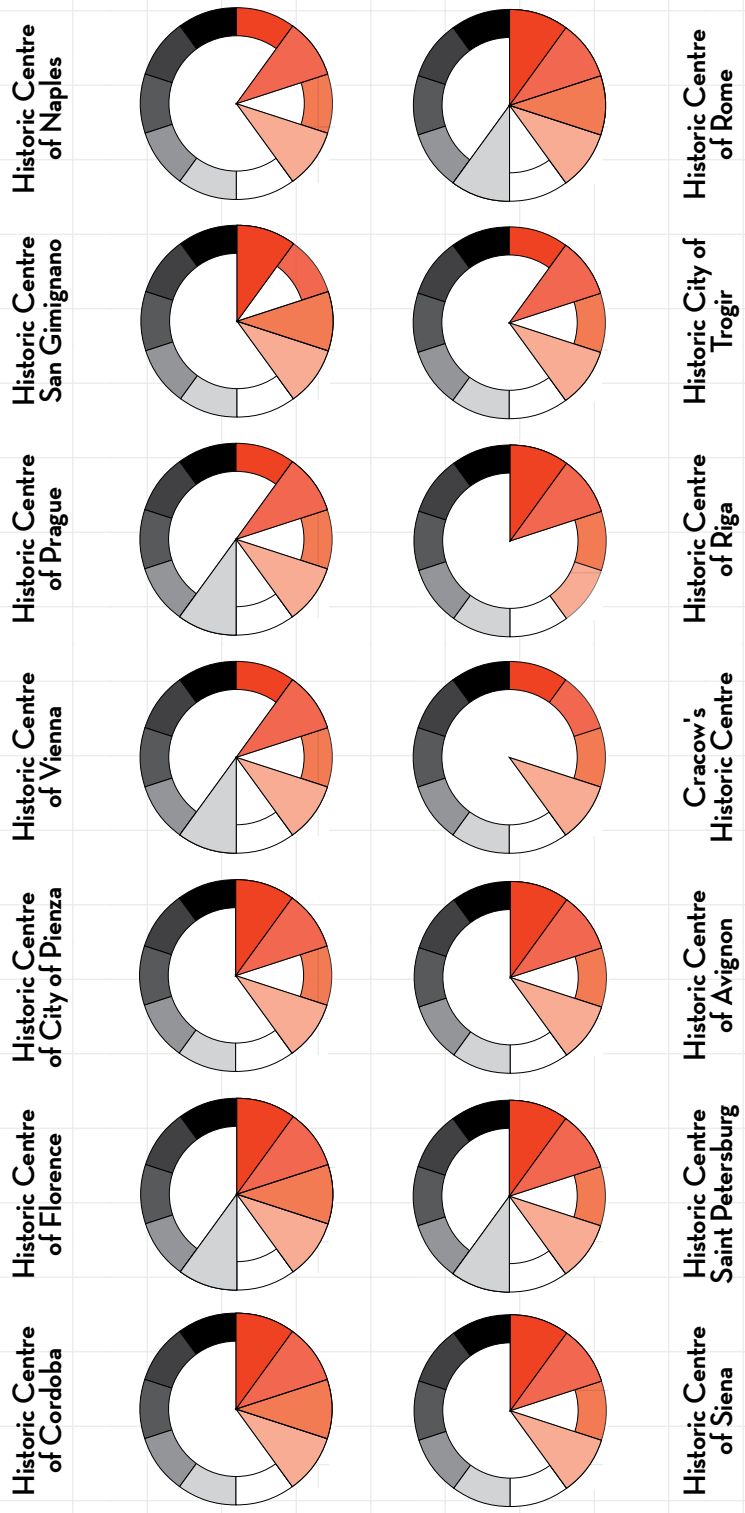
Historic Centre
of Urbino

Italy
Province of Pesaro, Marche Region
N43 43 30 E12 37 59.988
Date of Inscription: 1998
Criteria: (ii)(iv)
Property : 29 ha
Buffer zone: 3,609 ha



(figure 34) Urbino - UNESCO criteria

historic centers _ criteria comparisons



(figure 35) historic centres - criteria comparisons

SOURCE

UNESCO Official Website (<http://en.unesco.org>) March 2013



document:

*“Unlike other major cultural centres, such as Florence or Venice, Urbino flourished for only a short time in the 15th century. It was this short flowering, when it attracted artists and scholars from all over Italy, that shaped its present-day form. This phenomenon cannot be duplicated elsewhere, either in Italy or other parts of Europe.”*²⁰⁹

The breathtaking beauty of the historic center of Urbino earned it the subscription to the *UNESCO World Heritage List* since June 1996. Though the city was already protected by other restrictions in term of preservation:

*“The historic centre of Urbino [...] has been protected under the basic Italian Law on Environmental Protection (No 1497/1939) since 1969. In addition, some seventy of the buildings in the historic centre and the fortifications are also covered individually by the basic Law on Cultural Protection (No 1089/1939). Any interventions are thereby subject to Ministerial approval. There is also special legislation (Laws No 124/1968, 462/1985, and 103/1993) devoted to the restoration and rehabilitation of the city and its surrounding landscape in the territory of Montefeltro.”*²¹⁰

The cultural criteria²¹¹ according to which Urbino has been declared *UNESCO Heritage* are two: the first deals with the exceptional urban complex and the influence these latter has had on rest of Europe (*criterion IP*²¹²), the second define the city as “*a pinnacle of Renaissance art and architecture, harmoniously adapted to its physical site and to its medieval precursor in an exceptional manner*”

209 ivi;

210 *UNESCO, Advisory Body Evaluation*, October 1998, p. 2, via <http://whc.unesco.org/en/list/828/documents/>;

211 “*To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria. These criteria are explained in the Operational Guidelines for the Implementation of the World Heritage Convention which, besides the text of the Convention, is the main working tool on World Heritage. The criteria are regularly revised by the Committee to reflect the evolution of the World Heritage concept itself. Until the end of 2004, World Heritage sites were selected on the basis of six cultural and four natural criteria. With the adoption of the revised Operational Guidelines for the Implementation of the World Heritage Convention, only one set of ten criteria exists.*” (*The criteria for selection, UNESCO Official Web-Site*, via <http://whc.unesco.org/en/criteria/>)

212 “*To exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design*” (*The criteria for selection, UNESCO Official Web-Site*, via <http://whc.unesco.org/en/criteria/>);

(*criterion IV*²¹³).

Regardless by the specificity of this field, concerning many different levels of preservation at different scales and with several prescriptions, what it is important to emphasize is the relevance of the issue of the cultural heritage. Especially because, as it is easy to guess, the necessity of the integral conservation clashes with the needs of a population that lives in the twenty-first century and in particular with the expectations of the students.

*“La vicenda del ducato è svanita nel tempo, lasciando una seria di documenti – gli edifici, i quadri, le statue, i testi scritti – e di segni ancor più preziosi ed eloquenti: le abitudini, i gesti, le inflessioni di voce conservati nella continuità dello scenario fisico e del corpo sociale che vi abita. Tutto ciò sopravvive perché Urbino è rimasta piccola e fuori mano, ma rischia di venir disperso velocemente se la pressione del mondo esterno ‘sviluppato’ si intensifica anche di poco. Il paesaggio naturale con le sue coltivazioni agricole non è più uno sfondo stabile a cui ancorarsi, ma piuttosto un tessuto di apperenze precarie, che può essere definitivamente sconvolto da decisioni sbagliate prese nelle grandi città. Il paesaggio costruito è difeso dai vincoli ma può diventare una scena vuota se si allenta il suo legame con la vita della gente, come sta già accadendo. Questo patrimonio eccezionalmente prezioso è diventato anche eccezionalmente delicato, e la sura sorte è affidata ormai, per il bene o per il male, alla grande avventura della pianificazione moderna, che potrebbe far rifluire la cultura tecnica e visiva del nostro tempo (che include anche gli apporti della cività urbinata) su Urbino medesima, per sistemarla in modo non indegno del suo straordinario passato.”*²¹⁴

Also Giancarlo De Carlo, in *Urbino: la storia di una città e il piano della sua evoluzione urbanistica*, expresses his concern about the possibility of reconciling the demands of conservation with the needs of the actual citizens:

“In varie occasioni quando si è presentato il problema della salvaguardia ambientale, la posizione dei partiti dei rappresentanti delle diverse categorie sociali, dei gruppi intellettuali, è stata rigorosa e unanime. Ma al di là degli atteggiamenti e delle dichiarazioni di principio, sotto la ferma determinazione di preservare i simboli maggiori traspariva la preoccupazione di dover pagare la conservazione integrale del Centro Storico con il congelamento di

213 — “To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history” (*The criteria for selection, UNESCO Official Web-Site*, via <http://whc.unesco.org/en/criteria/>);

214 — L. BENEVOLO, P. BONINSEGNA, *Urbino*, Laterza, Bari, 1986;

The identity of Urbino is the main purpose of our experimentation. Considering the possibility to intervene on a system with an heavy infrastructure project would certainly influence negatively the delicate *habitat* of the city. Indeed, this type of intervention would imply activities whose cost and environmental impact could be easily declared unsustainable; furthermore the feature of the *geographical isolation* – as the main feature that for centuries has allowed the preservation of the splendid cultural heritage, along with the almost rural dimension, the slower rhythms and the high quality of life – would be extremely high, practically unaffordable.

The goal, however, is also to understand and meet the needs of the students, as a considerable portion of the population of Urbino, who aspire to have public spaces encouraging not only the activities of social cohesion, but also satisfying the needs for a contemporary urban living.

Finally, we must bear in mind the instance of the heritage to preserve; thus, any kind of intervention, either aimed at connecting the city with the outside or aimed at improving their internal cohesion, must be held in a non-invasive way towards the existings. Therefore, interventions concerning the connection through roads of Urbino to the main neighboring towns, as well as intervention of traditional re-design of the public spaces within the city (involving earthworks, leveling, builds, conversions) are inadvisable. The importance and interest of an intervention aimed at creating a system of *complex digital network* raises. In the first place, with the creation of a flow of information between communities and places, thus encouraging the recognition of the students. In addition, new poles should be introduced and the interconnection between these should be ensured. Finally the program of *light* re-design of these places has to be finalized to the support of public activities introduced by the use of new media.

215 G. DE CARLO, *Urbino: la storia di una città e il piano della sua evoluzione urbanistica*, Marsilio, 1966, p. 105;

2.1.3 Piano Strategico of Urbino and Piano di Gestione UNESCO: opportunities for new approaches?

An appropriate urban intervention must be based on the correct identification and interpretation of instances of the context in which it is elaborated. The presence of documents related to the intent of the research is extremely useful, especially if it concerns documents processed with the support and participation of large sections of the civilian population. This is the case of Urbino, recently invited to the formulation of two key urban tools, the Piano Strategico and the Piano di Gestione UNESCO. The first aims at providing some guidelines for the development of social, economical and territorial cohesion – which can then be made through specific plans and projects – and its elaborated with a participated methodology. The latter, represent a fundamental document, part of the Piano Strategico, the Municipality of Urbino has to produce as a mandatory requirement for the inclusion among the UNESCO Heritages.

Understanding the dynamics that regulate a city is complicated: beyond the surface of the single phenomenon, generally a high number of contributory causes is hidden. Thus, an accurate research should not be limited to the empirical observation conducted in a circumscribed moment, but is expected to monitor the evolution of the events within a significant period of time. This procedure can help prevent mistakes in undervaluation or overvaluations of the studied features, as well as in better focusing the aim of the research.

As previously introduced with the biological metaphor, our goal was to elaborate a pondered intervention on the existing settlement that springs from a careful observation of its development. An analysis that consists of an instantaneous extrapolation of a certain configuration at a given juncture clearly could turn out to be impartial – if not prejudicial – in its results, since would

be imposed from above in the proposals and poorly site-specific in the strategy.

Moreover, our express will was based on the principle of trying to maximize what is already existing: any present contribution that could be considered as a sufficiently thorough essay of the current and future state of the city must be taken into account. The study and consideration of these documents can represent a beneficial and a more aware starting point from which to base our own research, as well as working as confirmation or denial of this latter.

The time frame in which these documents are elaborated is an important turning point for the city – especially if those documents involve a conspicuous section of the inhabitants, as in the present case of Urbino – because it represents an highly significant moment of reflection at large.

The city, in a session of psychoanalysis, is asked to talk about itself, about its history, its present, its expectations. During this period, the citizens must identify the key issues about their urban living, argue about them and propose an action plan starting from these.

Our task was therefore quite simplified in this sense, as Urbino, in the period in which we started our research, was already *struggling* with the development of two key documents: the *Piano Strategico* and the *Piano di Gestione* of the *UNESCO* site .

Before introducing more in details the outcomes derived from these documents, it is extremely effective in terms of our research to clarify what are these tools and what are the objectives pursued by them. In order to elucidate and highlight the military importance they have had in the formulation of our planning thought.

*“Il Piano Strategico di una città e del suo territorio è un programma di politiche sociali, economiche e culturali e di interventi urbanistici costruito in modo partecipato e condiviso dagli abitanti del luogo e da tutte le forze sociali, economiche e culturali presenti in esso, per delineare il proprio futuro e realizzarlo, attraverso concrete e precise iniziative, nell’arco di alcuni anni.”*²¹⁶

The *Piano Strategico* aim is to sketch an hypothesis for the future of a city – as imagined and wished by its inhabitants – and the choices and actions it is necessary to undertake to achieve these goals.

216 *Il Piano Strategico di Urbino, Primo documento di lavoro*, Comune di Urbino, February 24th, 2010, p. 1;

“Le azioni riguardano i diversi aspetti della vita di una collettività: lo sviluppo economico e sociale, l’organizzazione e la difesa del territorio, la fornitura dei servizi e la loro qualità, la cultura.”²¹⁷

It is not an urban plan that rules and controls what to preserve or transform, neither it’s a plan whose goal is to create some infrastructural networks or finalized at planning huge public works. The goal of the *Piano Strategico* is to provide some guidelines for the development of social, economic and territorial cohesion, which can then be made through plans and specific projects – also including urban planning and public works – promoted by the municipality or by other organizations.

Thus, an essential part of this work consists in the individuation of the urban issues to evaluate within the plan; the weakness, strengths and opportunity of a city have to be spotted out through an accurate observation of the reality. At this purpose, the involvement not only of the main institutional, social and economical actors of the city, but also of common citizens in the process of elaboration is therefore fundamental, as it gives the opportunity to reconstruct a more complete and interested scenario by those that daily live the city.

“Per sua natura un Piano Strategico è un piano costruito dal basso, attraverso il contributo dei cittadini, delle forze sociali ed economiche, delle istituzioni che operano in una città o in un territorio. Questa procedura è necessaria per potere da un lato registrare e tener conto dei reali problemi di una collettività; dall’altro serve anche a responsabilizzare in modo diretto tutti i soggetti coinvolti nel Piano strategico. Le scelte compiute e le decisioni prese devono essere infatti condivise ed impegnare tutti alla loro attuazione.”²¹⁸

The first step of the *Piano Strategico* consists of a phase of listing of the needs and wishes expressed by the various parties involved in urban life and a first assessment of the actual incentive resulting from these proposals, their impact on the public interest and the possibility of reconciling these requests together. Particularly, the focus is declared to be on the expectations of the younger dwellers, to which the plan is intended.

After the first outdrawing of the main issue, these will be further discussed within the *tavoli di lavoro*, as to systematize the content of the received warnings and to elaborate, starting from these, a series of preliminary proposal that

217 ivi;

218 *Il Piano Strategico di Urbino, Primo documento di lavoro*, Comune di Urbino, February 24th, 2010, p. 1;

will then be subject to additional reviews and discussions.

“Si arriverà così a identificare le scelte più importanti da compiere, le loro priorità nel tempo, il percorso da compiere per attuarle. Questo costituirà il Piano Strategico. Si tratta di un processo di verifica e selezione progressiva “a imbuto”, cioè un processo che partendo da un grande ventaglio di ipotesi e suggerimenti arriva per gradi a fissare poche linee guida fondamentali e indicare un numero di azioni e progetti precisi e fattibili, entro un orizzonte temporale ben definito.”²¹⁹

The importance of a plan like the *Piano Strategico* is self-evident. It represents an exceptional moment for the population to take directly part in the decision that will be influencing the spaces they live for decades and thus the relevance and attention that must be given to the contents of this document are essential. Indeed, any further project or development concerning the city should take into account the existence of such a document, working as a series of key guidelines to facilitate and ensure most efficient results. In the case of Urbino the *Piano Strategico* is particularly relevant since it also contains another essential document, the *Piano di Gestione UNESCO*.

This latter is a document required by *UNESCO*, as to allow a site to be included among the protected heritages; it evaluates the characteristics of a place, including the processes and action that should be undertaken to preserve it in a proper manner.

The *Piano di Gestione* is elaborated by the responsible local authority – that in the case of Urbino is the Municipality itself – on certain fixed *UNESCO* criteria and common rules and ratified by the *Ministero per i Beni e le Attività Culturali* (Ministry for Cultural Heritages and Activities).

The *Piano di Gestione* goal is to establish what are the future intervention on the protected site, the order of priority among these and the possible costs of the operations. Moreover it should ensure the collaboration and the interest among all the subjects involved in the preservation of the heritage, as well as to indicate how this document could be linked with other planning tools that may exist.

“Appare evidente l’importanza di collocare il Piano di Gestione del Centro Storico di Urbino all’interno del Piano Strategico comunale. Altre città con

219 *Il Piano Strategico di Urbino, Primo documento di lavoro*, Comune di Urbino, February 24th, 2010, p. 2;

siti patrimonio mondiale (WH) hanno seguito la medesima strada, largamente condivisa dall'UNESCO, come confermano le recentissime Raccomandazioni per il Paesaggio Urbano Storico (HUL). Questa scelta permette di considerare il Patrimonio storico culturale da conservare come qualcosa di vivo, una risorsa capace di contribuire positivamente allo sviluppo economico, sociale e culturale dell'intero sistema urbano."²²⁰

220 *Il Piano Strategico di Urbino, Primo documento di lavoro, Comune di Urbino, February 24th, 2010, p. 2;*

2.1.4 Characteristics and results of a participated urban planning approach: i tavoli di lavoro

Six working groups, made of the main spokespeople of the city inhabitants and called tavoli di lavoro, are founded for the elaboration Piano Strategico. Their goal is to evaluate the question raised during the first phase of public consultation, in order to clarify the main issue of the city of Urbino and outline a series of probable strategies of intervention for the future. Among the indications and proposals elaborated by the tavoli di lavoro four points are particularly significant for our research. The first deals again with the concept of Urbino as a City-Campus and the needs and will of the students towards the spaces of the city. Actually, the second issue deals with the lack of diversification of the public places of Urbino, which impossibility to satisfy the expectations of a conspicuous part of its dwellers is causing an estrangement by these latters. The question that arises is: whether it is possible to combine the instances of the inhabitants with the requirements of the preservation of the heritage. The risk induced by a strategy of an integral preservation of the historical city centre could induce a condition of mummification of the places.

In the end we took in particular consideration one of the proposal elaborated by the tables, concerning the creation of the so called Laboratorio Aperto Diffuso (LAP). The suggestion regards the creation of a laboratory for interdisciplinary research and development, with the participation of all the institutions of education.

Approaching Urbino for the first time has been not easy. Beyond traditional urban analysis method – which effectively is not here questioned – the biggest issue was dealing with an extremely peculiar urban reality. Even if every city

has its own particularities, Urbino is probably more particular than others.

First of all, as previously discussed, what characterizes Urbino the most – together with the commistion of the historical heritage with young city users – is the slowed vital rhythm, nearer to a rural reality, rather than to a *City-Campus*. Therefore, the observation lapse in which to study the object must be dilated, in order to entirely catch the phenomenology of the city in his natural occurring. Urbino, compared to other urban reality, takes more time to be understood.

Moreover, apart from any kind of analysis, certain issues of a city can be better comprehended – and thus described and brought to the attention – just by those who were born in it or at least by those who lived there for a long while: its inhabitants are the most efficient receptors of a city.

However, Urbino is not new to a tradition of invitation of citizens to participate in the formulation of public policy and planning decisions. In particular, recently, for the elaboration of the *Piano Strategico* were involved not only the main institutional, socio-economic and cultural figures of the city, but also spokespeople of the citizens. The aim is declared: participation has seen as a tool to better spot issues and more efficiently purpose strategies of intervention.

“In sostanza la costruzione del Piano Strategico deve attivare ed organizzare un processo di ascolto delle opinioni, delle aspettative e delle proposte dei vari attori locali verificandole con la realtà delle situazioni esistenti e prevedibili ed i vincoli che essi pongono. Il confronto di idee, azioni, strategie dei diversi attori consente di mettere progressivamente a fuoco le proposte più solide e attuabili che sono anche largamente condivise e gli impegni che ne derivano sia collettivamente che per ciascun attore. Si tratta di un processo di verifica e selezione progressiva “a imbuto”, cioè che partendo da un grande ventaglio di ipotesi e suggerimenti arrivi a poche linee guida fondamentali e a un numero fattibile di azioni e progetti, entro un orizzonte temporale ben definito.”

In order to structure better the process of participation, after broader phase of invitation and listening of the population, six *tavoli di lavoro* – six small groups of spokespeople – were founded, each of them focusing on one of the emerged problems: accessibility and communication, housing, education and innovation, industrial production and craftsmanship, trade, cultural heritage environment and landscape.

The contribution these working groups gave to our research has been essential. The documents thus produced are a useful tool to verify the correctness of our first impressions of the city and to understand from the inside what were the issues the Urbinati felt as more stringent. Moreover, since the

formulation of the *Piano Strategico* is the main goal of these consultations, the documents produced are much more than simple indications coming from non-expert figures: they are the self-portrait of Urbino, the hopes and intentions of how the city saw itself in ten years.

Four main matters spotted by the groups of work are particularly relevant for our research and proposal:

- *Urbino as a City-Campus.* The city has always benefited from the presence of university students, either in terms of direct employment – due to the University and the *ERSU* – in rent from housing and trade activities implementation. On the one hand this has provided a reliable source of income for the population even in times of economic crisis, on the other, although the relationship between native dwellers and students is pretty peaceful, their own specific expectation about the city in many occasion went colliding. The students, in particular, which are accused of showing little respect for the spaces of the city, using them as commodities, have no way to develop a relationship of identification with the city: they needs are not taken into account;
- *The lack of diversification of public spaces.* The issue is strictly connected to the previous one: student's requirements for public places where to establish direct social interaction processes – where to meet, play, study, read, relax, socialize – even if already taken into consideration by the Administration, currently are not answered.

“Le situazioni di disagio che esistono e devono essere prese in attenta considerazione. La principale è prodotta dall'assenza di spazi ed attrezzature che costituiscano, aldilà di Piazza Repubblica e delle sue immediate adiacenze un punto di incontro e socializzazione tra gli studenti universitari, italiani e stranieri, e tra questi e i giovani della città e dei centri vicini. È un problema che è stato posto più volte nell'agenda della pubblica amministrazione [...] ma non ha poi mai avuto soluzione.”²²¹

Students and native dweller's cohabitation must not only be

221 *Il Piano Strategico di Urbino, Primo documento di lavoro*, Comune di Urbino, February 24th, 2012, p. 6;

peaceful, but it is desirable the two main users of the city – even if one is native and long-term oriented, while the other, at least in part, is temporary – work together synergistically, to return a more livable Urbino for all. The instances of contemporary living must be taken into account: the students, as well as the younger dwellers, have expectation towards the venues of the city that deserve consideration by the public Administration. Whether the public space is not the property of none, but the place where to feed the public sphere of the urban life, a *common space*, it has to meet the needs of those who live this space.

The cultural heritage. The issue of conciliating the need for contemporary spaces, suitable for nowadays way of living, with the matters of the cultural heritage preservation and the UNESCO site prescription is extremely delicate and strongly felt with groups of work:

“(Il Centro Storico di Urbino) ed al suo Piano di Gestione richiesto obbligatoriamente dall’UNESCO. Il ruolo del Centro Storico ha caratteristiche specifiche e fondamentali rispetto alla funzione educativa, alle attività culturali, all’offerta turistica, al ruolo commerciale che caratterizzano Urbino; di conseguenza la sua importanza per la strategia di sviluppo della città e del suo territorio è fondamentale e va esaminata in modo approfondito relativamente alle sue esigenze, ai suoi punti di forza e fragilità.”²²²

The risk induced by a strategy of an integral preservation of the historical city center, has previously broadly discussed, is to induce a condition of *mummification* of the places. Far away from becoming a picturesque open air museum of ancient relics, Urbino is a living city, whose enormous quality of the public spaces as to be seen as an incentive for the success of a better public life of its dwellers.

Laboratorio Aperto Permanente (LAP). This latter point here reported is different from the previous three, since it does not concern with a first identification of an issue, it instead represents a more mature moment of reflection. It is a proposal

222 *Il Piano Strategico di Urbino, Primo documento di lavoro*, Comune di Urbino, February 24th, 2012, p. 20;

of a probable scenario for Urbino, elaborated within the *tavolo Formazione e Innovazione* (Education and Innovation) by Alessandro Bogliolo²²³. The suggestion regards the creation of a laboratory for interdisciplinary research and development, with the participation of all the institutions of education. The *LAP* should work as a catalyst for the study guidance, the employability, the incubation of ideas, the creation of businesses, the funding findings. Among the possible scenarios of the *LAP* we spotted as particularly interesting the following.

- Chain of training:
 - Organization of events and exhibitions that provide for the cooperation between universities and schools;
 - Setting up of a media center, organized by universities and schools;
 - Promotion of extracurricular activities (studies assisted, afternoon workshops);
 - Orientation to the study;
- Research, development and entrepreneurship:
 - Incubator for start-up ideas coming from the University, providing regional and local expertise;
 - Arrangement of workspaces for start-ups;
- Art and design:
 - Creation of workshops that enable communication in all areas of creativity and encourages contamination – for example with foreign artists;

223 A. BOGLIOLO (Urbino, 1968) He received a degree in Electrical Engineering and the Ph.D. degree in Electrical Engineering and Computer Science from the University of Bologna. In 2002 he joined the University of Urbino, as Associate Professor. Since 2010 he's the coordinator of the Information Science and Technology Division of the Department of Mathematics, Physics and Informatics;

- Citizenship:
 - Creation of a civic laboratory, aimed to inform on the regulatory environment concerning citizenship and spaces for participatory monitoring of public utility services;
- Social life and participation:
 - Information spot were the available spaces are esposed and there is a tender for the assignment;
- Skills in the service territory:
 - Census of the land resources – including research groups, companies, professionals;
 - Creation of a time bank;
 - Fund-raising systems;

Moreover, according to the proposal, the *LAP* should be housed within a symbolic place of the city, able to grant the usability, visibility and accessibility of the urban condenser. As an example, is reported as an ideal for the *LAP* headquarters the *Data*.

In summary, the aim of this digression was to transmit how the research we have undertaken and the intervention strategy we developed are not born exclusively by the individual evaluation offered by the authors of this thesis referring to the situation of Urbino. The analysis and personal considerations were fundamental, but it was our express will be part of an existing stream of ideas, born from a longer term speech, led by those that really know Urbino and truly care for the outcomes of the city: its inhabitants. Our ideas and proposals have always been examined in conjunction with the opinions expressed by the *tavoli*, as representatives of the people of Urbino, in order to make sure that, at any stage, our project was not in danger of resulting as superimposed or poorly fitted to the urban reality at issue. The indications for the elaboration of the *Piano Strategico* were essential to give a more precise answer to the question: *what do people living in Urbino truly want?*

2.1.5 The resulting scenario

There are some projects expected to be soon completed in Urbino that will deeply affect the accessibility and the circulation inside the historic city centre. The construction of a shopping mall and some parking facilities in front of Porta Santa Lucia and the cable car landing in Santa Chiara area, will move the balance of the historic city centre toward East. All the consideration previously explained are here recollected in order to understand why Urbino is perfect for a intervention based on digital technology, and what were the main issues considered in the moment the project has been conceived.

At this point it is necessary to consider two projects that will be implemented in the next years that are going to deeply affect the circulation and the accessibility of the historical city centre.

In first place the shopping facilities and the parking area that will be opened facing Porta S. Lucia in the October of 2013.

According to the project, that will be implemented thanks to a private-public partnership, the new establishment will host 2500 smq of shopping facilities, 551 parking lots and the terminal of the suburban buses arriving in Urbino.

This operation will significantly reduce the volume of traffic landing in Borgo Mercatale. In first place all the bus terminals will be moved towards Santa Lucia, and the parking lot of the Borgo will be reduced just to the underground level, thus changing completely the vocation of the area, from a traffic end point to something different. At the same time, all the subjects that reach Urbino through buses (tourists, commuters, students) will now arrive on the other side of the city wall, enhancing the flow through via Bramante and

reducing the one on via Mazzini.²²⁴

The second project is the cable car landing in Santa Chiara area. The project consists in a cable car that links the area of Santa Chiara with the ex Fornace Volponi, where a new shopping mall and a parking lot will be built. Thus, another possibility will be to park the car again down to the valley in the East side and climb through the cable car. Right now the only active construction site is the *Cospe Srl* one in via S. Chiara: here it will be realized the landing station of the cable car coming from the Fornace (right now the work are stopped because of the discovery of some archeological ruins). There is no set date for the ending of the construction, as right now some capitals are missing. Near the cable car there are as well some ongoing works in order to restore the ex Convento of Santa Chiara, whose restoration will cost around 2.5 millions of euros. The cable car once implemented will start from the Fornace, have a first stop in the Consorzio Agrario and then land to the area of Santa Chiara, linking then two of the main parking areas in order to reach the historical centre²²⁵.

Those new projects will deeply affect the dynamics inside the historic city centre, moving the whole balance toward the East side, right now quite impermeable, and reaffirming the importance of some axes, like via Bramante.

Urbino's condition right now offers a lot of issues that define it as an emblematic case to operate with some network oriented actions:

- Its disconnection: the possibility to better observe social dynamics in the public space, to introduce some changes and immediately observe feedbacks;
- Its disconnection: as previously described Urbino due to the lack of a station, and its geographical features (roughness of the surrounding area), is not easy to reach. This condition preserved its beauty but at the same time it is a big problem in term of development: to solve this problem new infrastructures would be needed that would destroy the landscape and the historical and cultural heritage. In-visible infrastructures (digital communication technolo-

224 *Centro commercile Santa Lucia*, Gruppo Torelli Dottori, Urbino, 2013

225 D. LEONARDO, V. MAMMONE, E. VIETTONE, *Così cambierà il volto*, il Duca-to, 2011

gies) could help in defining new links, centralities and connections.

- Historic centre: reasoning in a network oriented way through points and invisible infrastructure is particularly significant in Urbino, where the real layer (the urban fabric) is dense and of absolute aesthetical quality and where every place is easily reachable within few minutes; moreover a feature of Urbino historic centre is the roughness: some place quite close each other are not visually connected, thus creating clusters of vital and not vital places; in this scenario it appears evident the lack of information among places and people,
- *UNESCO World Heritage Site*: possibility of living and not a dying heritage, as required, by *UNESCO*; this means creating actions (new uses, new dynamics) that enhance the liveability of the historic city centre;
- *UNESCO World Heritage Site*: the patronage of *UNESCO* requires certain types of intervention, almost invisible that maintain the integrity of the built urban landscape;
- Students: presence of some city-users that have different requirements toward the public spaces, necessity of a light re-design in order to the support young public activities, considering even the activities introduced by the use of new digital media;
- Students: presence of category of city users who do not show affection to the public space; possibility to foster the appropriation through some communication campaigns that informs about other people activities in the public spaces, and create new social ties;
- Economic: in this situation of crisis, even little centre as Urbino should pursue the possibility to enhance their services through the minimum investment possible. The project proposed is developed in time through different phases and the first ones have a minimum required investment.

The project is mainly adressed to students in order to create dynamics to in-

duce them to stay in Urbino after their studies; it should create as well new services for the inhabitants and new attractions for tourists, generating unexpected economic dynamics. In the future the strategy could be expanded in order to meet the needs of residents, including those who live in the neighboring villages.

Disconnection: the possibility to better observe social dynamics in the public space, to introduce some change and immediately observe feedbacks

Disconnection: difficult to reach. Light connection through communicating infrastructure is the best way to foster development without affecting the landscape and the historic heritage

Historic centre: dense historic fabric: possibility to reason through nodes and invisible connection and at the same time generate new physical dynamics

UNESCO World Heritage Site: promote actions that create a living and not mummified heritage

UNESCO World Heritage Site: limit to act with minimal and almost invisible intervention

Students: presence of some city-users that have different requirements toward the public spaces

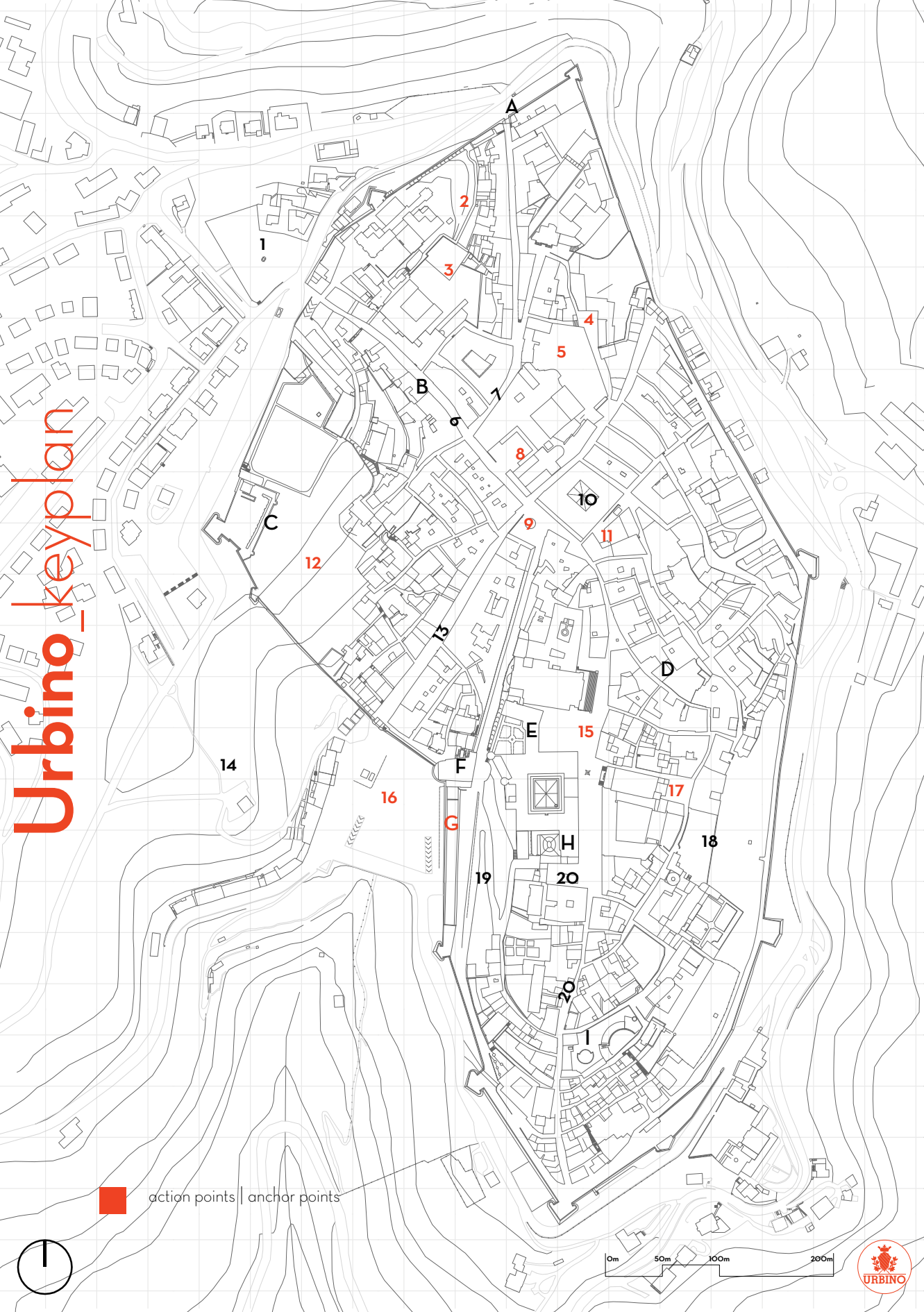
Students: presence of some city-users who do not show affection to the public space; possibility to foster the appropriation through digital technology

Economics: little investments, different phases, flexible and easy to adapt project

2.2

The discovery of underused urban spaces and of social life nodes

Urbino_keyplan



- A Porta S. Lucia
- B Casa di Raffaello
- C Fortezza
- D Museo della Città
- E Sala del Castellare
- F Teatro Raffaello
- G Data
- H Palazzo Ducale
- I Magistero
- 1 Piazzale Roma
- 2 Piero della Francesca
- 3 Court backyard
- 4 Piazza Sant' Andrea
- 5 botanical garden
- 6 via Raffaello
- 7 via Bramante
- 8 piazza S. Francesco
- 9 Piazza della Repubblica
- 10 courtyard collegio Raffaello
- 11 piazza near International college
- 12 Fortezza park
- 13 via Mazzini
- 14 le Vigne
- 15 Piazza Rinascimento
- 16 Borgo Mercatale
- 17 piazza Gherardi
- 18 Santa Chiara
- 19 Pincio
- 20 via Saffi

(figure 37) Urbino - maps of venues



2.2.1 **Traditional analysis: underused public open spaces and social life nodes.**

In the first part we try to trace what are the most used public and semi-public, open or closed places of the historic centre of Urbino, and, on the contrary, what are the open public spaces that are partly underused through some analysis coming from data produced by the municipality and on site observation.

Our analysis had the objective of identifying the public open underused spaces of Urbino whose public realm could be regenerated even by anchoring them, through an invisible infrastructure, to the fulcrums of the open public life.

The analysis, then, develops along two lines.

On the one hand we wonder about what public spaces, open or closed, public or semi-public, could be considered as the core of Urbino historic centre social life, becoming then the anchor of our invisible infrastructure. We considered the main categories of users (residents, commuters, students and tourists) and tried to distinguish the buildings that perform a function that can attract them and predict the movements that tend to do within the historical centre.

The second strand is rather to identify those public open spaces within the city centre that can be potential site of the regenerating intervention. To do this, we tried to identify which open public sites had particular aesthetic value, what were then the features and functions of the buildings facing them, identifying whether and where there were underutilized public buildings that could be converted to the new functions.

The analyses were conducted through visits to Urbino and using data that we obtained from municipal departments.

The first part of the analysis consists in a series of observations, the purpose of which was to trace precisely what could be the social life in Urbino according to the four main categories of users.

This part of the analysis was absolutely necessary because let us track what could be the *anchor* of our invisible infrastructure, places considered as the core the social life in the historic city centre, where it could be possible to inform about events going on reaching a large amount of city-users. On the other side it was a “negative analysis” that helped in understanding what places didn’t need any kind of intervention, and to understand the functioning of successful social life hotspots within Urbino.

To do this, we tried to map the main centres of cultural production (universities, libraries), the buildings that have historical value, thus representing possible touristic destinations. (**Culture spots**)

From these data and from direct observation on site we have traced the possible flows of the main categories of users, trying to predict, after reading the strategic plan which will be the changes in the latter as a result of the implementation of certain projects (such as parking in Santa Lucia (A) or the cable car in Santa Chiara (18)). **(Present and Forecasted Fluxes)**

We then resumed an analysis made by the students of the ISIA that, through a series of interviews and mental maps²²⁶ asked to the inhabitants to retrace those who were considered the most representative places of Urbino, and in which, therefore, for historical reasons or because these were cultural centres of social life, people tended to recognize as landmarks in the historic centre. **(Urbino and its dwellers)**

The final result of these series of analysis is some maps that are trying to trace the most attractive buildings for the various user profiles, crossed with the flows. These preliminary analyses will then be crossed with those coming from social networks data, in order to understand the social life nodes in Urbino historic centre.

The second line instead tries to define what might be the underutilized open spaces in which to intervene with our project. Considering the map of properties of the buildings, we have focused on all those open spaces that were faced by underused public buildings and could be thus converted to a new function. We tried to analyze each space, considering the function of the facing buildings, the permeability of the facades and the overall aesthetic quality, tracing therefore those that could potentially be the places of our intervention. We then crossed these data with the map of *Wi-Fi* hotspots in Urbino, questioning whether and how an intervention that is based on digital technologies, could take advantage of the existing infrastructure.

The synthesis of this part of the analysis is the definition of a number of places potentially suitable for an intervention.

Among these places we excluded those that we understood with the analysis previously conducted, and the next one through data coming from social networks, appear to be the hubs of social life in Urbino.

226 Mental maps are an outcome of the field of behavioral geography. The imagined maps are considered one of the first studies that intersected geographical settings with human action. The most prominent contribution and study of mental maps was in the writings of Kevin Lynch. In *The Image of the City*, Lynch used simple sketches of maps created from memory of an urban area to reveal five elements of the city; nodes, edges, districts, paths and landmarks.

Culture spots

urbino_cultural production poles

- UNIVERSITY
- ▨ UNIVERSITY RELATED
- THEATRE AND CINEFORUM
- EXHIBITION SPACES

(figure 38) Urbino - cultural production poles

0m 50m 100m 200m

<http://www.comuneurbino.ps.it/>, February 2013;
<http://www.urbino.it/>, February 2013

SOURCE



urbino_cultural heritage poles

- CIVIL CULTURAL BUILDING
- RELIGIOUS CULTURAL BUILDING
- MUSEUM

(figure 39) Urbino - cultural heritage poles

0m 50m 100m 200m

SOURCE

<http://www.comuneurbino.ps.it/>, February 2013.

<https://www.urbino.it/>, February 2013



Present and forecasted fluxes

PRESENT AND FORECASTED FLUXES

To consider what could be the principal movements of the main categories of city users within the Urbino historic centre, we used on site observations, and deduction coming from some interviews with member of the technical office and people.

Generally we decided to consider four main categories of city users.

The first category is students. The students are those who attend the university in Urbino. They could either live within the historical city centre, in the nearby settlements, in the Collegi, or even in the villages, but they tend to use the city centre mainly to go to the education facilities (universities, libraries, studying places).

The second categories are the inhabitants. The inhabitants are all those who live inside the wall of the city centre or in the nearby settlements, inside a virtual circle starting from the city centre with a radius of 3 km. They are people who use all the facilities offered inside the city centre (schools, commercial facilities, theatre, *cineforum*, exhibition places) and probably work there.

The commuters on the other side are all those who live within the municipality border but over the virtual radius of 3 km probably in nearby little village. They tend to use facilities located within the villages, but to go to the city centre, probably to enjoy their leisure time or to work.

Tourists, on the contrary are those who visit the city centre, for a short lapse of time, in order to enjoy the beauty of the landscape and the historical heritage.

To evaluate the future fluxes we have mainly considered two chief projects that will be soon implemented. The creation of a big parking lot nearby Porta Santa Lucia (A), that will be the arrival points of a series of buses lines that, right now, end in Borgo Mercatale (16). Thus future general fluxes will reconsider the importance of via Bramante (7), reducing on the contrary the fluxes along via Mazzini (13), considering that the parking lot in Borgo Mercatale (18) will be reduced and the buses coming from nearby villages will not arrive there anymore.

On the other side, there is the project to implement a cable railway that will link a parking lot placed in the East side with Santa Chiara (18), making the East side more permeable and accessible.

Watching each category it is then possible to make some considerations.

The students, in particular tend to access the historical city centre mainly from the Borgo Mercatale (16) in the South West or from Piazzale Roma (1) in the North, passing through via Raffaello (6), via Mazzini (13) and Piazza della Repubblica (9), towards the university core, in via Saffi (20). Other universities facilities are located in via Bramante (7).

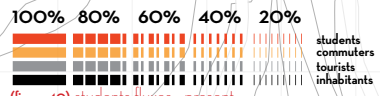
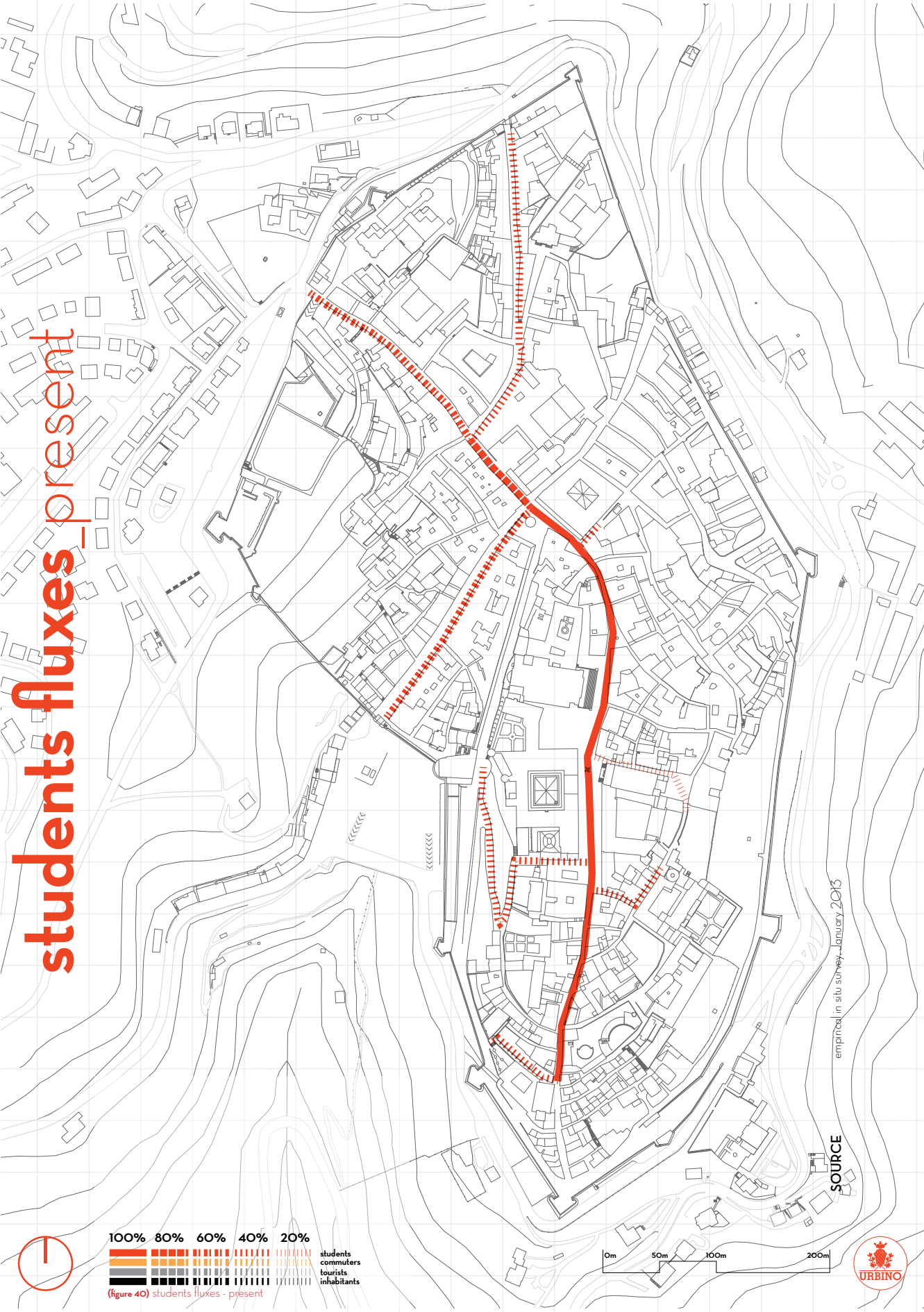
According to future plans, the buses will arrive in Porta Santa Lucia (A), thus reaffirming the importance of via Bramante (7) as one of the main students' axes.

Commuters nowadays tend to access the city centre mainly from Piazzale Roma (1), or from Borgo Mercatale (16) where it is easier to find parking facilities and in this place, there are the arrival stations of buses heading to nearby villages. Thus their experience in the city is mainly connected to leisure time: they tend to experience via Mazzini (13) and via Raffaello (6) ending in Piazza della Repubblica (9).

According to the future plans they will access the city even from Porta Lucia (A) and the cable railway ending in Santa Chiara (18), thus reinvigorating the fluxes toward the East in via Bramante (7).

Finally the inhabitants who mainly live in the settlements that are places in the West, nearby the wall, tend to enter into the historic centre through Piazzale Roma (1), and to go down toward Piazza della Repubblica (9) passing by via Raffaello (6). Future implementation will not affect seriously those fluxes as those people live mainly on the West part of the wall, thus will tend to access the historic centre still from Borgo Mercatale (16) and Piazzale Roma (1).

students fluxes - present



(figure 40) students fluxes - present

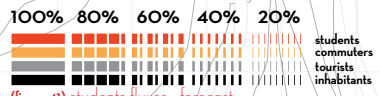
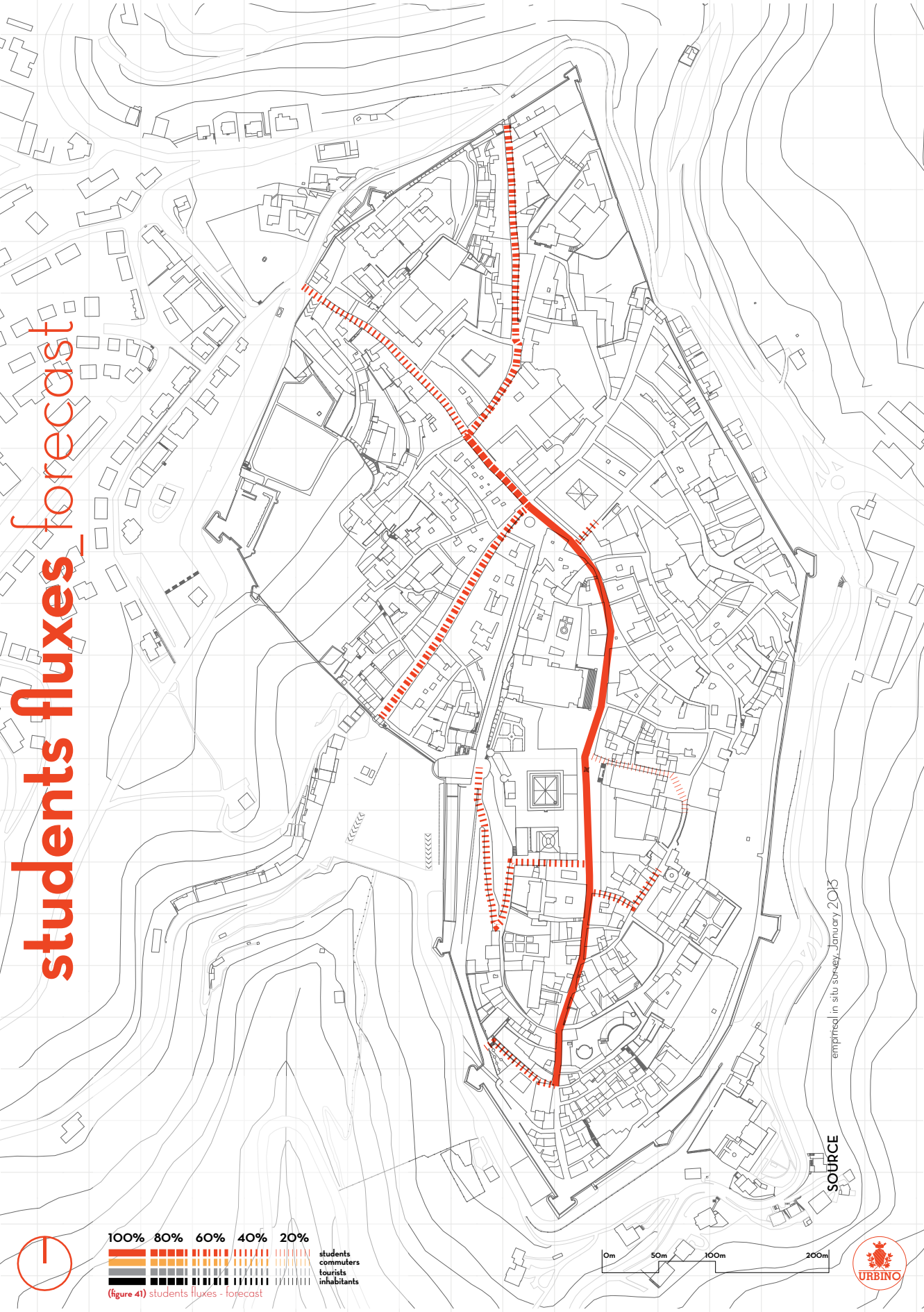


empirical in situ survey - January 2015

SOURCE



students fluxes - forecast



(figure 41) students fluxes - forecast

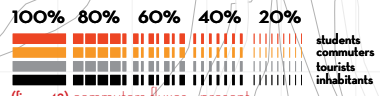
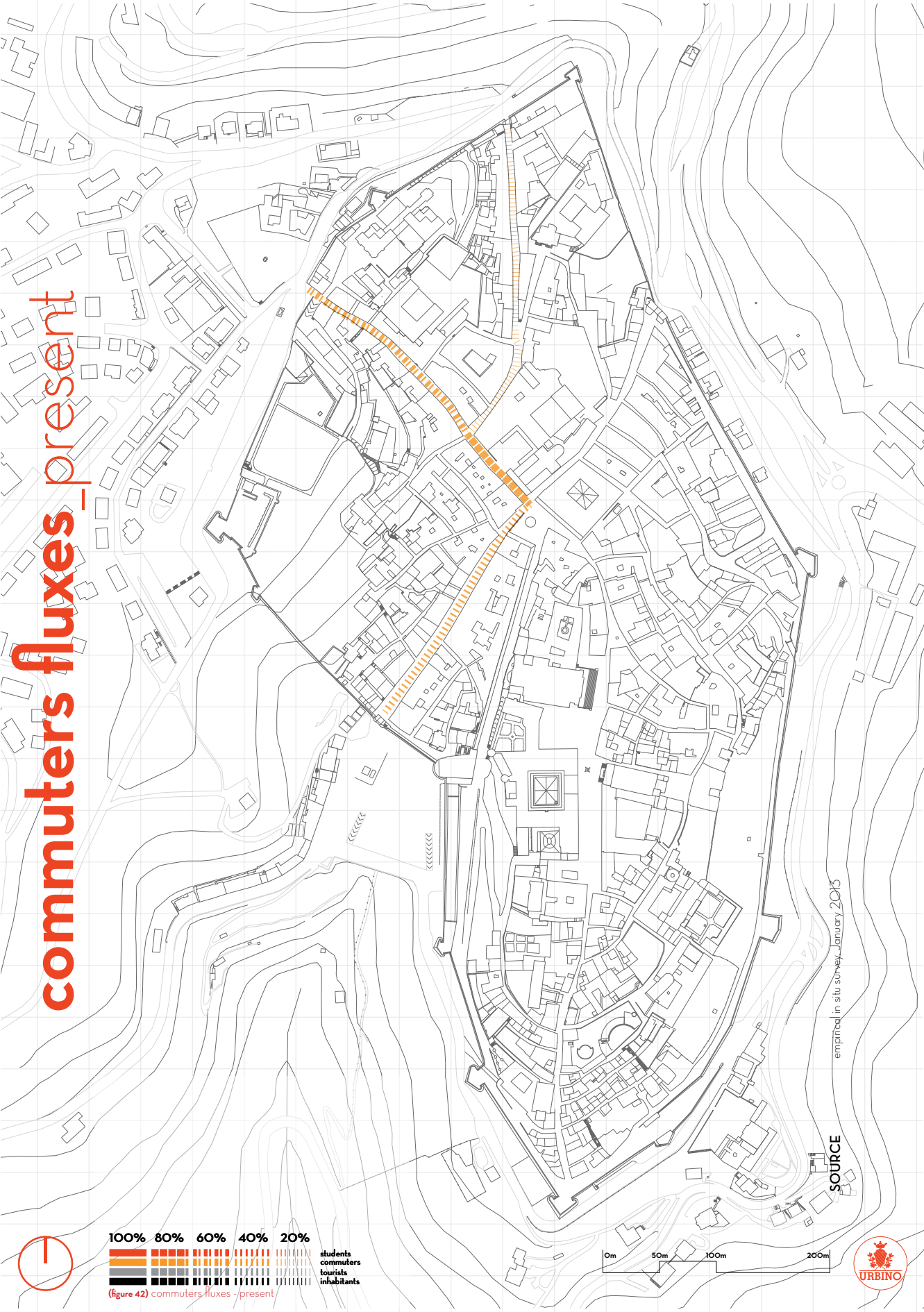


empirical in situ survey January 2016

SOURCE



commuters fluxes _ present



(figure 42) commuters fluxes - present

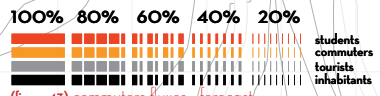
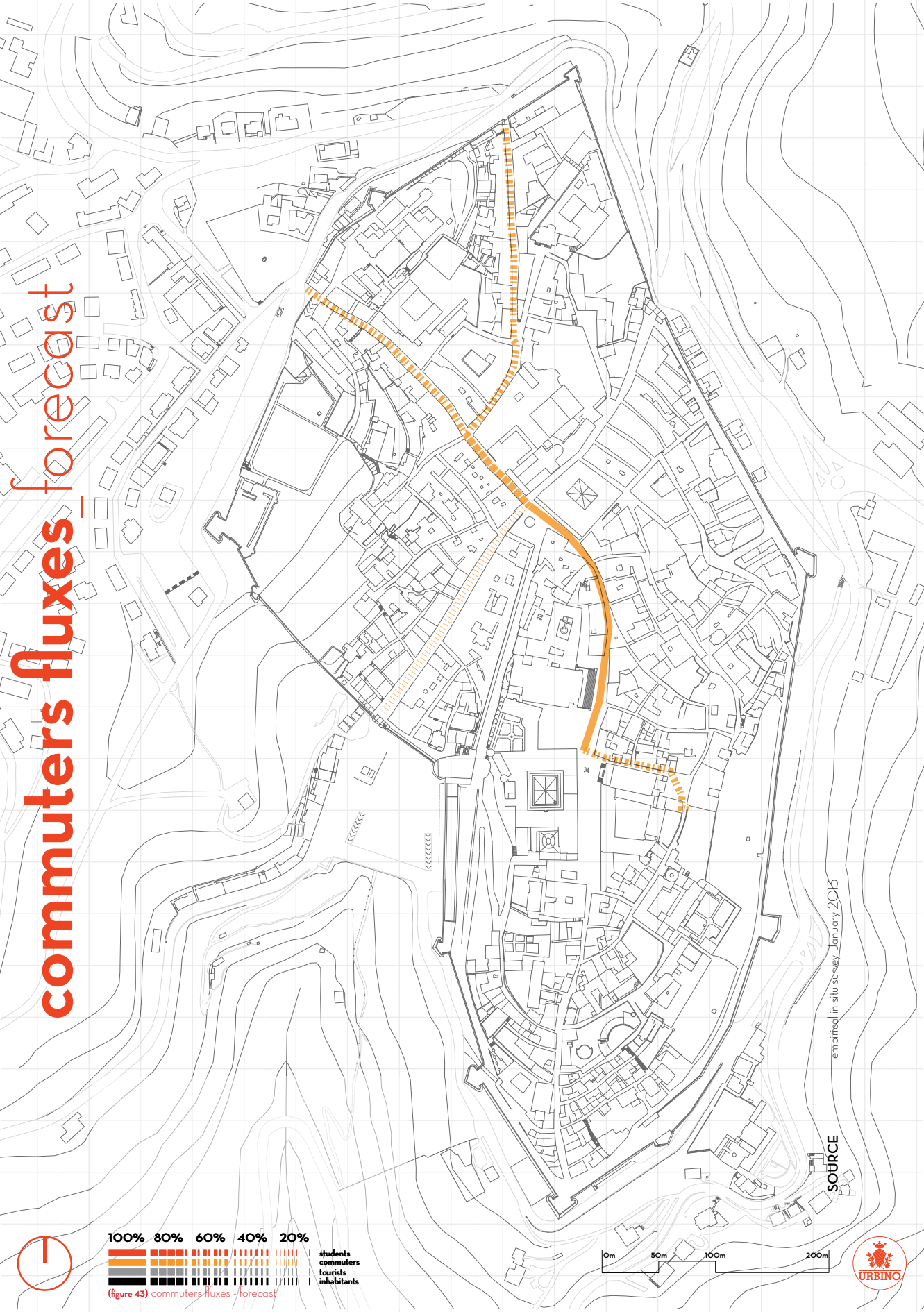


empirical in situ survey, January 2015

SOURCE



commuters fluxes - forecast



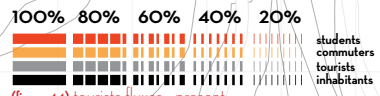
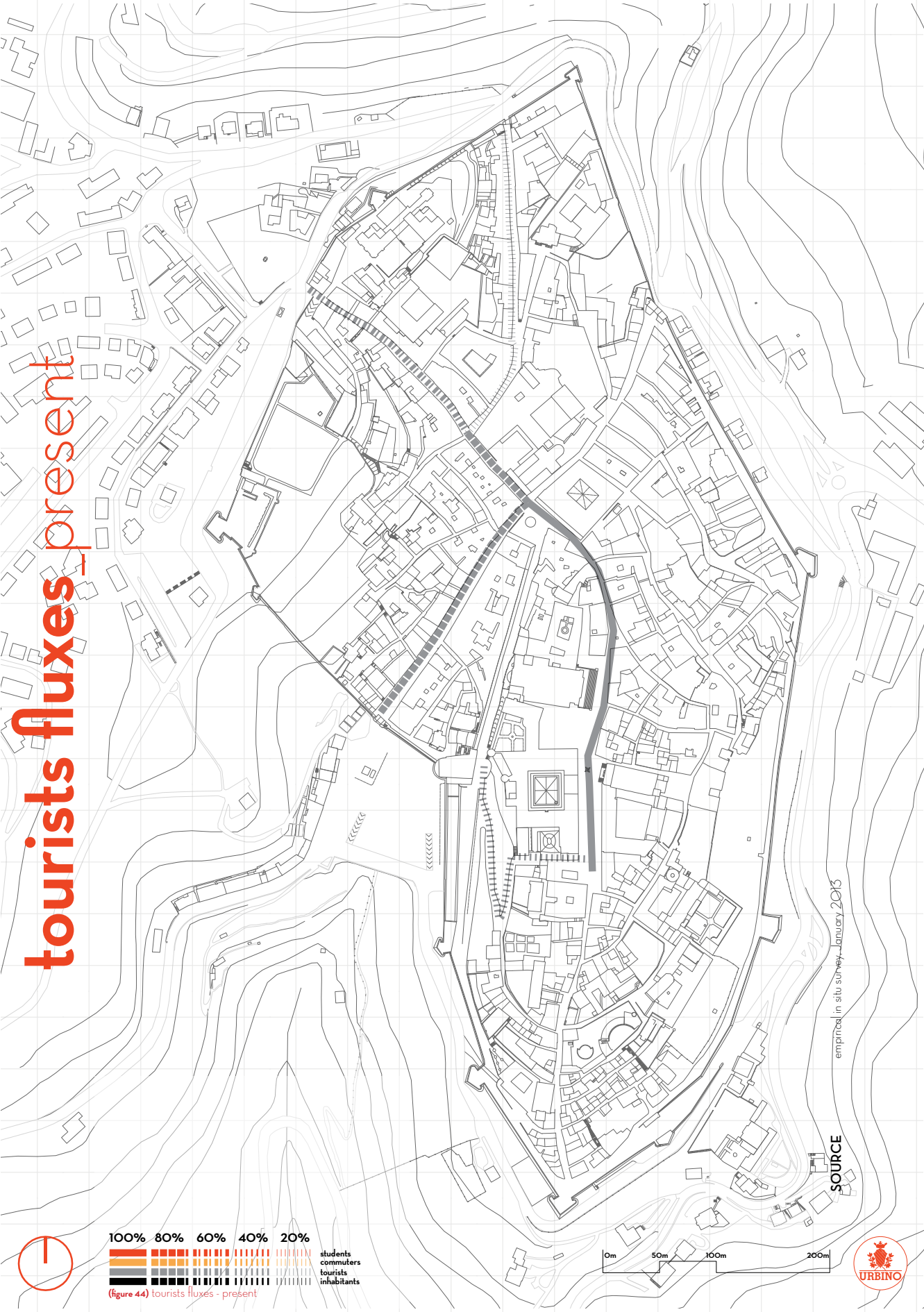
(figure 43) commuters fluxes - forecast

empirical in situ survey January 2016

SOURCE



tourists fluxes - present



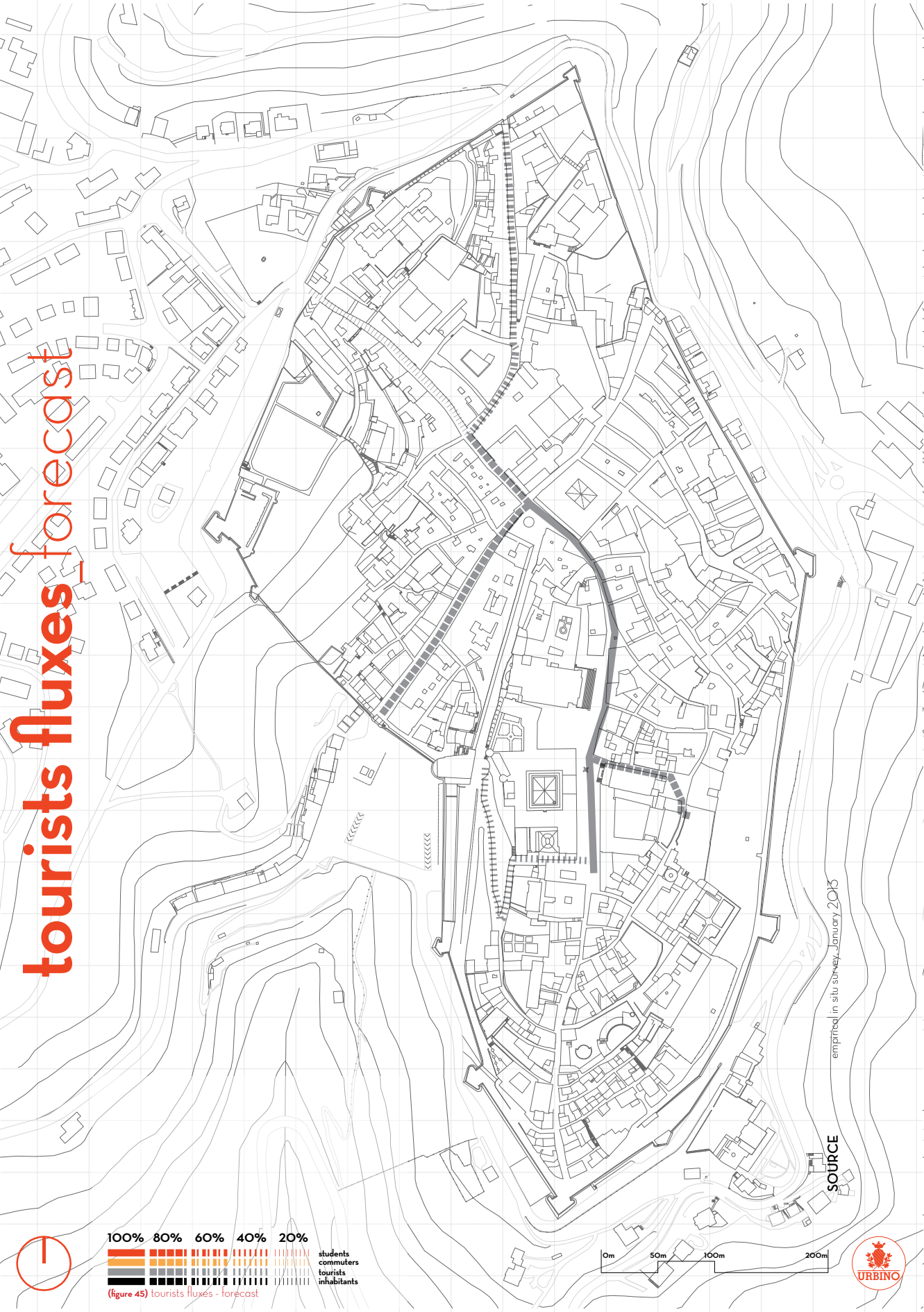
(figure 44) tourists fluxes - present

empirical in situ survey - January 2015

SOURCE



tourists fluxes forecast



100% 80% 60% 40% 20%



students
commuters
tourists
inhabitants

(figure 45) tourists fluxes - forecast

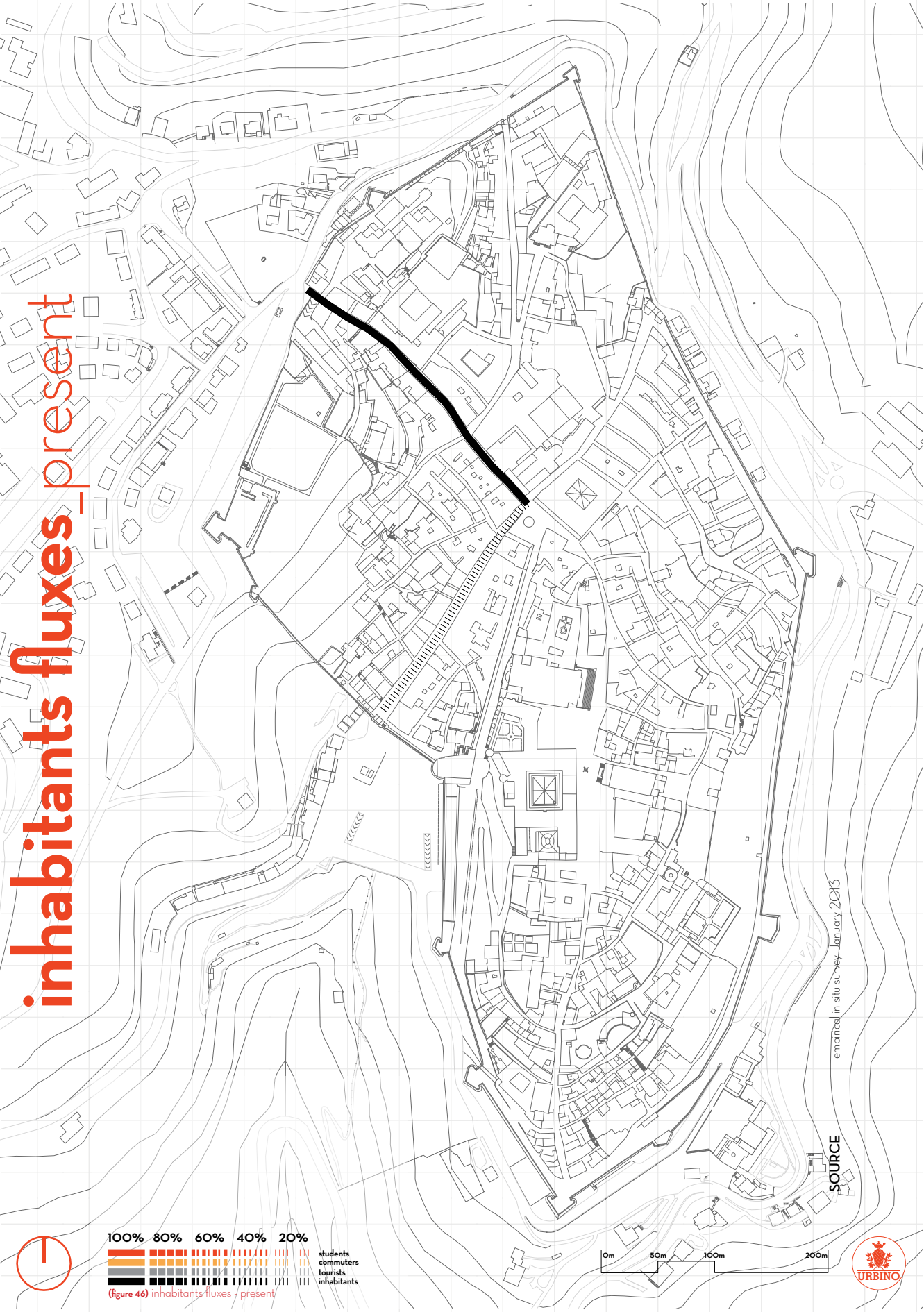


empirical in situ survey January 2016

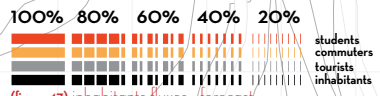
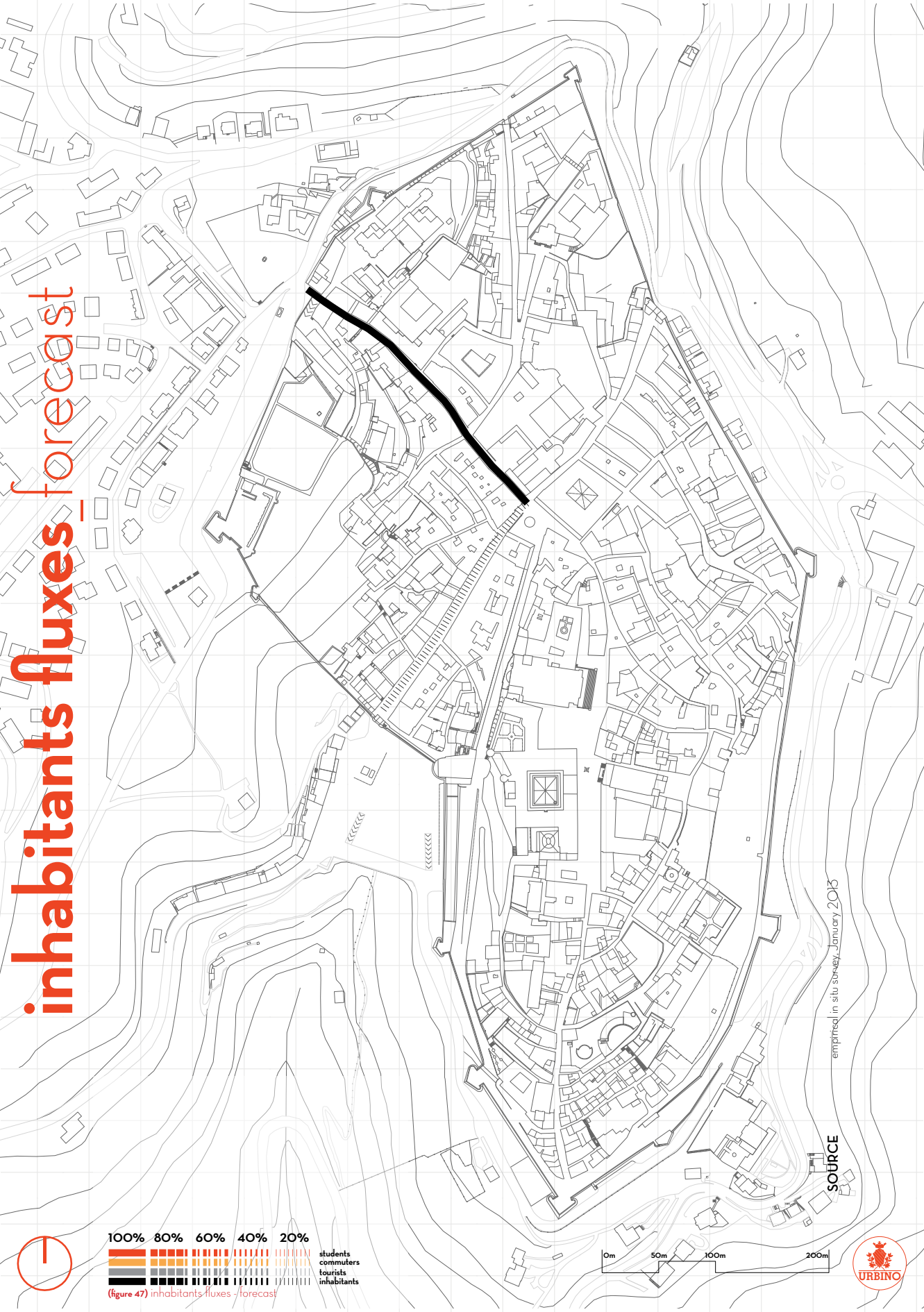
SOURCE



inhabitants fluxes - present



inhabitants fluxes - forecast



(figure 47) inhabitants fluxes - forecast

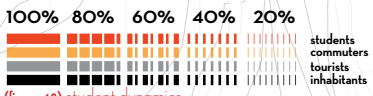
empirical in situ survey January 2016

SOURCE

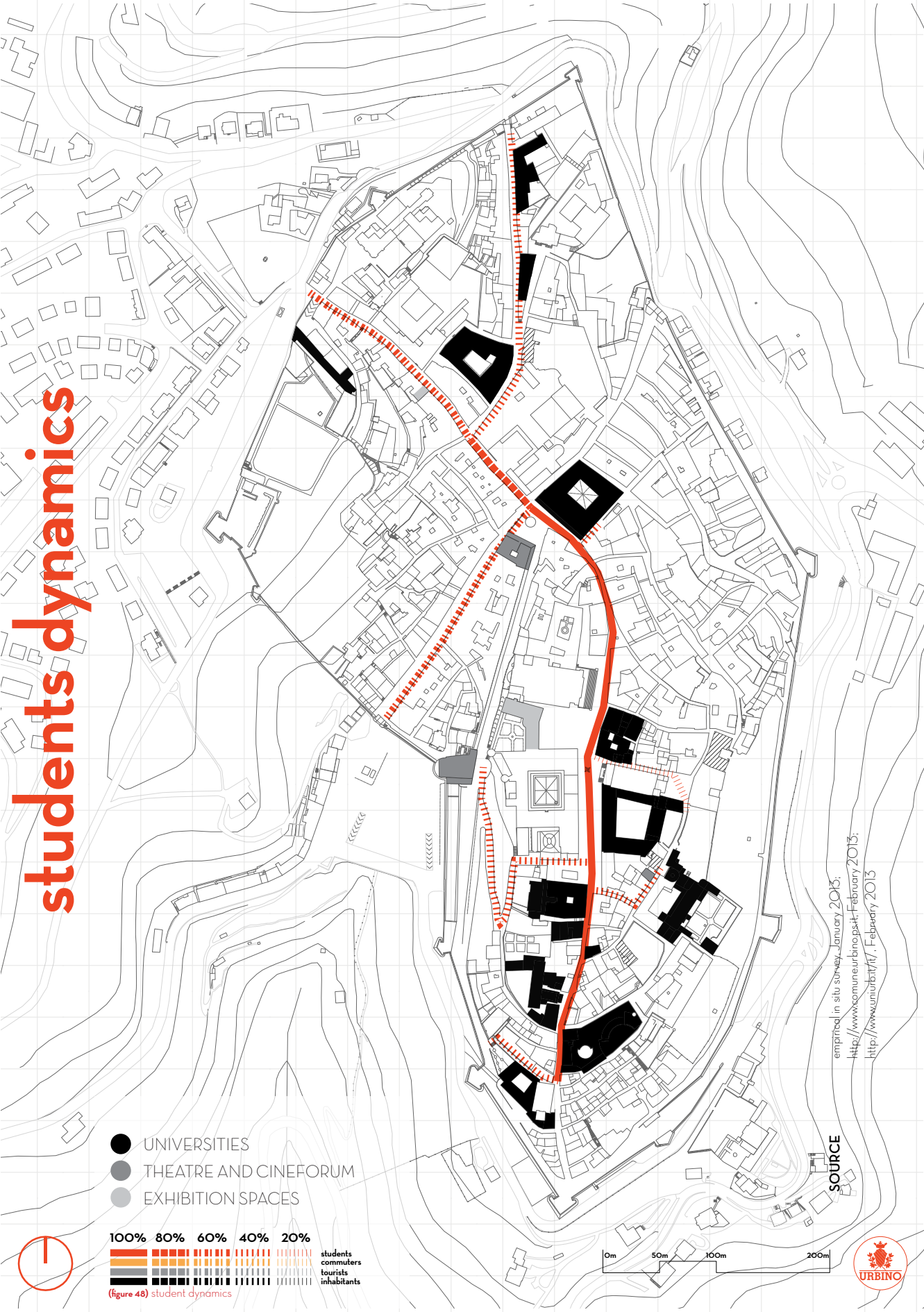


students dynamics

- UNIVERSITIES
- THEATRE AND CINEFORUM
- EXHIBITION SPACES



(figure 48) student dynamics



empirical in situ survey, January 2013;
<http://www.comuneurbino.psf.it/>, February 2013;
<http://www.urbino.it/>, February 2013

SOURCE



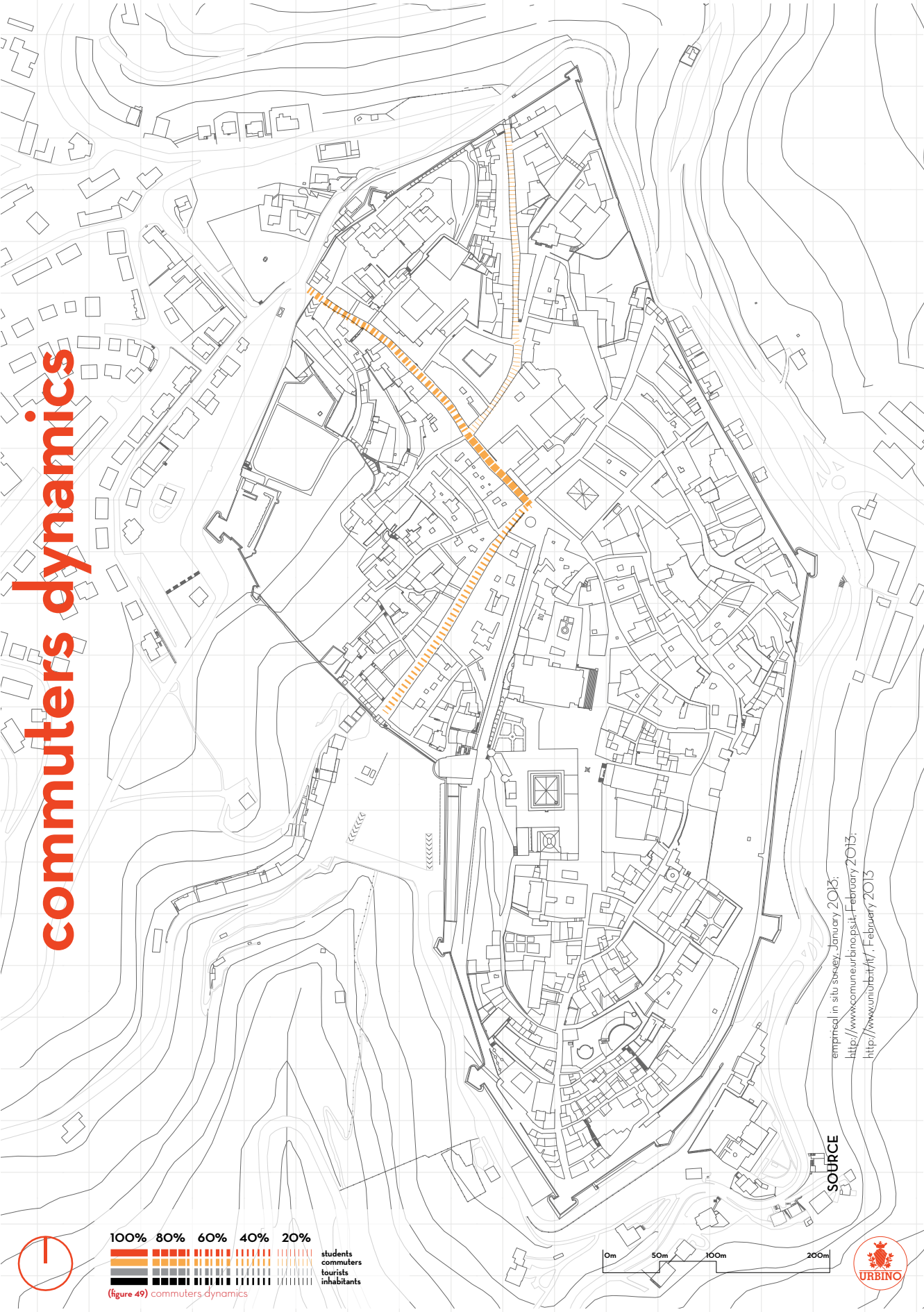
commuters dynamics



100% 80% 60% 40% 20%



(figure 49) commuters dynamics



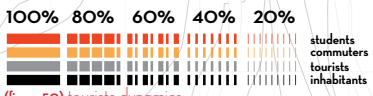
empirical in situ survey, January 2013;
<http://www.comuneurbino.ps.it>, February 2013;
<http://www.urbino47.it/>, February 2013

SOURCE



tourists dynamics

- UNIVERSITIES
- THEATRE AND CINEFORUM
- EXHIBITION SPACES



(figure 50) tourists dynamics



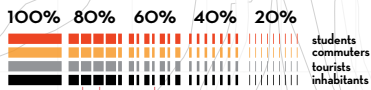
empirical in situ survey, January 2013;
<http://www.comuneurbino.psf.it>, February 2013;
<http://www.unurbino.it/>, February 2013

SOURCE



inhabitants dynamics

- MAIN COMMERCIAL FACILITIES
- THEATRE AND CINEFORUM
- EXHIBITION SPACES



(figure 51) inhabitants dynamics



empirical in situ survey, January 2013;
<http://www.comuneurbino.ps.it>, February 2013;
<http://www.urbino47.it/>, February 2013




SOURCE



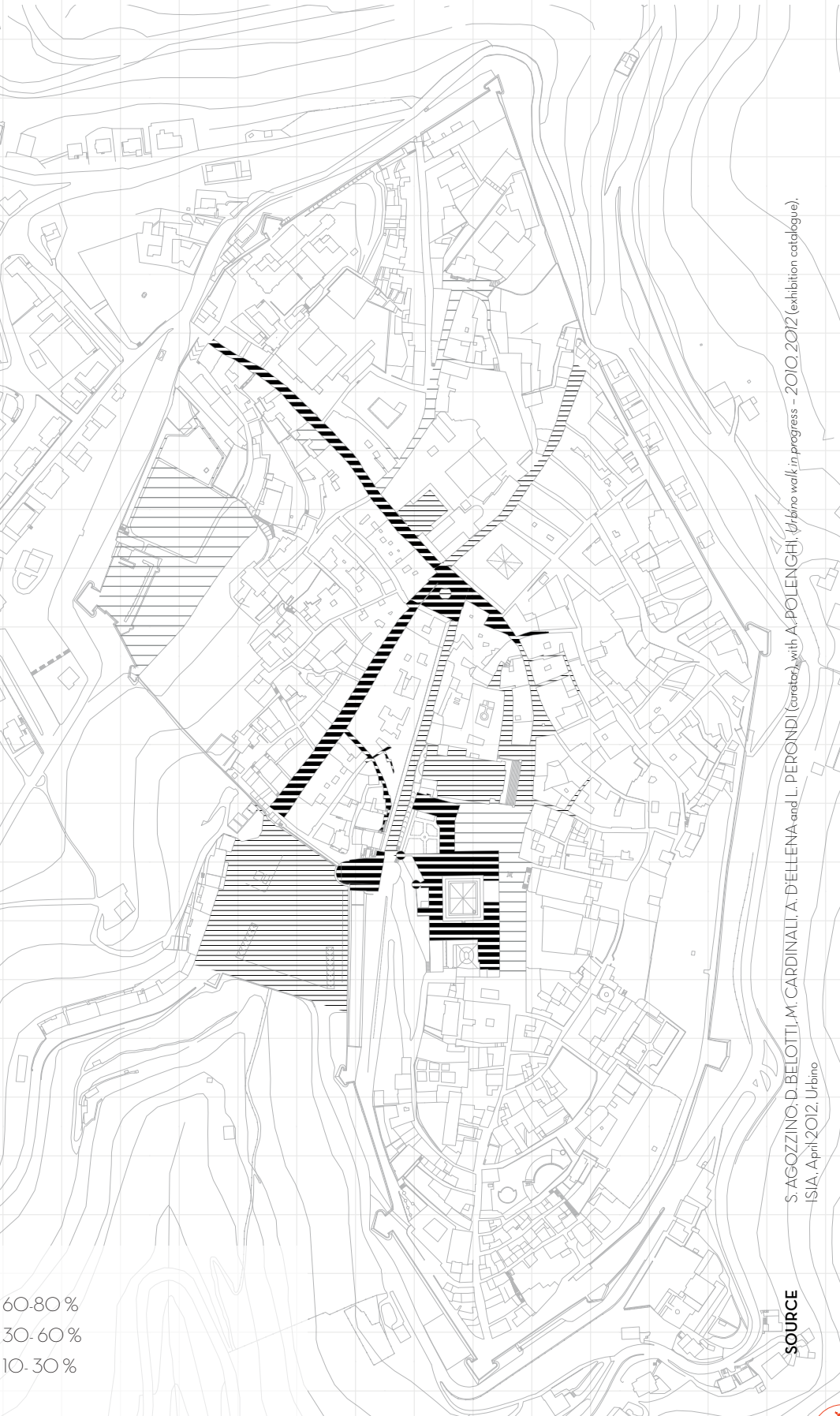
Urbino by its dwellers

recurrent elements_mental maps



-  60-80 %
-  30-60 %
-  10-30 %

(figure 52) recurrent elements - mental maps, percentages

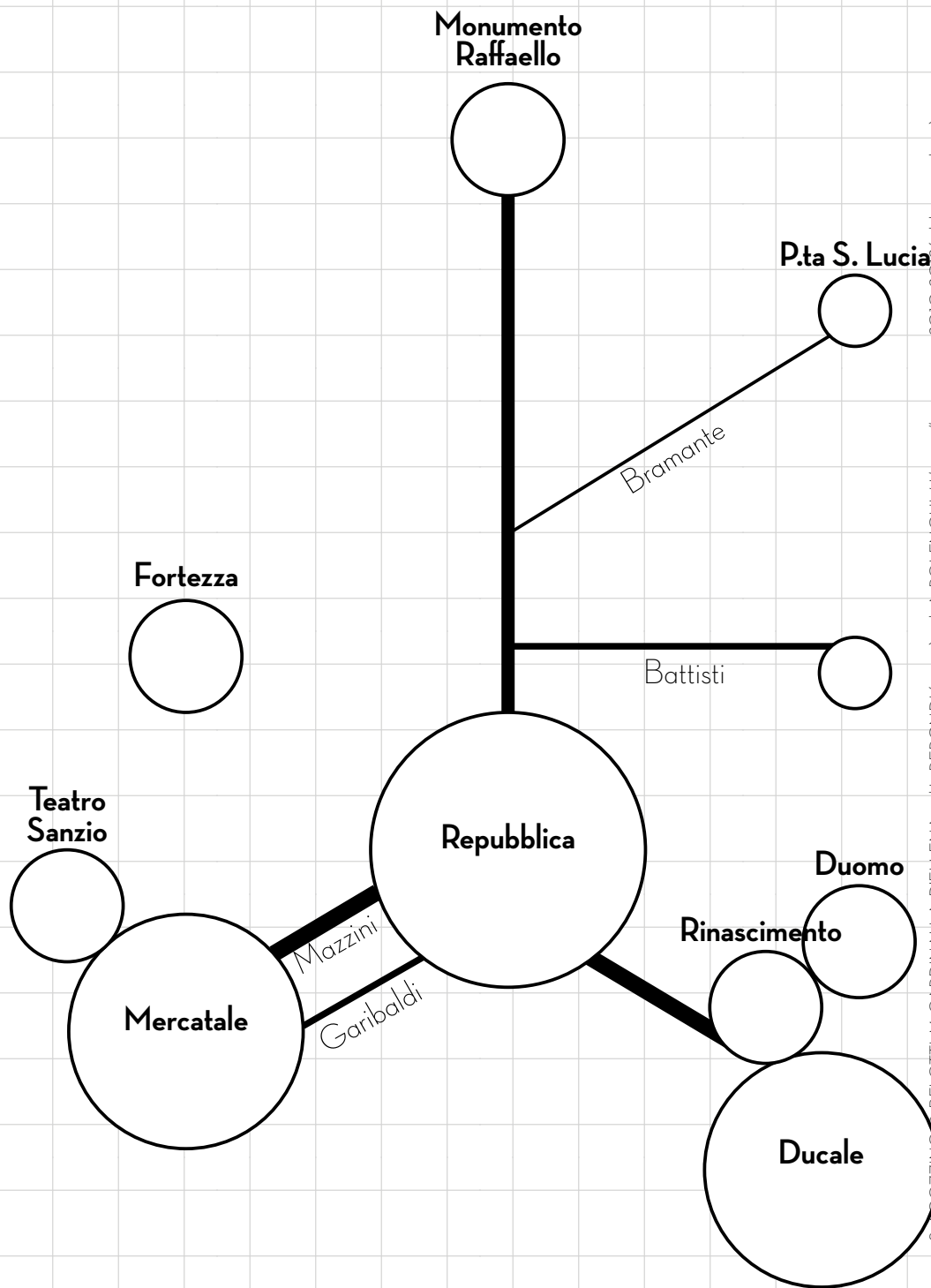


S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENCH (artistic), *Urbino walk, in progress - 2010, 2012* (exhibition catalogue), ISIA, April 2012, Urbino

SOURCE



recurrent elements_mental maps



(figure 53) recurrent elements - mental maps, main poles

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, Urbino walk in progress - 2010, 2012 (exhibition catalogue), ISIA, April 2012, Urbino

SOURCE

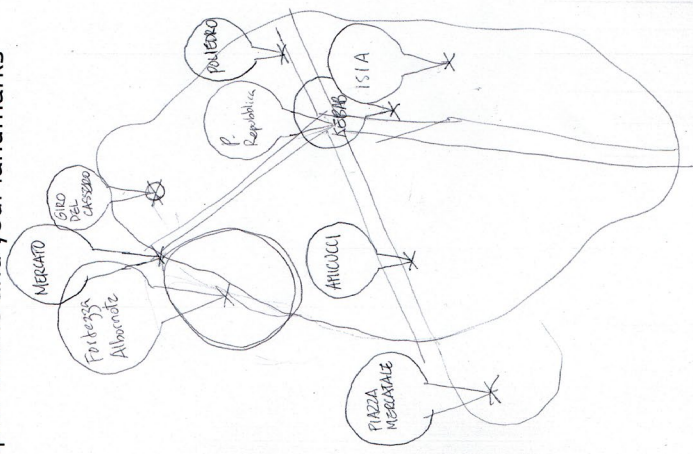
The mental maps were the results of an analysis lead by the students of the ISIA, overseen by Prof. Perondi and published in the book *Urbino walk in progress*²²⁷.

People, mainly students, were asked to draw a mental map about Urbino. Trying to represent their landmark, readily identifiable objects, which serve as external reference points. The two main represented landmark are two open public spaces (Borgo Mercatale (16), that is the landing point to all those who enter the city, and Piazza della Repubblica (9)) and a building (Palazzo Ducale (E)). The streets the most represented are via Mazzini (13) and via Saffi (20) in the stretch between Piazza della Repubblica (9) and Piazza Rinascimento (15).

schemes_ mental maps

(figure 54) schemes - mental maps

La tua mappa di Urbino e i tuoi punti di riferimento
 Your map of Urbino and your landmarks



Urbino
 walk in
 progress



Perché ti trovi a Urbino?
 Why are you in Urbino?
 Studying, you know...

F M

Età / Age 24

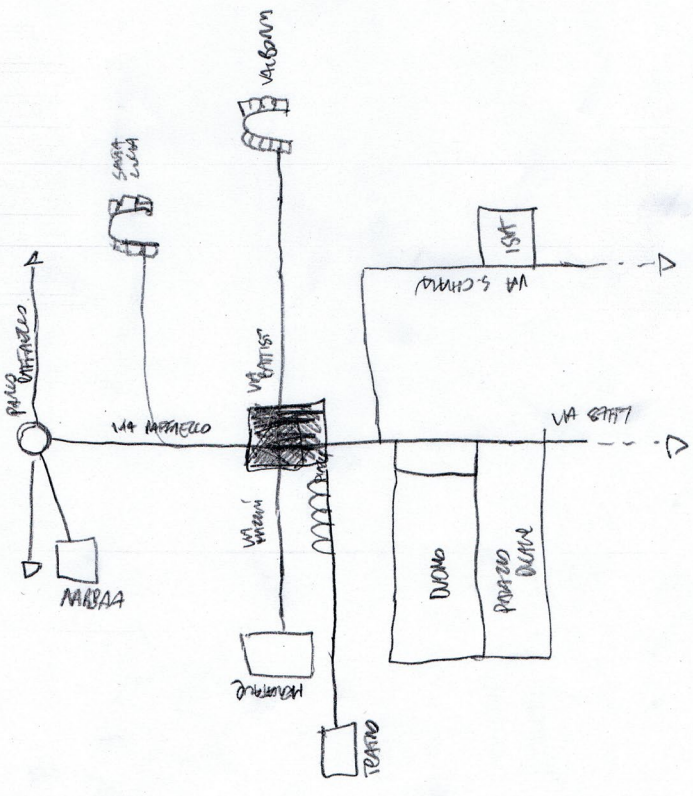
SOURCE

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walk in progress - 2010, 2012* (exhibition catalogue), ISIA, April 2012, Urbino






schemes_mental maps

La tua mappa di Urbino e i tuoi punti di riferimento
Your map of Urbino and your landmarks



Urbino
walk in progress

Perché ti trovi a Urbino?
Why are you in Urbino?

STUDIO

F M

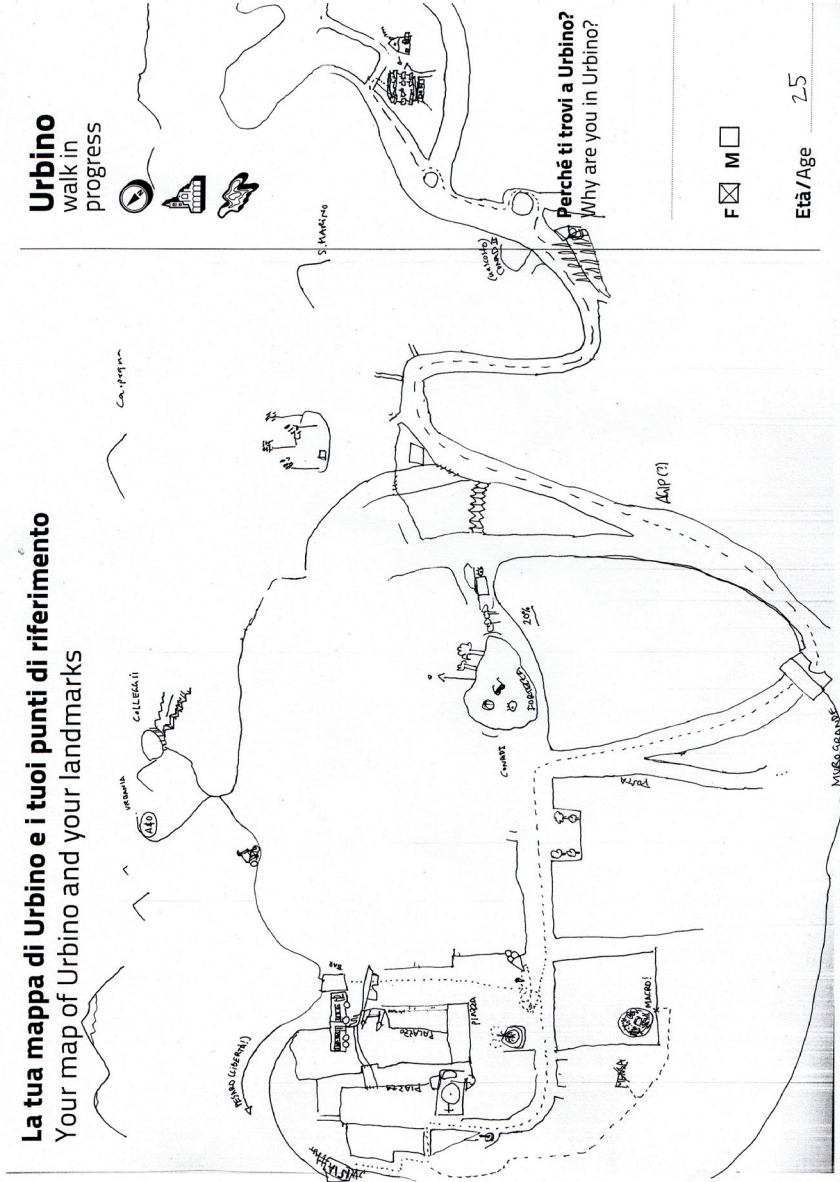
Età / Age 24

(figure 55) schemes - mental maps



schemes_mental maps

(figure 56) schemes - mental maps

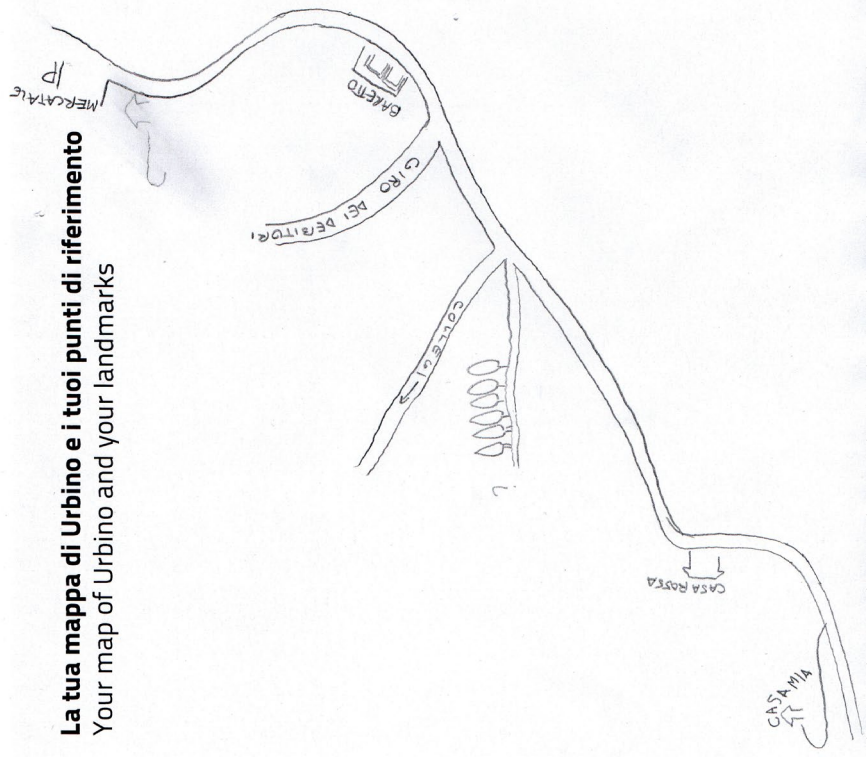


SOURCE

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walk in progress - 2010, 2012* (exhibition catalogue), ISIA, April 2012, Urbino

schemes_mental maps

La tua mappa di Urbino e i tuoi punti di riferimento
 Your map of Urbino and your landmarks



Urbino
 walk in
 progress



Perché ti trovi a Urbino?
 Why are you in Urbino?

SOURCE

F M

Età / Age 21

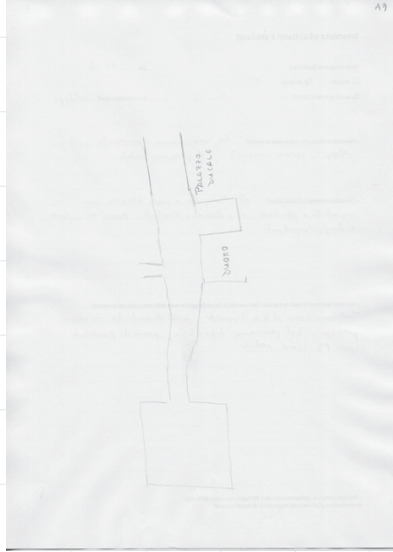
SOURCE

S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walk in progress - 2010, 2012* (exhibition catalogue), ISIA, April 2012, Urbino

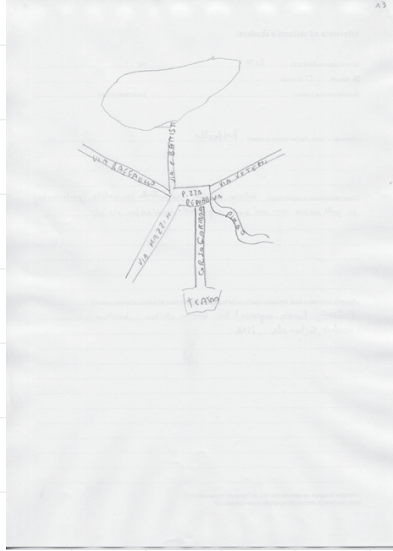


recurrent structures_mental maps

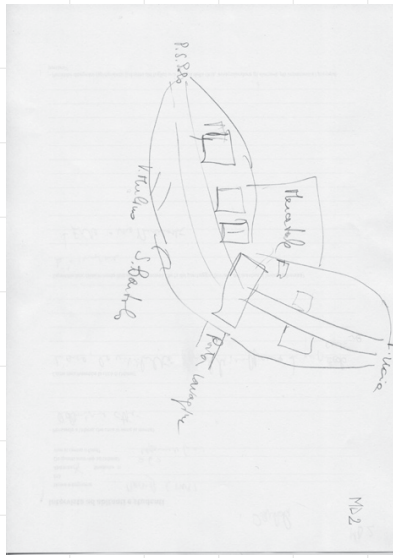
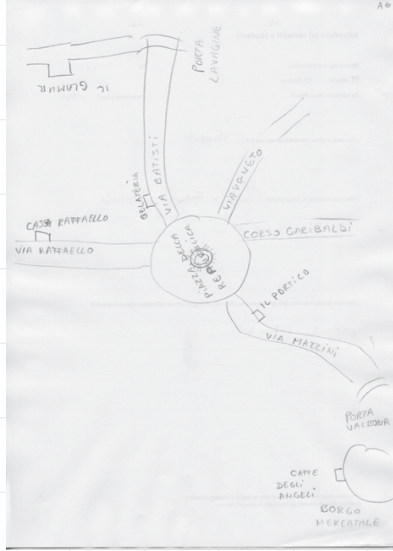
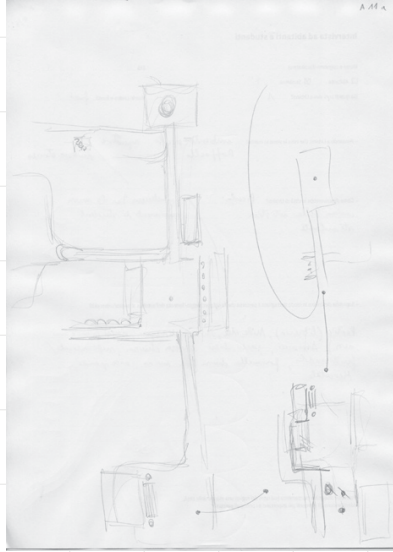
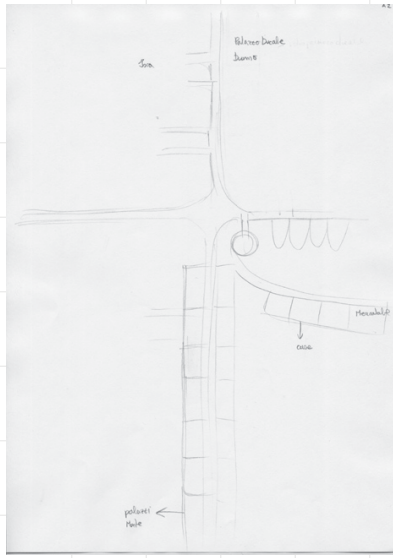
LINEAR

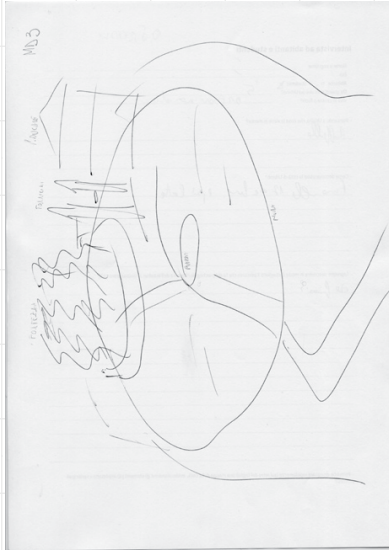
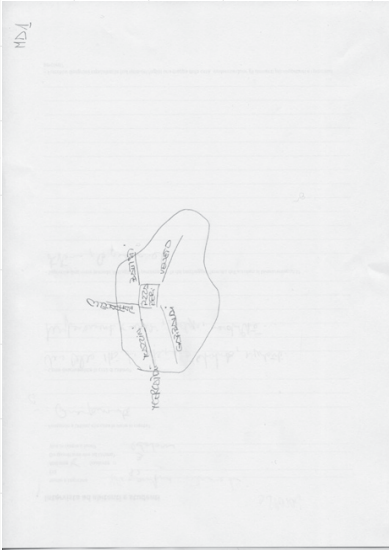
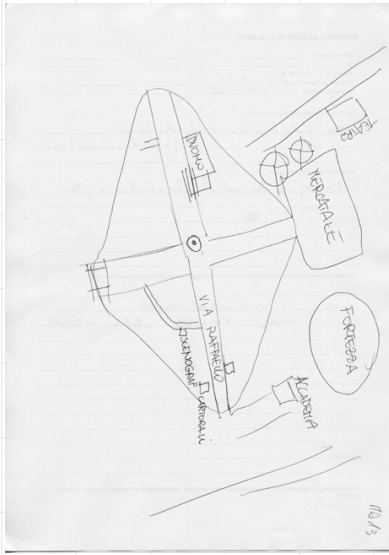
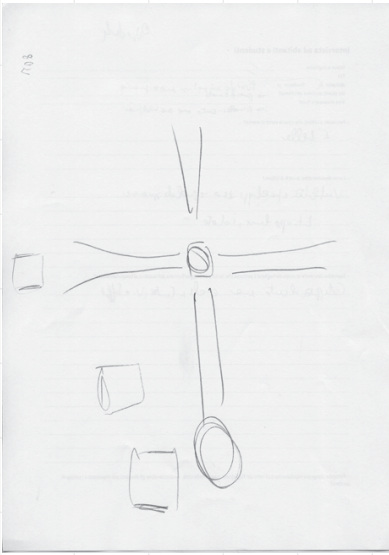


STAR-SHAPE



CROSS-SHAPE





S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, *Urbino walk in progress - 2010, 2012* (exhibition catalogue),
 ISIA, April 2012, Urbino

SOURCE

(figure 57) recurrent structure - mental maps



“What is the first thing that comes into your mind when you think of Urbino?”

PALAZZO DUCALE

MOVIDA NOTTURNA PACE
CITTÀ INCOMPIUTA SALITA
PORTICI CITTÀ STORICA
LA MIA RAGAZZA
AMBIENTE PICCOLO
ACQUILONE DUOMO
RAFFAELLO
PIAZZA DELLE ERBE BELLA
DISORGANIZZAZIONE
FUNZIONA BENE
UNIVERSITÀ E STUDENTI

(figure 58) mental association - answers to question

deduced by the interviews made within the project: S. AGOZZINO, D. BELOTTI, M. CARDINALI, A. DELLENA and L. PERONDI (curator), with A. POLENGHI, Urbino walk in progress - 2010, 2012 (exhibition catalogue), ISIA, April 2012, Urbino

SOURCE

Open public spaces analysis

In this part of the analysis we tried to look for the possible places of our intervention. They should be open public space that lack of a lively public realm. In order to select the places we, in first instance checked the Urbino historic centre Wi Fi map.

In fact there is an ongoing interesting project lead by the Faculty of Applied Informatics: Urbino Wireless Campus. (UWIC). It is an initiative of the University of Urbino for students, citizens and territory. UWIC offers a wireless network geographic coverage where students, residents and visitors of Urbino and the surrounding areas can have free access to a wide range of information services and communication. The wireless coverage in Urbino, in fact works with neutral access. This means that the communication infrastructure is not assigned to any telecommunication company and it is left free to independent managers.

Thus some information could be totally free, without the need to any registration, access or authentication. Compared to the traditional model in which the access network is managed by the service provider, the network model of neutral access has two main advantages: the first is the effective and full sharing of network access for the provision of services by different subjects; the second is the ability to implement policies of digital inclusion and e-democracy, providing minimum services in the public interest even free of charge, where there are specific reasons to do so (institutional information, relations with citizens, e-government, ...).

UWIC provides students with the University of Urbino direct access to all University services, effectively extending the university campus to the entire territory covered by the system, and provide free access to a wide range of information concerning natural resources and natural area under protection.

Our project wants to use the possibility of the neutral access providing information about people and events in the network of the selected spaces.

Thus it was necessary to consider the Wi-Fi infrastructure map.

The map of property outlines the public properties within the historical city centre: municipality, Demanio, university, church and Ersu, to understand all the public and semi-public building and open spaces that could be considered. Among the municipality owned building some are totally underused, waiting for a restoration, or just for a new use. The map of underused buildings tries to look for those cases, identifying the Fortezza (C), some little rooms facing Piazza S. Andrea (4) and the ex-court and a building facing Piazza Piazza Gherardi (17).

The most interesting open spaces were analysed considering the functions of the buildings facing them, the permeability of the facades, the access and the general circulation, and the possible presence of underused buildings facing them.

urbino_wi-fi coverage areas map

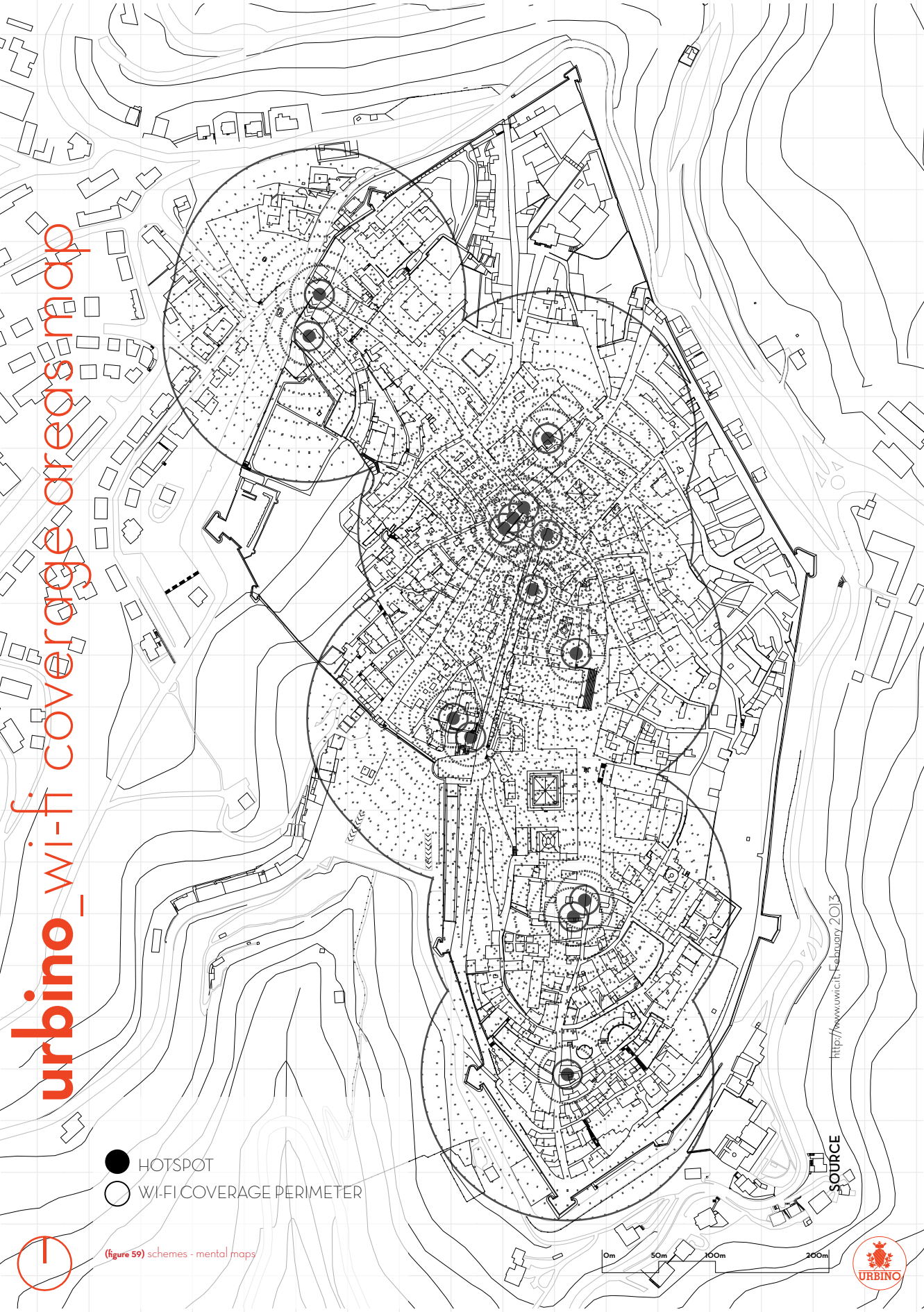
- HOTSPOT
- WI-FI COVERAGE PERIMETER

(figure 59) schemes - mental maps



<http://www.urbit.it>, February 2013

SOURCE



urbino_map of properties

- MUNICIPALITY, REAL ESTATE
- ▨ MUNICIPALITY, OPEN AREA
- CURIA, REAL ESTATE
- ▨ CURIA, OPEN AREA
- DEMANIO, REAL ESTATE
- ▨ DEMANIO, OPEN AREA
- UNIVERSITY, REAL ESTATE
- ▨ UNIVERSITY, OPEN AREA
- ERSU, REAL ESTATE
- ▨ ERSU, OPEN AREA

(figure 60) schemes - mental maps

Documents and information provided by the Urbino Ufficio Tecnico (Technical Office), Comune di Urbino, January 2013

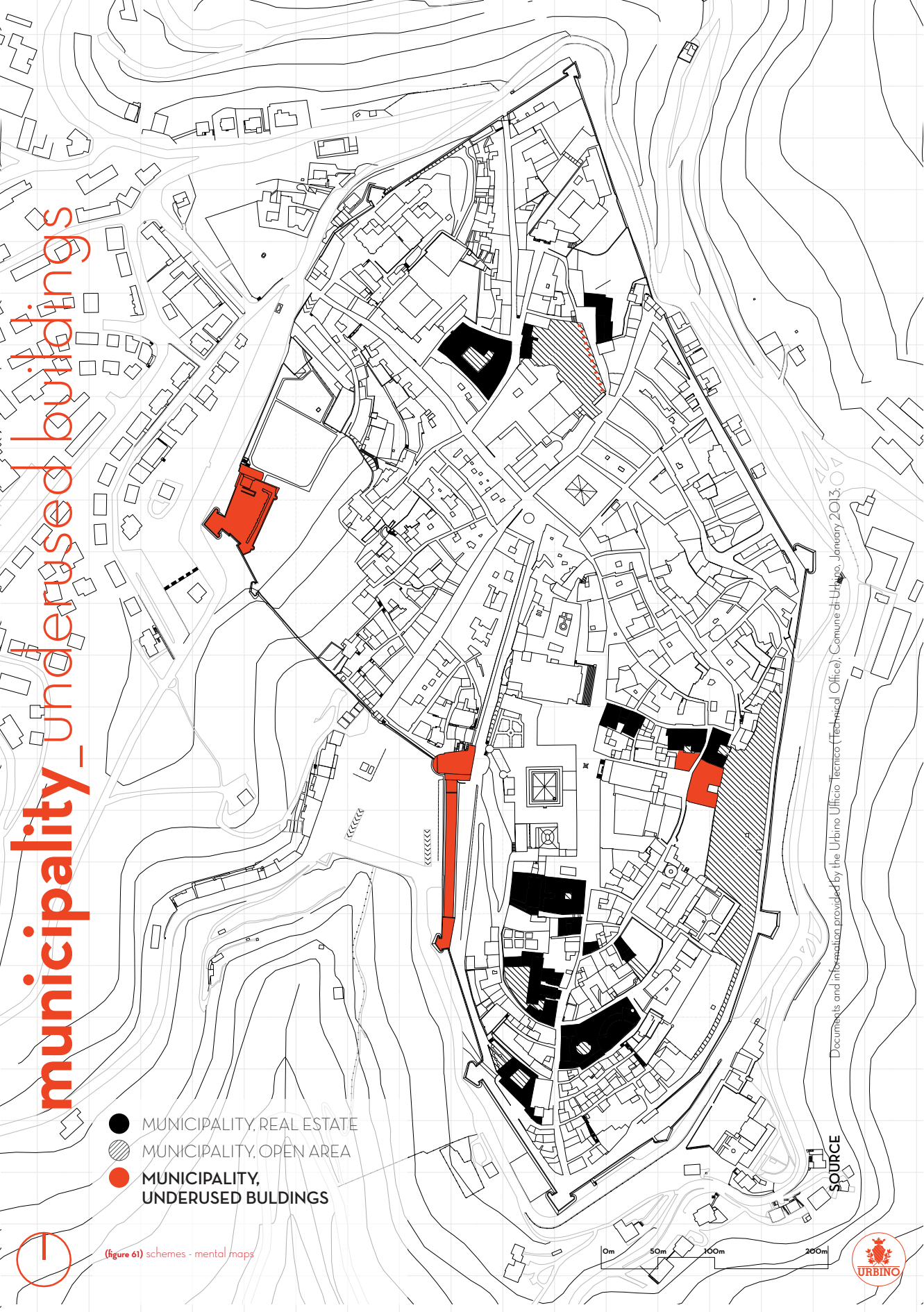
SOURCE

0m 50m 100m 200m



municipality_ underused buildings

- MUNICIPALITY, REAL ESTATE
- ▨ MUNICIPALITY, OPEN AREA
- MUNICIPALITY, UNDERUSED BULDINGS



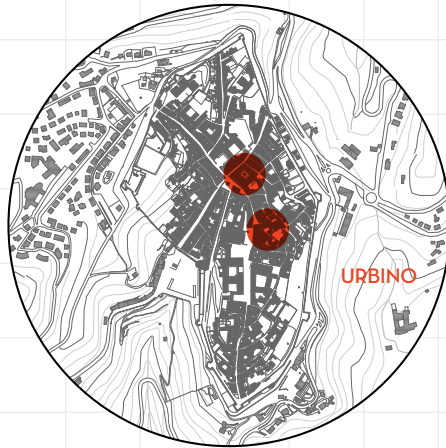
(figure 61) schemes - mental maps

Documents and information provided by the Urbino Ufficio tecnico (technical Office), Comune di Urbino, January 2013.

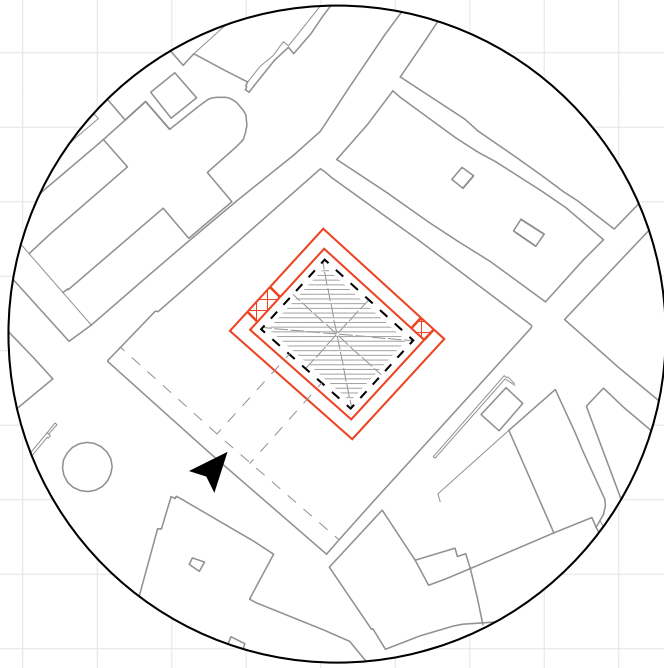
SOURCE



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ◌ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊖ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ⌵ GATE
- ENTRANCE



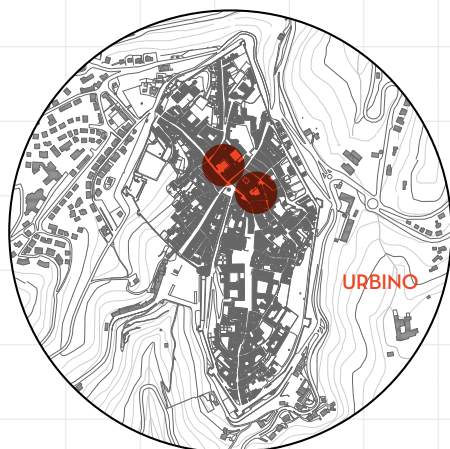
empirical in situ survey, January 2013

SOURCE

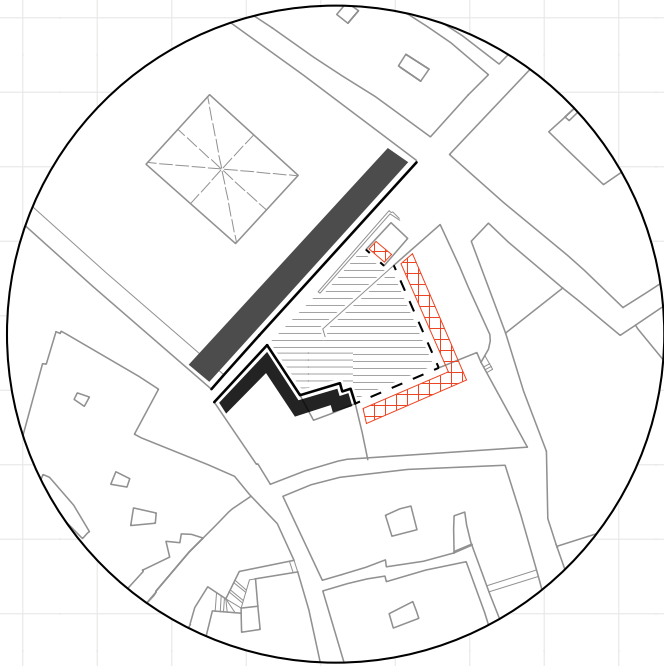
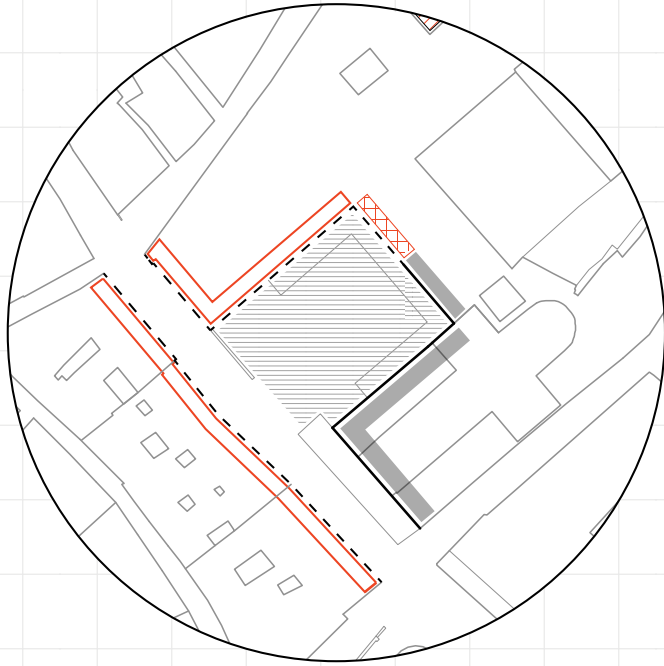
(figure 62) urbino - open public spaces analysis



urbino_open public spaces analysis



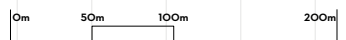
- OPEN AREA ANALYZED
- ◌ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊕ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ⌵ GATE
- ENTRANCE



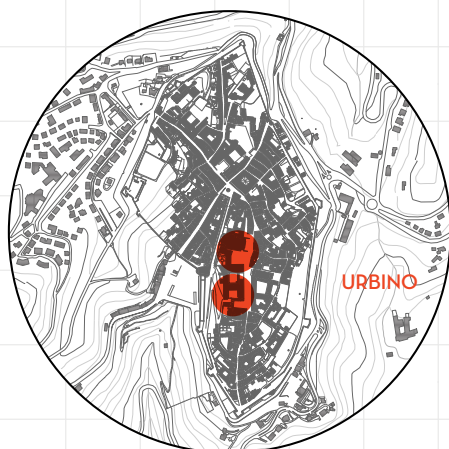
empirical in situ survey, January 2013

SOURCE

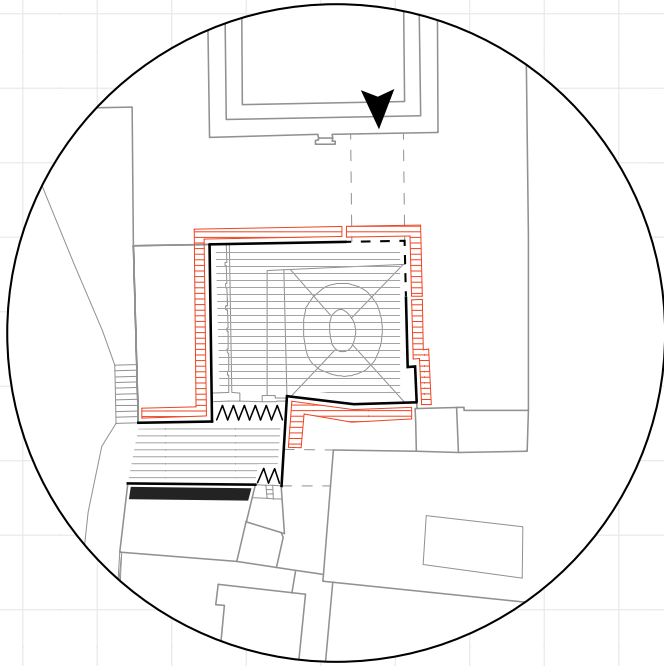
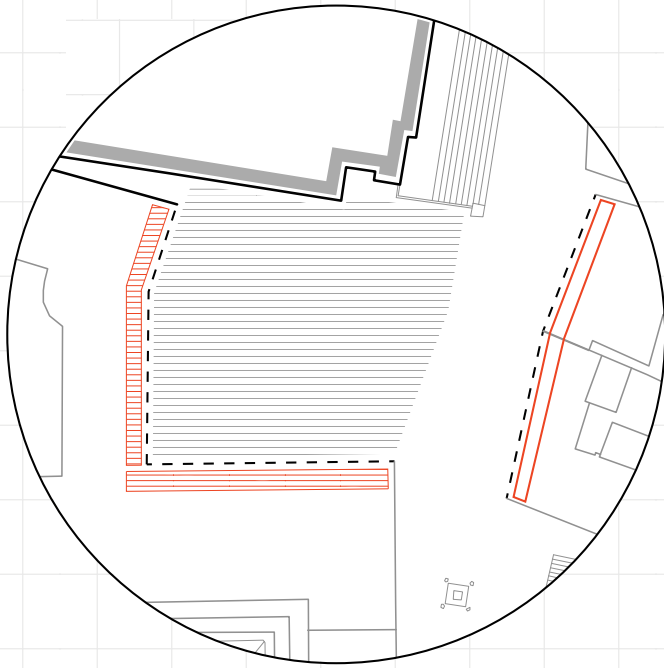
(figure 63) Urbino - open public spaces analysis



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ▨ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊕ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ⌵ GATE
- ENTRANCE



(figure 64) Urbino - open public spaces analysis

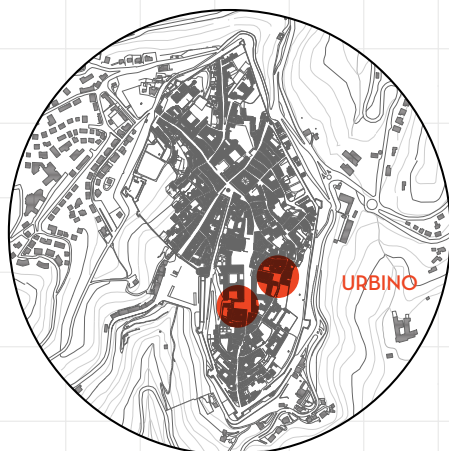
0m 50m 100m 200m

empirical in situ survey, January 2013

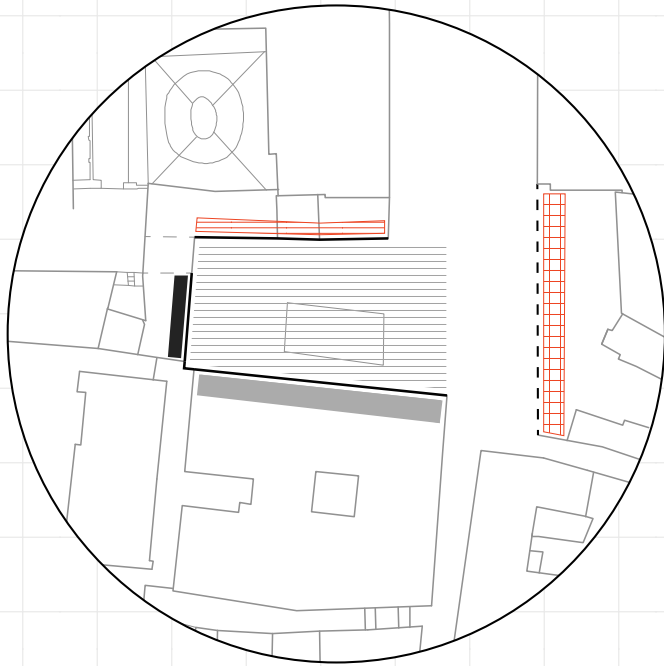
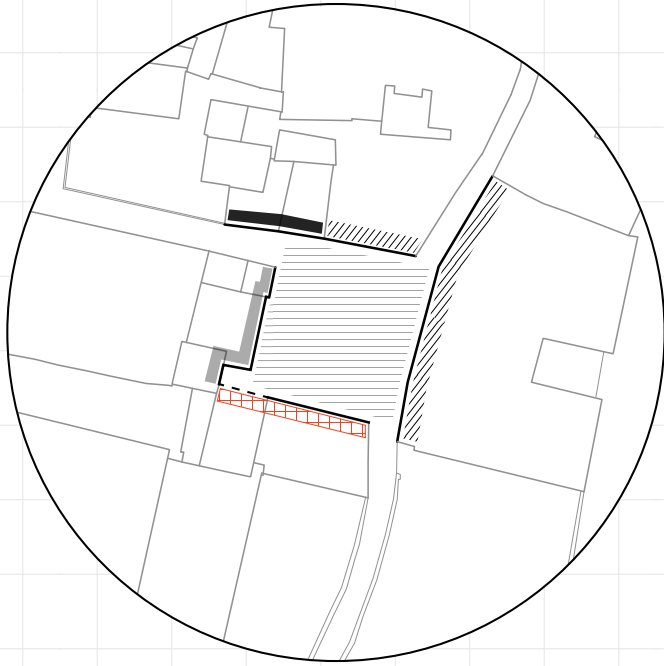
SOURCE



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ◌ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊖ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- WALL
- ∩ GATE
- ▶ ENTRANCE



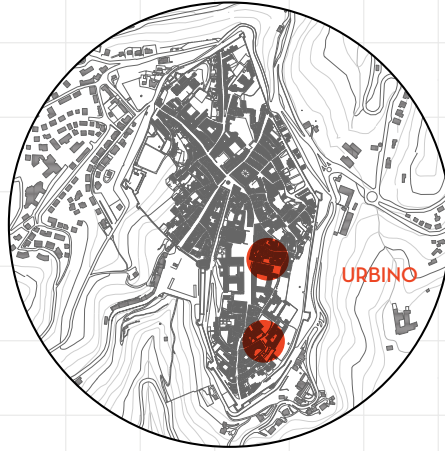
empirical in situ survey, January 2013

SOURCE

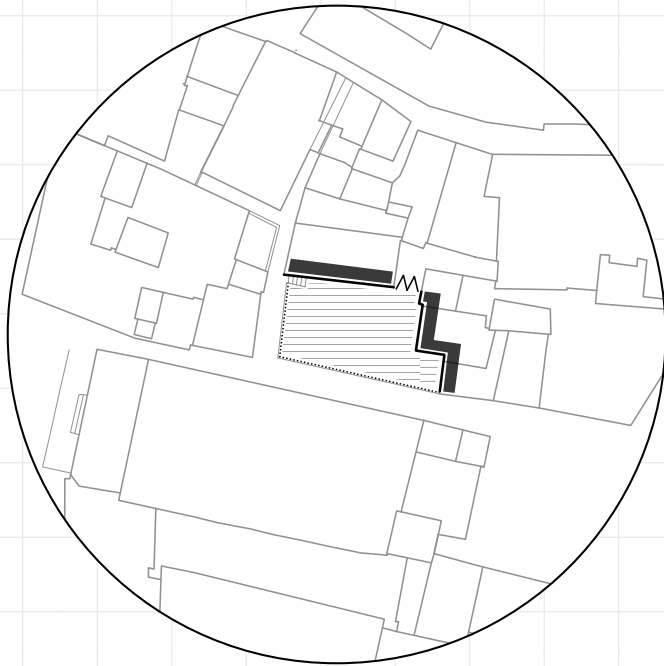
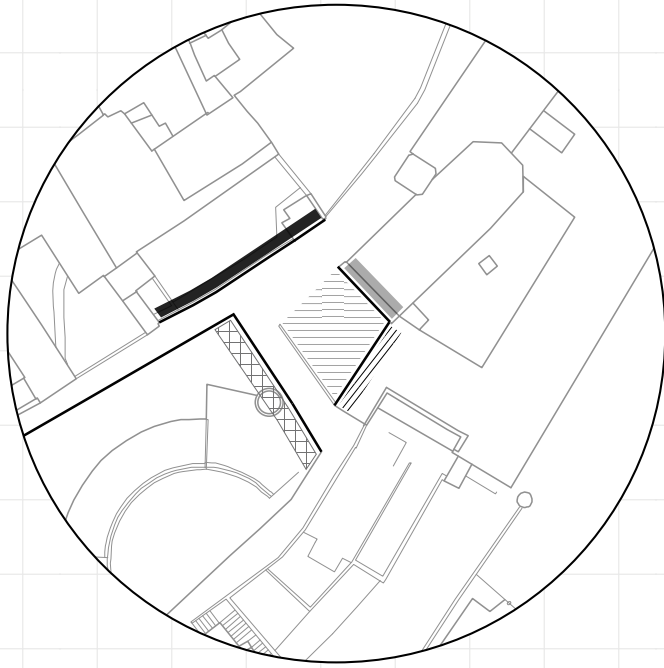
(figure 65) Urbino - open public spaces analysis



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ◌ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊕ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ∩ GATE
- ▶ ENTRANCE



(figure 66) Urbino - open public spaces analysis

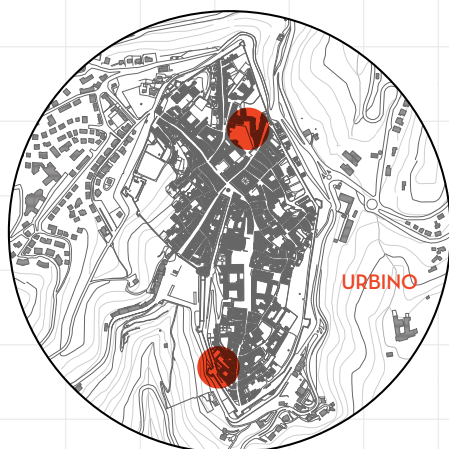
0m 50m 100m 200m

SOURCE empirical in situ survey, January 2013

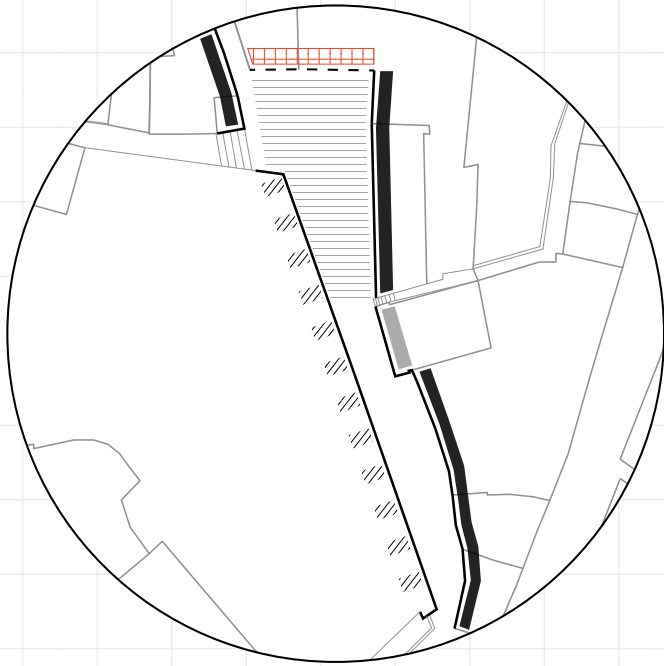
URBINO



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ▨ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊖ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ⌵ GATE
- ▶ ENTRANCE



(figure 67) Urbino - open public spaces analysis

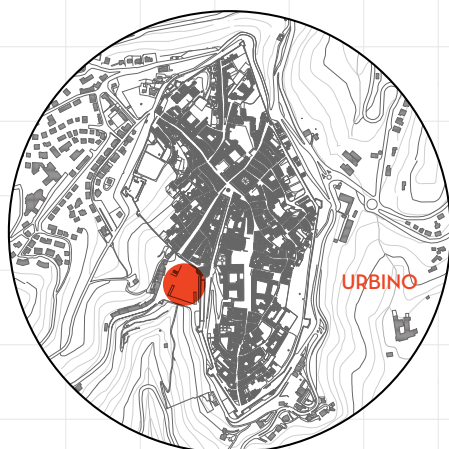


empirical in situ survey, January 2013

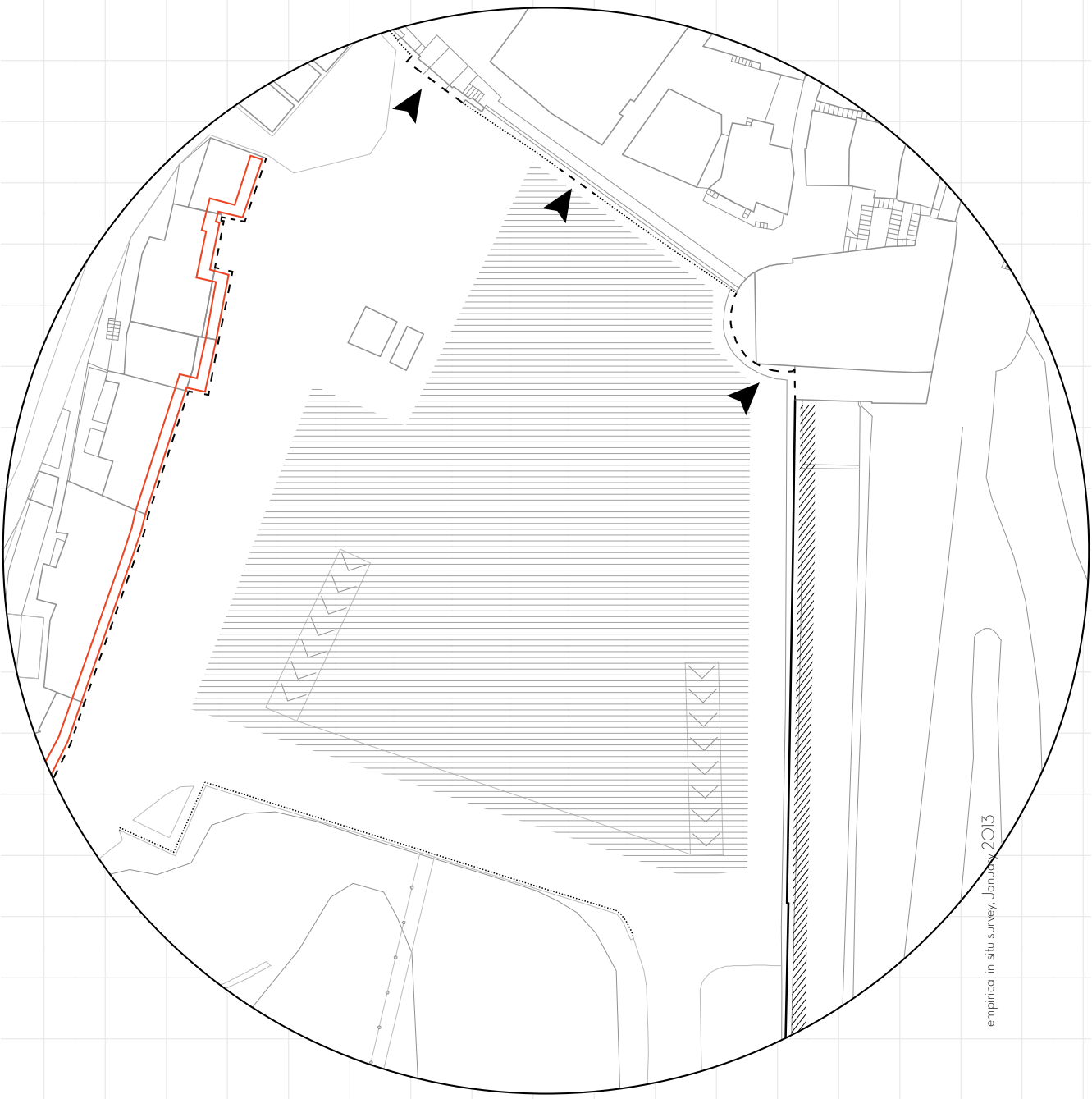
SOURCE



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ◌ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊕ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ∩ GATE
- ▶ ENTRANCE



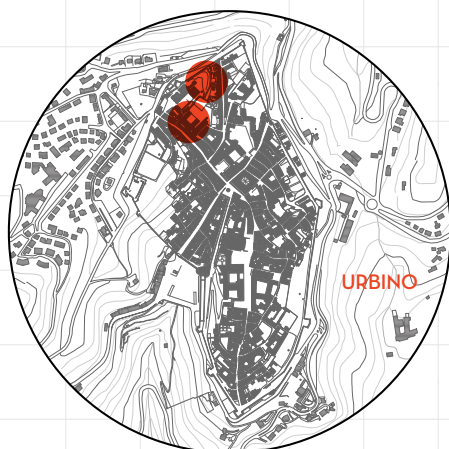
empirical in situ survey, January 2013

SOURCE

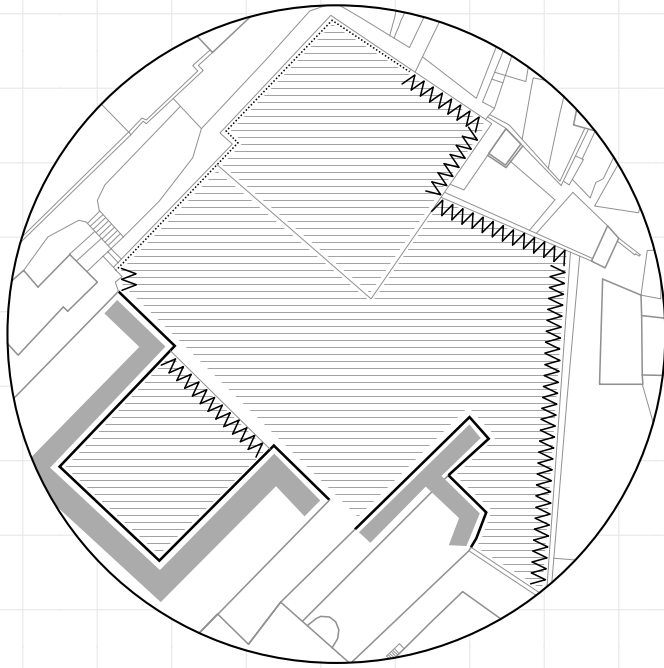
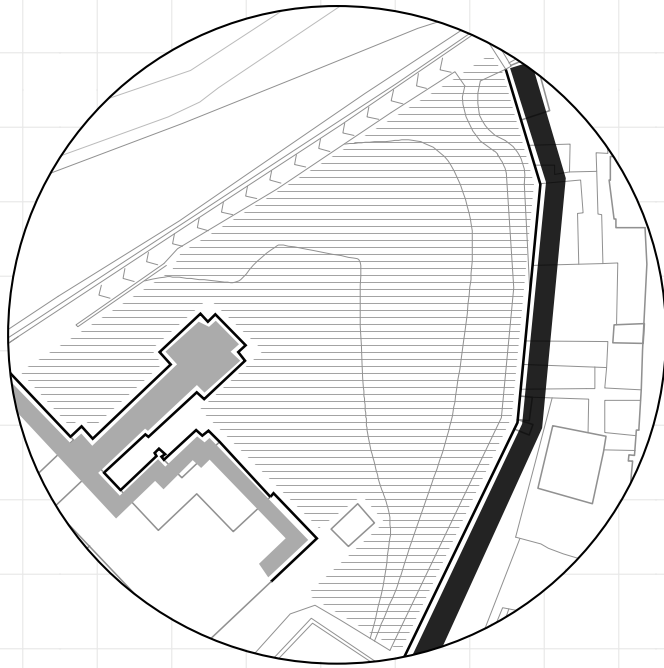
(figure 68) Urbino - open public spaces analysis



urbino_open public spaces analysis



- OPEN AREA ANALYZED
- ▨ UNDERUSED / ABANDONED
- RETAIL
- ⊕ UNIVERSITY AND RELATED
- ⊕ MUSEUM
- PRIVATE
- PUBLIC
- LOCAL FACILITY
- RELIGIOUS
- - - PERMEABLE FRONT
- NOT PERMEABLE FRONT
- ⋯ WALL
- ∩ GATE
- ▶ ENTRANCE



(figure 69) Urbino - open public spaces analysis

0m 50m 100m 200m

SOURCE empirical in situ survey, January 2013

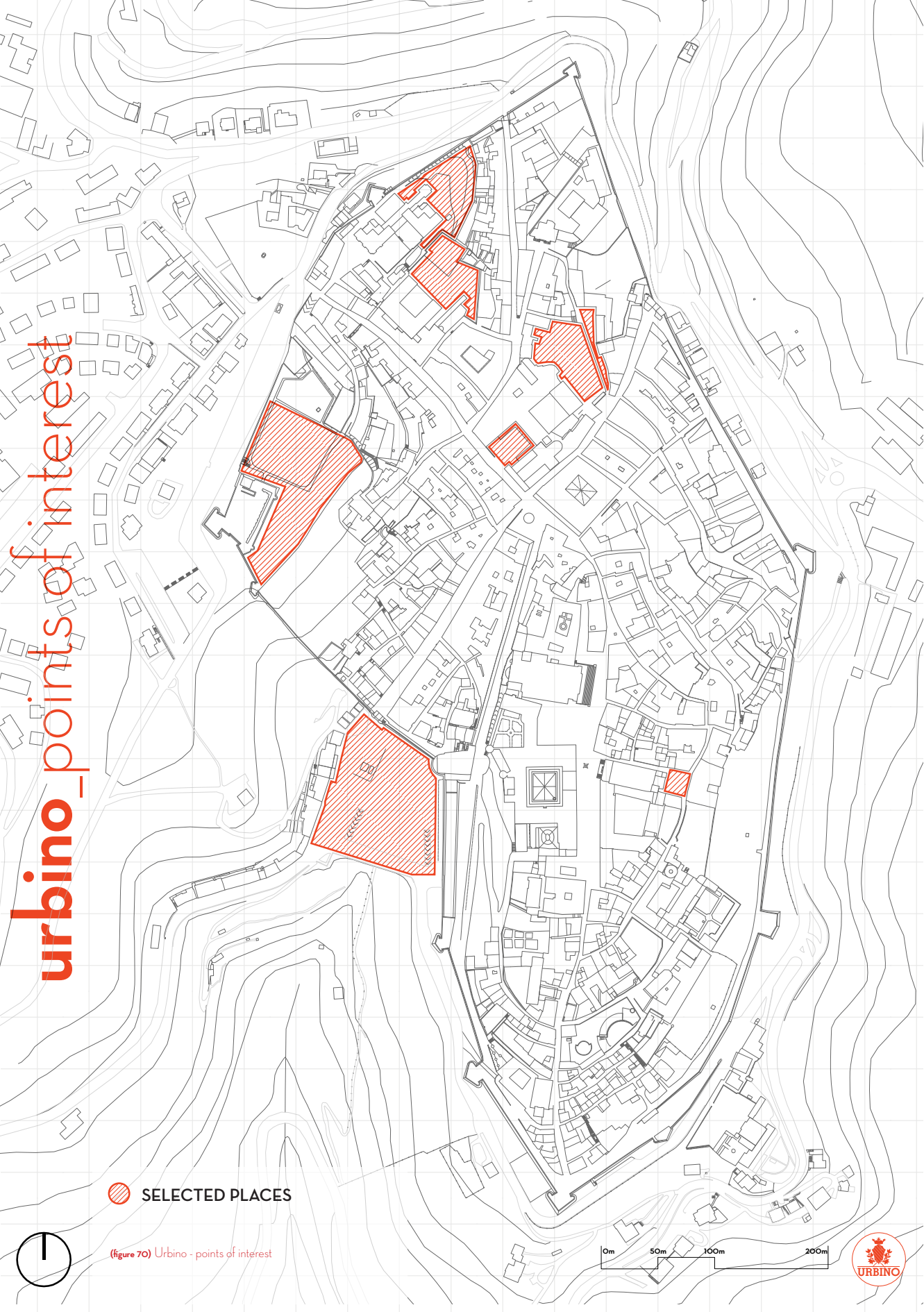
SOURCE



urbino_points_of_interest

 SELECTED PLACES

(figure 70) Urbino - points of interest



PLACES FOR POSSIBLE INTERVENTION

The final result of this analysis is a list of places of possible intervention. Subsequently this map of possible places of intervention, will be crossed with the results coming from the digital analysis. In fact some places that, during the observation on site looked like being underuse could reveal unexpected social life reported by a massive use of social networks from those places.

The list includes the passage Piero della Francesca (2), the open space behind the justice court (3), the Piazza San Andrea (4), the botanical garden (5), the Piazza Piazza Gherardi (17) and Borgo Mercatale (16) with the Data (G), the Fortezza (C) with the park (12) and the piazza San Francesco (8).

2.2.2 Digital Analysis: social life nodes

Foreword

A prerequisite before embarking on the next chapter is required. What is relevant to bring to the attention is how the here proposed interpretation of data revealed via social platforms is not intended as a reading of statistics. The one at issue is a qualitative, not quantitative, research, the purpose of which is to define a possible methodology for the use of data coming from digital devices within the urban planning operations.

Although the possibility to have a software that can automatically collect interactions from various social networks falls among the ambitions of the thesis, the proposed interpretation and graphic representation of the data on the maps was “analogically” made by the authors of the thesis. Interactions, in fact, have been sought directly from the chosen social networks, by geo-location (for example, “within four kilometers from Urbino”) or semantic (“Urbino public spaces”) querying.

In this sense, two kinds of limitations intervene. The first has a general nature and is part the statement that any human work, compared to the digital one, while allowing a continuous counter-check and verification of the relevance and inherence of collected information, it is still subject to a margin of error, albeit minimal.

Moreover, the research carried out in these terms leads to a further limitation that is related to the query settings imposed by the social networks. The returned information, actually, does not necessarily represent all the data that have been produced within a certain urban venue since the foundation of the social network, but there might be limitations both in time and in terms of the

amount of available data. The platform, in fact, can establish that the research is made exclusively on data produced within a certain period of time (for example, *the last four weeks*) or that to each search corresponds a maximum fixed number of spotted answers.

In the circumstances, the maximum number of search results is not a major problem, since generally the fixed limit is definitely higher than the amount of interactions produced in a really small reality like that of Urbino. Time limits, otherwise, could adversely affect the results of a survey conducted as a statistical analysis.

Once again, in fact, it should be stressed that what follows is not a collection of data, the reading of which returns an objective snapshot of the social realm of Urbino, but this is an attempt to propose a new method of intervention on the public sphere, also thanks to the advantages offered by an analysis made through digital tools. The thesis aims at defining a useful practice of reading and interpretation of a series of signs more and more frequently produced in contemporary cities and able to facilitate a planning method that takes into account invisible instances at a traditional urban analysis.

Important is a transversal competence. On the one hand it is essential to have a “familiarity” with social networks and with digital devices at large, in order to understand - even via intuition - the sense of the interactions that are transmitted through these. To elaborate an interpretation of a communication tool that is personally used in everyday life is certainly an aided starting point.

On the other hand, our education as architects is absolutely necessary, since the signs coming from social networks have been interpreted in terms that are significant for an urban analysis.

In this section we try to trace what are the most used spaces, open or closed, public or semi-public, that can be considered as the core of Urbino historic centre social life, through data coming from social networks (Twitter, Foursquare, Instagram and Flickr). And some tracks registered through an application in order to trace with a GPS the usual movements of city users within the city. At first we traced the main difference among those social networks and how to interpret the results coming from those data, then we observed the specific results about Urbino.

The use and the spread of social media has created a vast amount of data that could be collected in real time maps and give new insights into the use of the city.

Nowadays there is a moment of great optimism towards the possibilities aroused by the extrapolation and the interpretation of users' generated data produced by the use of social media.

Those types of observation require a moment of thinking in order to understand what significant analysis could be drawn from the interpretation of user's generated data.

There are clear advantages in the use of those data, because they are automatically produced and free, continuously updated.

On the other side it is necessary to profile the main users of the social network and the reasons they use it, in order to extract significant results.

Our main goal is to identify underused public spaces, and spaces that lack a feeling of identification by citizens, considering as well those that on the contrary are considered as Urbino historic centre social life nodes. The goal of this analysis is then to understand if social media data could facilitate the comprehension of:

- The use of the space: if social media active population is usually present in that location, if they tend to come back, what is the part of the day when they tend to use the place;
- New poles: what are the places perceived as significant of a city, what are the places most talked about or most photographed.

In order to validate the data produced it is necessary to understand the users and how they use the social networks.

The social networks observed in this analysis are mainly four.

Twitter. It is a social networking and micro blogging service utilizing instant messaging, available as mobile application and as website platform.

Foursquare. It is a mobile application, through which members could note their locations and find out where friends are.

Instagram. It is a mobile application that enables online photo sharing. Users could take a picture, apply a digital filter to it, and share it, with its location.

Flickr. It is a located pictures gallery edited on the web and at home.

In first place looking generally at the average age of people using these social media, it is necessary to notice that the main percentage is young people under thirty-five years old²²⁸. Those data consider publicly disclosed information in the bio and the profiles of the users. For sure a lot of teenagers are more comfortable disclosing their age on social networks compared to older people. But common sense suggests us that young people tend to use social networks more and with more frequency than older people.

Considering this age frame to Urbino situation, we can extend these considerations to some profiles that are then traced thanks to the data they leave in social networks. Those are the students and young native dwellers.

Tourists are represented as well, as long as they are young.

Old city dwellers and their use of space is totally unrepresented but, as our main goal was to focus on the students and to create a sense of identification and affection toward Urbino, as well as to diversify the use of the space they have in the city, that restriction is just better framing our research.

At the same time an important consideration is that Urbino has every year an average of 14.500 students on 15.0000 inhabitants in all the municipality territory; thus considering data referred to the students is considering a major percentage of the actual city users.

The data we collected are all the contents produced by users until January 2013. Some social media provide data produced in a limited set of time, others will provide data produced till that date. This will be specified in each situation. The data under observation refer to a range shifting from 1000 to 5000 contributions.

Considering, then the students as the main profile using social media, that is a 20-30% of the whole section.

This type of analysis will then have the limit of having the contributions of just social media active people; but at the same time, if we consider how those types of analysis were conducted in traditional ways – through interview, mainly – it is clear how this tools provide a higher amount of contributions.

Another profiling comes from understanding how those social media are used. Those are evidence-based considerations that are not validated, but

228 Alexa, web information company, via <http://www.alexa.com/siteinfo>

could be considered as a way to read those maps.

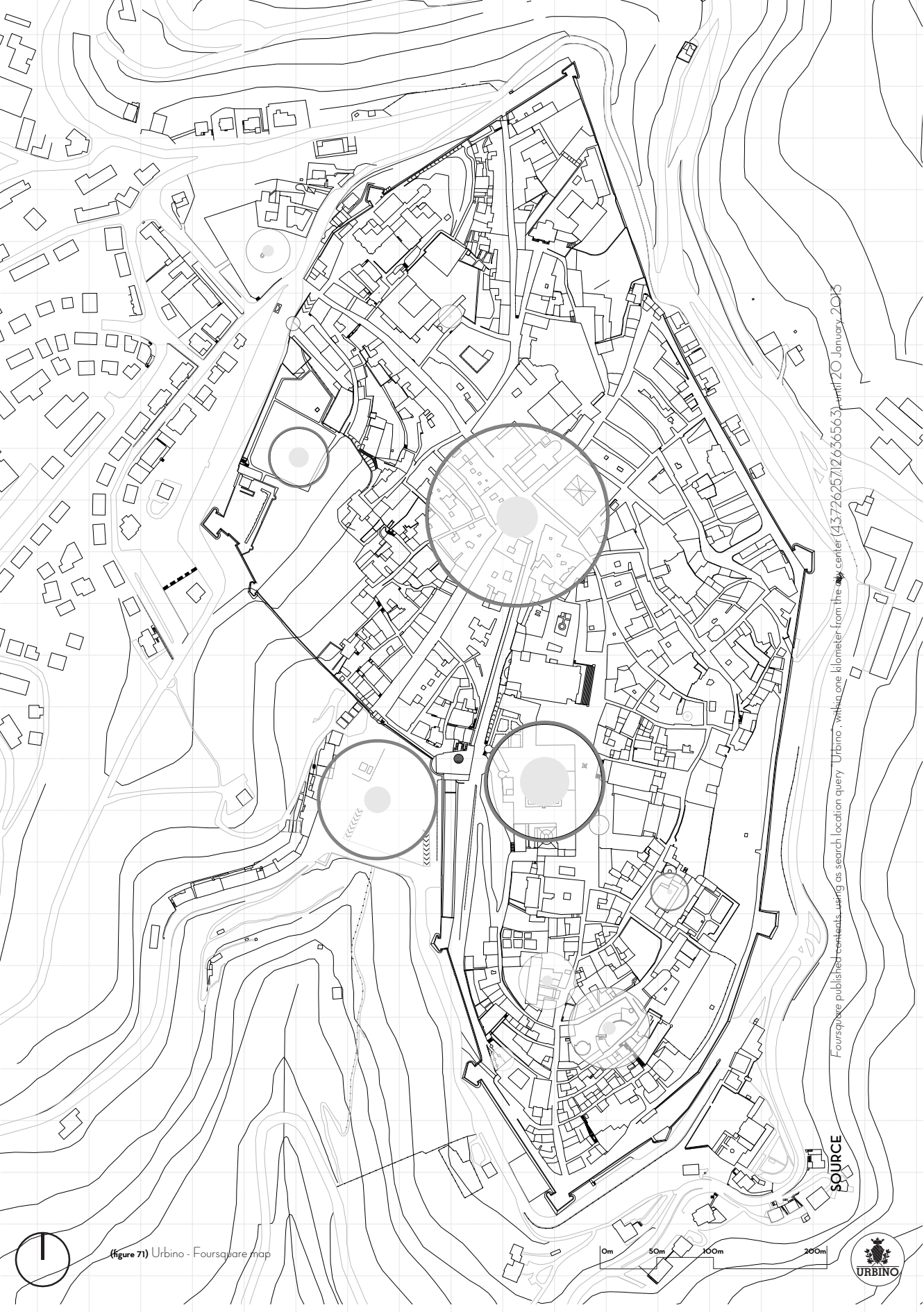
Twitter gives the possibility to micro blog in every moment of your life. Thus two types of analysis could be conducted using *Twitter* data. Location embedded tweet helps in understanding where is the daily life of social active people. Semantic analysis of tweet could be used in order to understand what is perceived as a representative place because people tend to tweet or talk about it. People don't consider the location a major aspect of their tweet. Thus the located tweets are a true mirror of place where they tend to be in their life.

On the contrary *Foursquare* gives just the possibility to *check-in* in a place, provide comments and find nearby places. People tend to check-in if they want to find friends, find new places or just publish their current location. The last part is significant, as the location has to be a place they want to embed in their virtual profile. They tend then to check-in in venues they identify with or they like.

Instagram and *Flickr* are two pictures-based social networks. But while *Instagram* let you share pictures taken with your smartphone, *Flickr* is more about uploading on the web-platform pictures you had previously taken and to locate them. The former could be considered the same as *Twitter*, in sense of mapping the places where people tend to live, work on daily basis.

It is a compulsive, instinctive action to take a picture with *Instagram*. *Flickr* on the contrary is a more reflexive action; the users had to have a camera while being in the place and then decide to share the pictures, selecting perhaps the ones they consider more relevant. *Flickr* located pictures could then be considered as the contribution of tourists visiting the place, and then uploading what they have seen. Analyzing what are the main places represented in *Flickr* helps in understanding what is considered representative in a city.

Foursquare



(figure 71) Urbino - Foursquare map

Foursquare published contents, using as search location query 'Urbino', within one kilometer from the city center (43°26'25.712635563, 12°17'0 January, 2015)

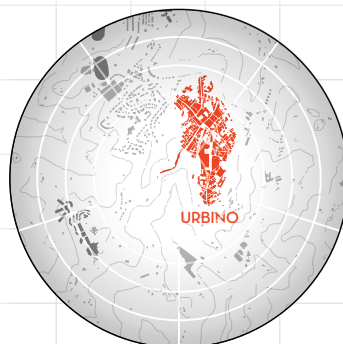
SOURCE



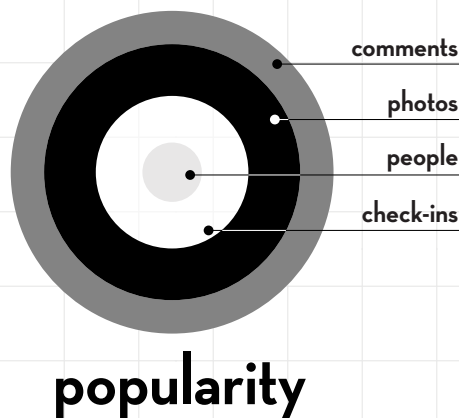
FOURSQUARE MAP


The relevance of *Foursquare* for our analysis deals with the fact that the geo-localization made by the user is not some extra-information that goes together with the shared content, it constitutes the shared content itself. Therefore, other platforms allow the individual to embed his location to the element he wants to upload, but the main focus is on the content and the coordinates from where the interaction starts are auxiliary. Otherwise, *Foursquare* has been designed as a platform for places and the main shared content are information, feedback and reports about places.

To our purpose, what is important to stress is the fact that while other social networks not necessarily imply a key focus on the theme of the spatial localization, this actually happens with *Foursquare*. Whether an analysis based on *Facebook*, *Twitter* or *Instagram* allows us to deduce effectively the most attended spots in the city, *Foursquare* introduces a consideration about the representativeness of places.



.5069
check-ins



 **NOTE:** this symbol is used to indicate a location that, though presenting a number of check-ins not conspicuous enough to be displayed at the purposed scale, it is considered relevant as point for further analysis

The geo-localization is not an information unconsciously transmitted, it is instead the primary action of the social interaction. “I am here” seems to be a short formula for “I am *aware* of being here”.

The here reported analysis has been conducted until January 2013, considering the *Foursquare* interactions geo-localized within one kilometer from the center of Urbino. These data have been properly selected, as to observe only those that refer to public spaces and publicly used places in the intramural city. Bar, restaurants, clubs, shops have been excluded, since considered of minor importance for our goals.

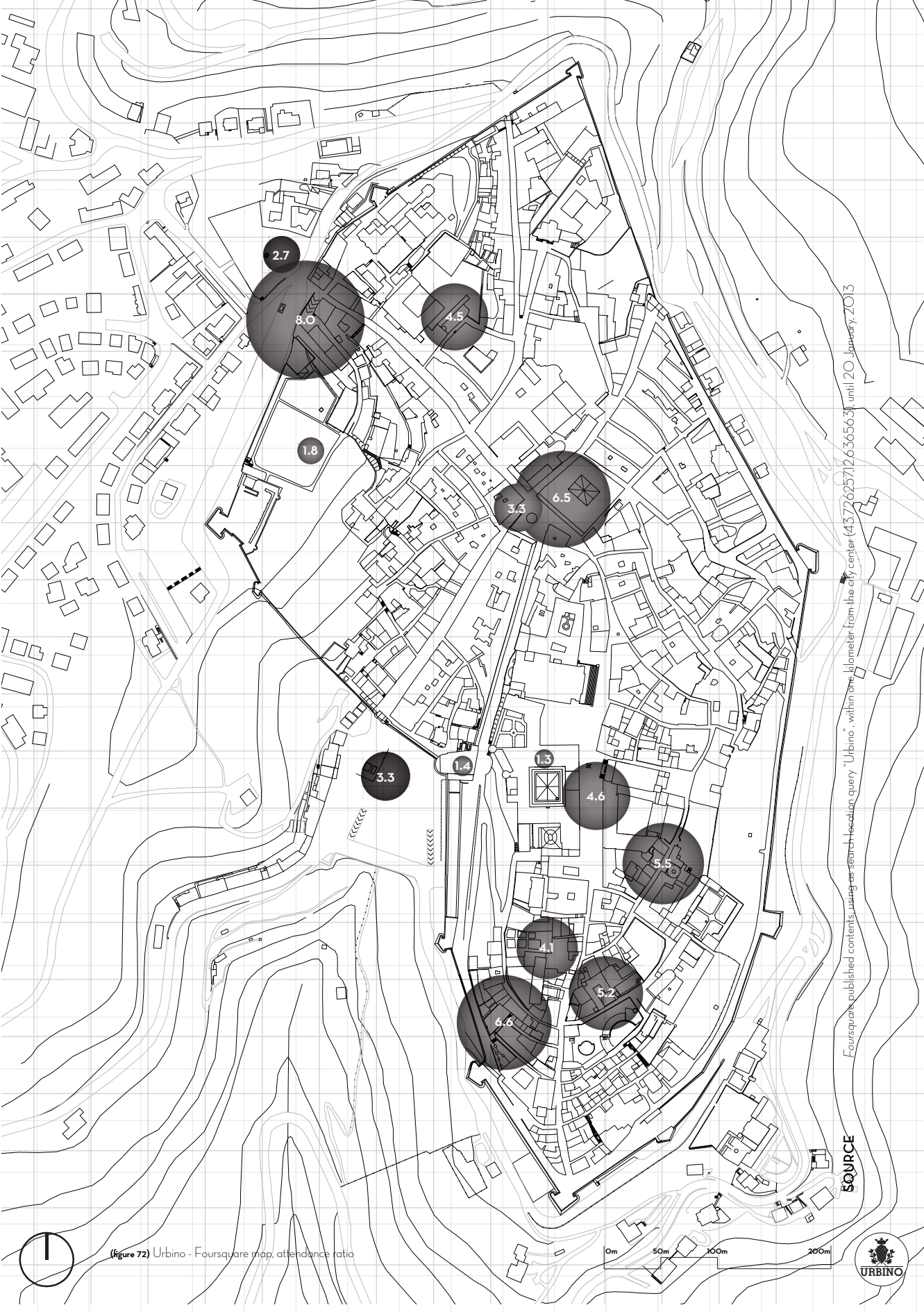
In our research we decided to refer to an evaluation criterion we called *popularity* and identifiable as the sum of parameters that can be reported on *Foursquare*: *check-ins, photos, people, comments*. The higher the amount of these four, the most *popular* a place has to be considered on the social platform.

Thus, the most attended location results to be Piazza della Repubblica (9), known as the main urban pole of the city and gathering place for students and young native dwellers especially in the weekend. In the second place, with a difference of few points, there is Palazzo Ducale (H) which instead represents the main tourist attractor and a landmark for the city at large.

Another extremely significant result regards Piazza Mercatale (16), which is ranked in third place for *popularity*. Terminal for buses and wide parking area, it actually represents the main gate to the city and a pole for tourists and commuters arriving in Urbino.

It has to be noticed that the parameters identifying the evaluation criterion of *popularity* are not particularly relevant if considered separately, since it is not possible to frame a group of user or a defined attitude considering a single element per time. Pictures, for instance, are not necessary connected to a touristic vocation of an area, since they could be – and actually are – both uploaded by tourists yearning to share their suggestive captures of the city, as well as by dwellers, sharing images from their daily lives.

A cross interpretation is instead extremely powerful and reveals hidden dynamic the interpretation of which is exceptionally significant for our research.



(figure 72) Urbino - Foursquare map, attendance ratio

Foursquare published contents using ge-search-location query "Urbino", within one kilometer from the city center (43.726257;12.636563) until 20 January, 2013

SOURCE

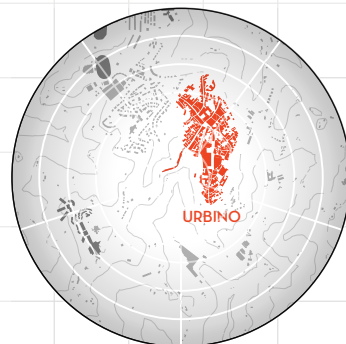


FOUR SQUARE ATTENDANCE RATIO

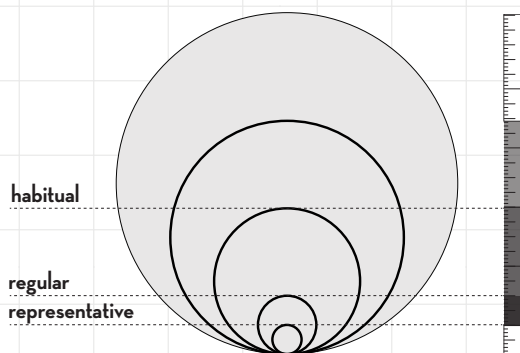
The *attendance ratio* represents the relation between *check-ins* and *people*, that is the number of check-ins and the number of users that checked-in. For instance, whether a place records five-hundred check-ins from a hundred different people, it will mean that those people came back to that place – and they checked-in – five times. It is a relevant value for the analysis, since it gives an address to what kind of users and what kind of relationships these establish with spaces.

In fact, an *attendance ratio* close to the unit value – which means with a number of check-in almost equal to the number of persons who checked-in, suggests a type of space visited once in a lifetime, to which is assigned such an importance that makes the user want to witness and share the visit within his social sphere.

The first hypothesis is that this kind of *attendance ratio* is connected to the symbolic value of space. It generally regards extremely representative places, with a high incidence of tourists; probably monuments, ancient



attendance ratio



churches and museums. The opportunity to go to that place is absolutely extraordinary and is socially demonstrated using the sharing platform. "*I've been here, I visited this place, I recommend it, I am enriched by this experience, envy me.*"

The same people will rarely return to the place at issue, probably because they are tourists and will have no chance to return to that city or probably because the location in question is a museum or an historical collection and a few hours of sacrifice, as well as a proper check-in, will be sufficient to ascertain the status of having being there. "I visited it".

The second hypothesis, instead, generally related to the first one, concerns more the design of the space and relates more closely to native residents and long-term users. It regards those public spaces that have not been designed to meet long lengths of stay and are exempt from benches, trees, covering structures, ergonomic surfaces or materials. The user, even if living or spending a long time in that city, probably a few steps far from that place, doesn't come back and in case he doesn't stay there enough time to check-in.

From the carried out analysis, it seems Palazzo Ducale (H) belongs to this category, as an historic symbol of the city and the place where the *National Gallery of the Marche* is housed. The quadrangular square in front of it is a flat surface, free from places where to sit, shadows areas and facing local facilities.

The *Sanzio Theater* (F) is part of this group of highly *representative places* and the same goes for the *Albornoz Fortress* (C), another scenic spot and recommended by almost any tourist guide. This latter works just partially as local park, probably also in this case due to the absence of suitable equipment, as well as for particular restrictions on users – for instance, the access denied to dogs.

The places which have an attendance ratio between two and five are *commonly frequented* spots, presumably by the inhabitants of the city. Those generally are meeting places, squares, gardens, small parks, which are often facing entertainment and retail activities, including bars and cafes.

Piazza della Repubblica (9) is included in this range of use. Absolutely the busiest public space of the city to an empirical analysis, populated both by native dwellers and students, of course with different times and dynamics. The absence of elements that enhance the spatial comfort – as there are no seats, no trees, no shelters, only the central fountain provides relief from the heat in summer period – is compensated by the presence of retail shops, especially bars, restaurants, cafes. Borgo Mercatale (16) is an interesting case at this purpose, as it results to be a *commonly frequented* place and is in third place for

popularity. Crossing these two data it is possible to state that Borgo Mercatale (16) is actually perceived as a main pole especially for commuters, rather than for tourists, since the *attendance ratio* is too high to indicate a touristic spot, which – as previously explained – generally has a closer to one index.

Public spaces that present an attendance ratio greater than five are identified as *habitual places*. The number of check-in is significantly higher than that of the people who have carried out, this means that a given number of users continue to return to that place with a given frequency and check-in.

An attendance ratio of this kind is chiefly caused by two coexisting reasons.

The first implies that at issue is a place that involves a regular attendance: such as universities, libraries and offices. These are places where people return frequently, mainly due to the nature of the activity that took place there.

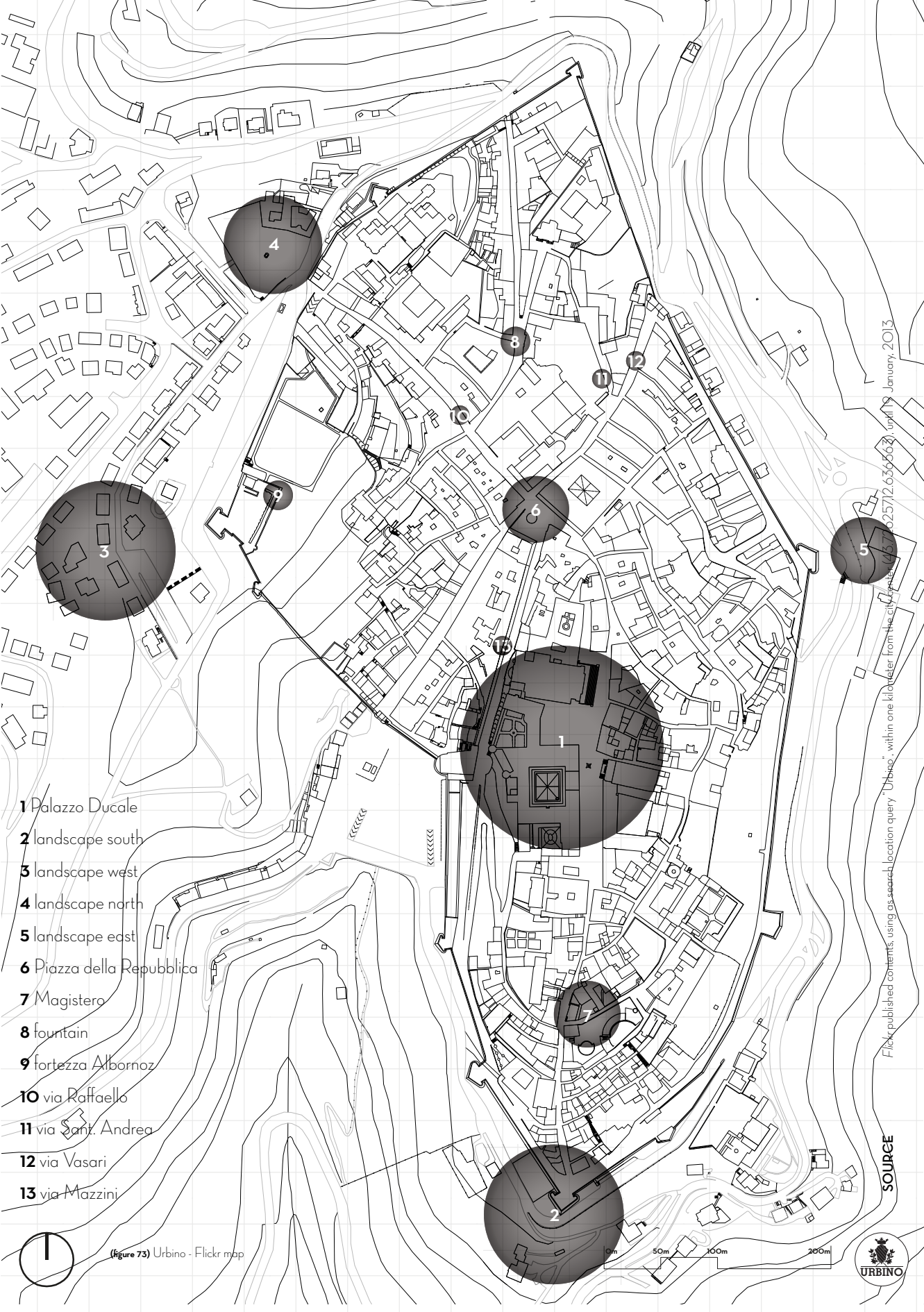
However, the frequency is a necessary but not sufficient reason to explain the observed *attendance ratio*. Actually, the regular attendance per se is not necessarily index of the user's preference for a given place, there are places that are frequented although the location is not chosen by the user. It is the case of work places, university, public facilities.

Therefore the check-in rather indicates the explicit will to make known your presence in a place to other people, identifying yourself in that place. The number of check-ins repeated, thus the choice to check-in more than once in the same point, it is a sign that a mechanism of appropriation and identification has been established with the place.

A high *attendance ratio* can be considered as a form of common practice on a space and this is fueled by the operating mechanism of Foursquare itself. Since the platforms makes the user gradually conquer higher virtual badge the more he checks-in in a place, until arriving to the status of *mayor*. This system allows the user at identifying in one place and get aware of the presence of other people which are doing the same and collaborate – or virtual challenge – with them in the creation of a site-specific community.

It is not surprising that belong to this latter category places like the main university poles: the faculties of Law, Sociology, Economy, Languages, the ISIA Institute and the Academy of Fine Arts. Those spots are regularly attended by the students and represent the places where they spend the most part of the week; this attitude contributes to make them feel these locations as a commonly shared extension of their private sphere, they actually belongs to those places and want to disclose their membership through media social actions.

Flickr



- 1 Palazzo Ducale
- 2 landscape south
- 3 landscape west
- 4 landscape north
- 5 landscape east
- 6 Piazza della Repubblica
- 7 Magistero
- 8 fountain
- 9 fortezza Albornoz
- 10 via Raffaello
- 11 via Sant. Andrea
- 12 via Vasari
- 13 via Mazzini

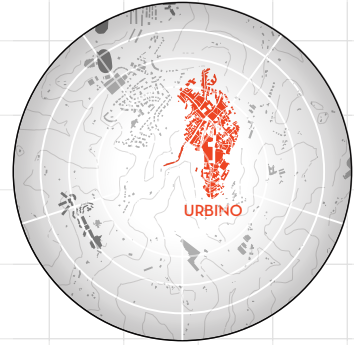
(figure 73) Urbino - Flickr map

Flickr published contents, using [gis search location query "Urbino"](#), within one kilo meter from the city center (43.4725712, 12.6369662), until 19 January, 2013.

SOURCE



FLICKR MAP



Flickr is a virtual gallery that let users share pictures.

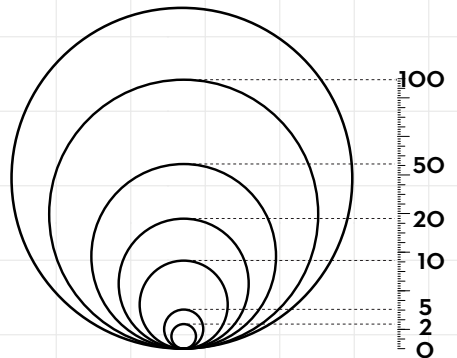
The pictures are usually taken with a camera, and the uploading moment to the virtual gallery is different from the moment the picture is taken. Users come back home, select the pictures they find more significant and upload them, geo-referenced.

It is a more reflexive moment compared to *Instagram*. The former, in fact requires the camera and the selection. *Instagram* on the contrary let users crystalize a moment they were living in urban life: it is a more compulsive action.

This type of features of *Flickr* frames the analysis of data considering them referred to particular users and leading to a particular interpretation of the results.

The users having camera are usually tourists and visitors. The moment of selection induce to understand the

.517
flickr photos



flickr places bear

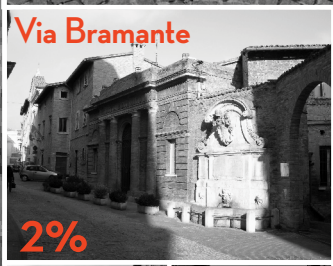


landscape west

16.7%

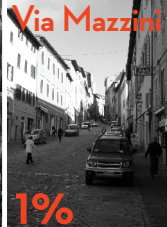


Piazza della Repubblica



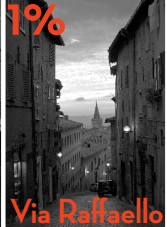
Via Bramante

2%



Via Mazzini

1%



Via Raffaello

1%



2.4%

fortezzan Alborno



S. Andrea

1%



0.5% via Vasari



4.3%

landscape east



6.2%

Università Carlo Bo'



Magistero

2.8%



7.7%

landscape north



4.3%



11.5%

landscape south

38.5%

Palazzo Ducale



results in order of representative poles, the places that are considered as the hotspots to see when visiting Urbino, or beautiful places scattered in the main touristic paths.

The data were collected in January 2013. *Flickr* shows all the pictures that were made and geo-referenced in Urbino till the day of collection.

In the map the bubble are bigger if there are more pictures that represent that place. The majority of contributions are about Palazzo Ducale (H), that is then considered as the major attraction in Urbino, basically the *must see* when visiting the city.

Visitors are then shaken by the beauty of the landscape. The main contributions are about the landscape in the west and in the south of the city centre. The landscape of the west, *le Vigne* (14), is perceived in the moment people enter the city through Borgo Mercatale (16). Visitors possibly tend to remain in the Southwest side of the city entering from via Mazzini (13) and going down towards Piazza Rinascimento (15), arriving to the deep South wall.

Going on, another major-photographed place is the landscape in the North.

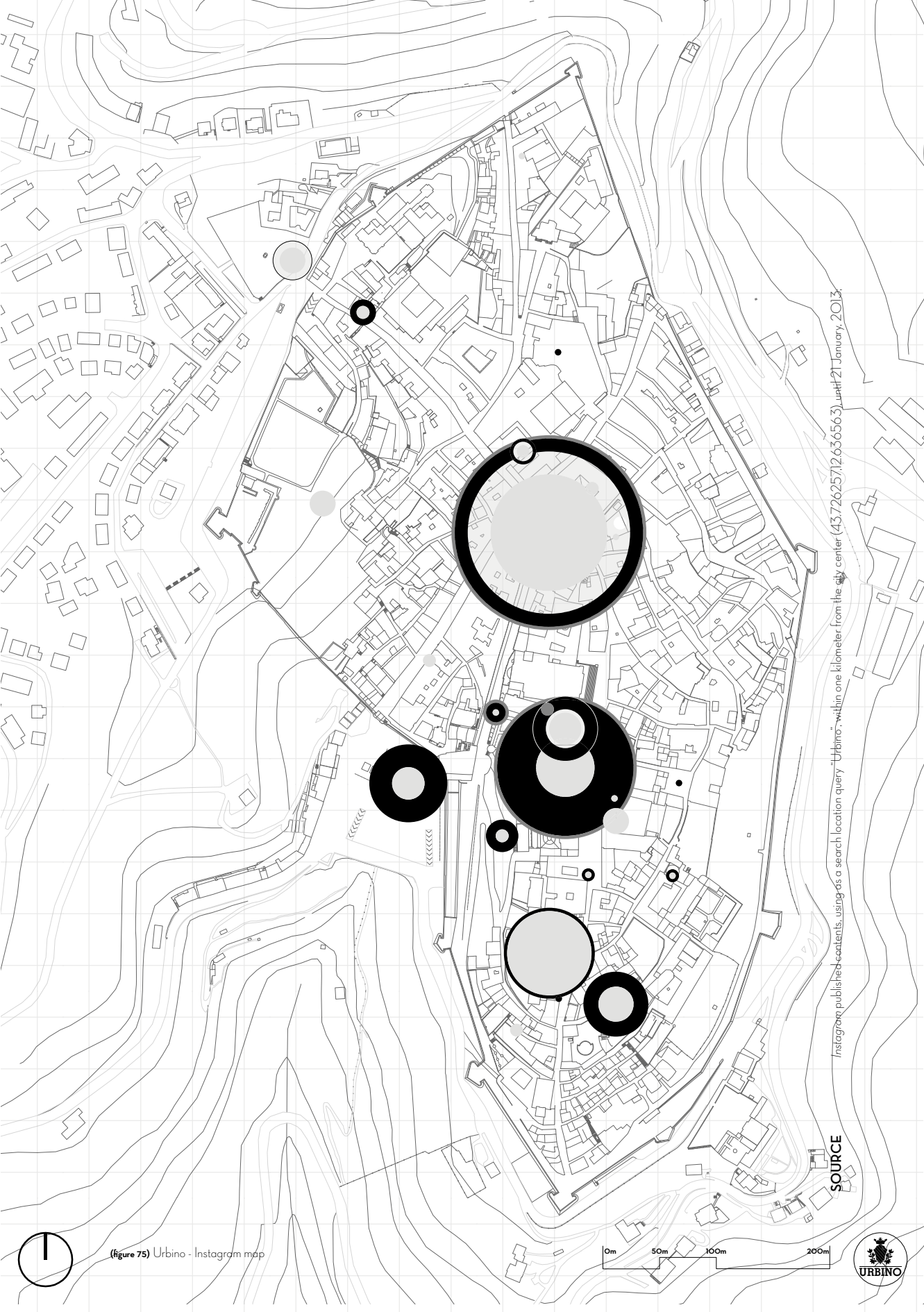
Summarizing those first results the main aspects visitors tend to appreciate in Urbino are Palazzo Ducale (H) and the landscape around the city centre.

Then there is an almost *par condicio* among Piazza della Repubblica (9), the landscape on the East, and the *Magistero* (I) from Giancarlo De Carlo. *Magistero* is a very interesting building, that doesn't show its main features from the outside. Its presence among the most photographed spots is a positive index.

Then visitors tend to picture some street in particular via Bramante (7) and with minor intensity via Raffaello (6) and piazza San Andrea (4).

These contributions show what are points touched by the major touristic paths. The Fortezza (12) doesn't have a lot of contributions, but the majority of pictures that represents the landscape on the West have been taken from the park of the Fortezza (12). Thus this park (12) attracts tourists that tend to go there, even if they are more impressed by the views it offers.

Instagram



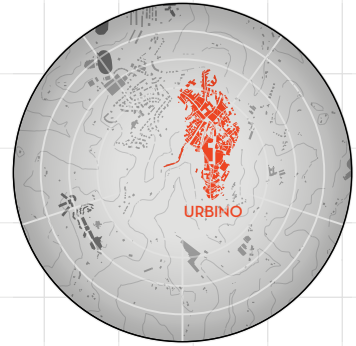
(figure 75) Urbino - Instagram map

Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013.

SOURCE



INSTAGRAM MAP



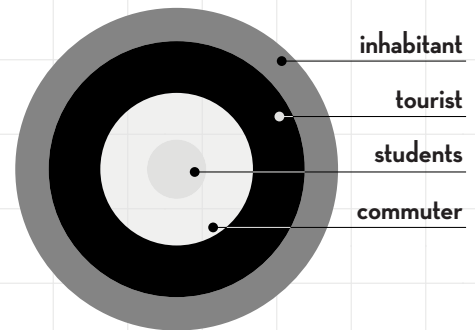
An analysis based on *Instagram* pictures offers the chance to understand which are most interesting points in an urban settlement and who the users of these spaces are.

Indeed, the platform allows the recollection of pictures made in a specific geographical place, through a research based on the embedded geo-location index. The result is in terms of a *map of use* of the public spaces, useful to understand the motions of people within the city and comparable both with traditional flows analysis and with other representations elaborated through social media information.

Moreover, *Instagram* enables us to reconstruct a sufficiently detailed profile of its users, which is tremendously relevant to outline more precisely the urban phenomena we mean to observe.

Regardless of ethics concerns connected with the possibility to obtain strictly personal information with a simple geo-locative search, the pros-

.161
users



popularity

instagram users_students



(figure 76) Instagram users_students



Instagram published-eatents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013.

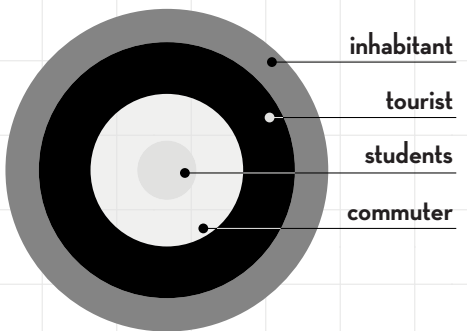
SOURCE



pect to easily draw sufficiently accurate profiles is extremely relevant; as it can lead to a deeper comprehension of the dynamic that the urban centre is interested by.

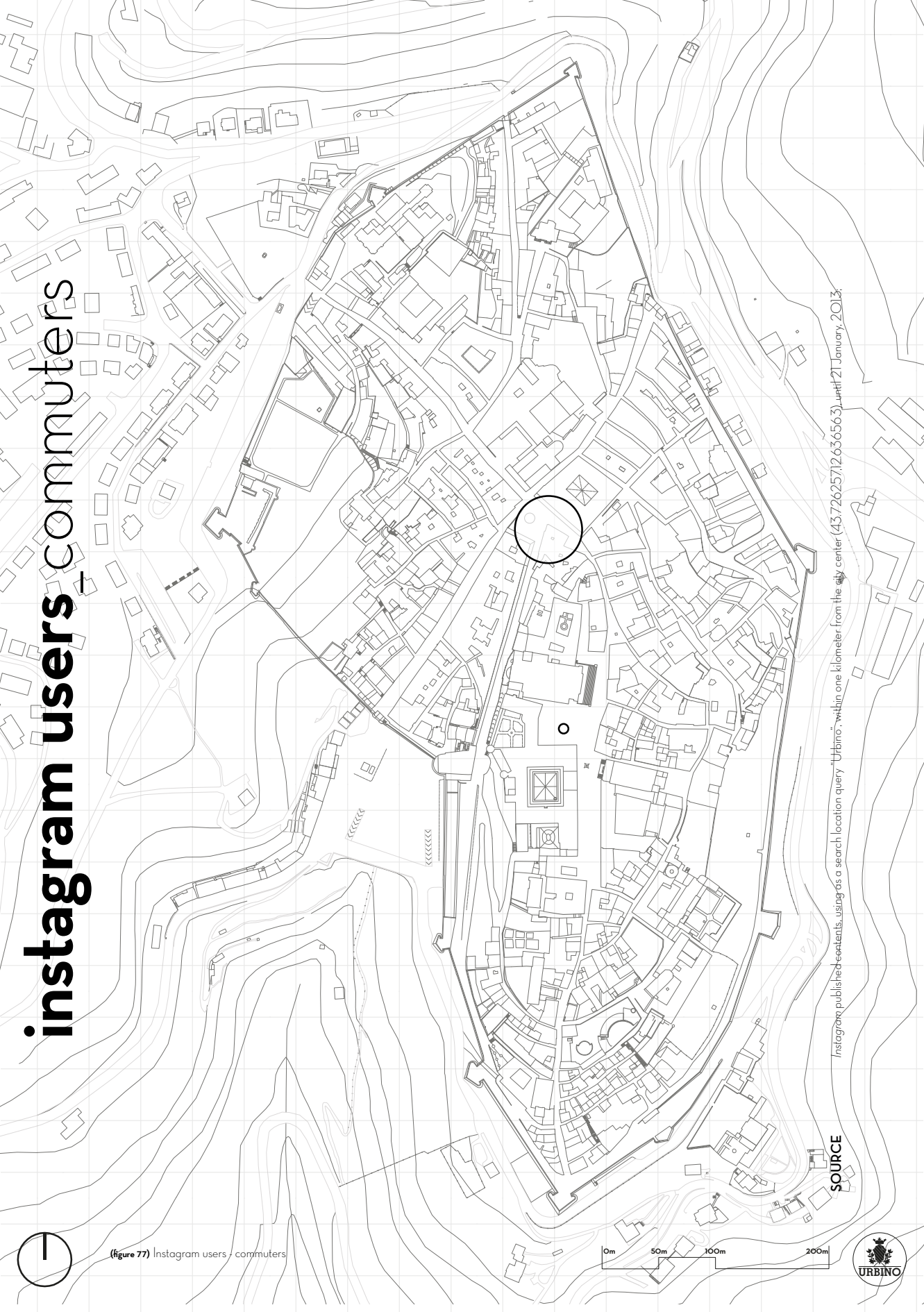
The profiling process starts from the description the user embed to his *Instagram ID*, reporting data about his age, city he lives, occupation. Whether the information provided directly by the user are not available or are considered not sufficient for the purposes of the research, it is interesting to observe where the pictures were taken. This reveals information about the movements within the city and out of it; for instance, if a user has taken most of his picture in Rome and just few in Paris – furthermore in a limited time frame – it is quite fair to affirm that he lives in Rome and has visited Paris for a few days as a tourist.

Clearly it is not always so easy to identify the dynamics that govern the life of a user based on his movements. In case in which the number of pictures and their location are not per se significant, the observation must move toward the evaluation of the content of the picture itself. Suppose a member of the social network would display a pretty similar number of photos taken in separate locations at the maximum distance of a couple of hours from each other, the image content may be extremely important to understand the type of user. Therefore to the first place may be as-



popularity

instagram users - commuters



(figure 77) Instagram users - commuters

Instagram published-eatents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013.

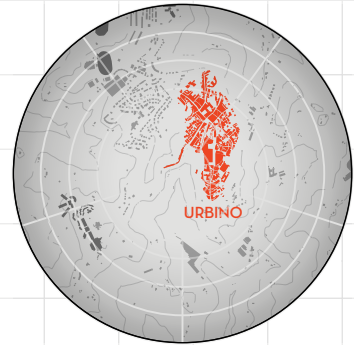
SOURCE



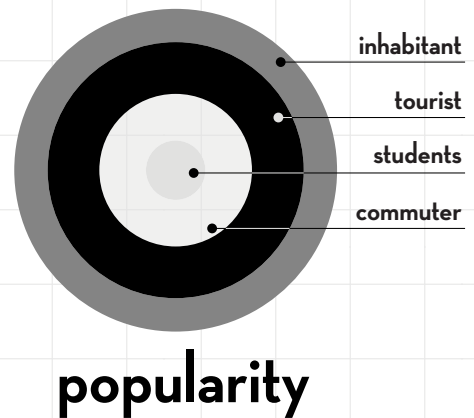
sociated photos of interiors – a home cooking, a couch – still in the picture may appear elements of a exclusively homemade clothing or even be associated with tautological descriptions – "home sweet home". The second of the two locations listed may be reserved for photos in which there appear classrooms, the interior of an office or simply outside pictures. In this case it will be suitably safe to assume the user is a commuter, that lives in the first place and goes to the second location – and the frequency can eventually be established on the uploading dates of the pictures – for work or study.

Applying this methodology of observation to the case of Urbino, by February 2013 we identified one hundred sixty *Instagram* users, which were using the geo-location option in sharing their contents. These profiles have been studied to identify which were the most attended places in the urban centre and who the users actually were. This latter observation is really powerful to the terms of our research, since it permits to identify which are the most attractive spots of the city for students, tourist, commuters and inhabitants and how their dynamics influence each other. It also reveals the places that do not appear in this mapping, probably because they are felt like less representative, unappreciated or simply unknown.

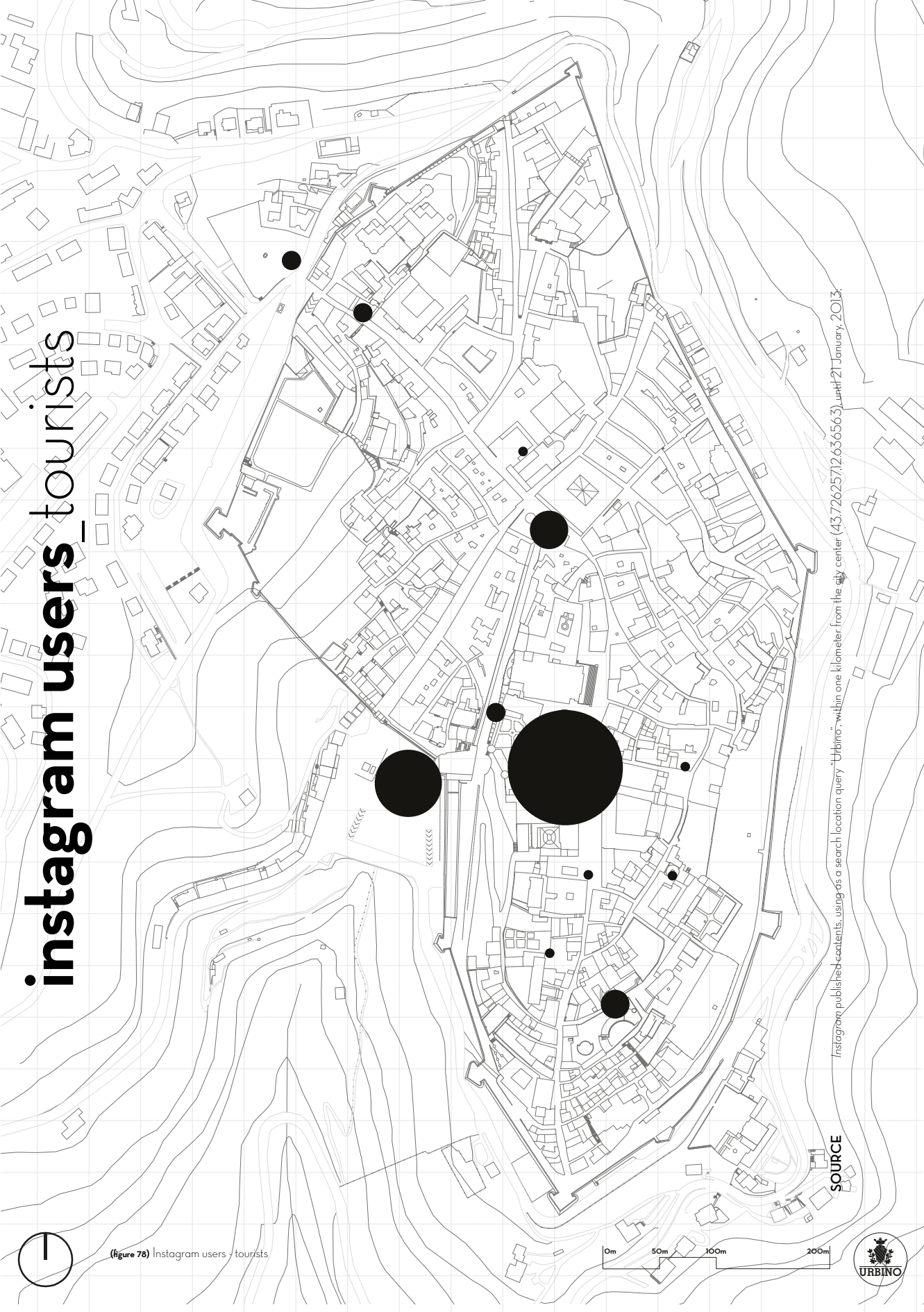
Thus Piazza della Repubblica (9) confirms its role as the main pole of at-



.161
users



instagram users_tourists



(figure 78) Instagram users / tourists

Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712,63.6563), until 21 January, 2013.

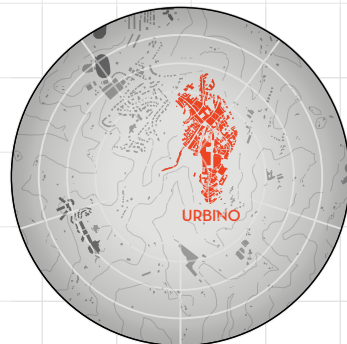
SOURCE



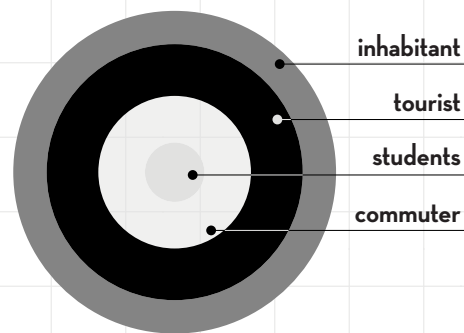
traction for students, but there is also an interesting presence of commuters, whose photos are taken in this place mainly during the weekends, probably because they reach the urban center to meet friends, mates and colleagues outside the university and the working places. Similarly Palazzo Ducale (H) and Pizza Rinascimento (15) reconfirm their value as points of attraction for tourists visiting Urbino, while remaining a significant place for students too. Clearly the incidence of this latter category is more present mainly in the southern part of the city, that host faculties and university libraries.

Very interesting are the results obtained by the Fortezza Albornoz (C), whose photographic contents are provided exclusively by students, that use it as a place for relaxation and leisure in the warmer months, while it remains virtually unknown to tourists and underused by commuters.

Still relevant for the purpose of this research are the results obtained by Piazza San Domenico (17) and by the Botanical Gardens (5). Both spaces with an excellent potential of attraction, as well as urban areas of undeniable quality, yet virtually unknown to any type of user, except for a small number of tourists.



.161
users



popularity



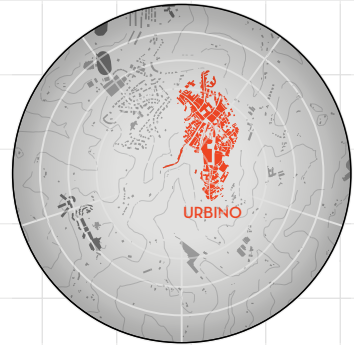
instagram users / inhabitants

(figure 79) Instagram users / inhabitants

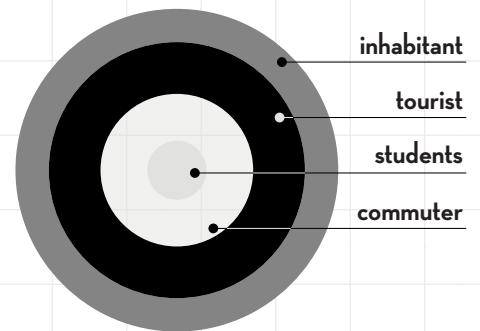
SOURCE Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712,63.6563), until 21 January, 2013.

SOURCE





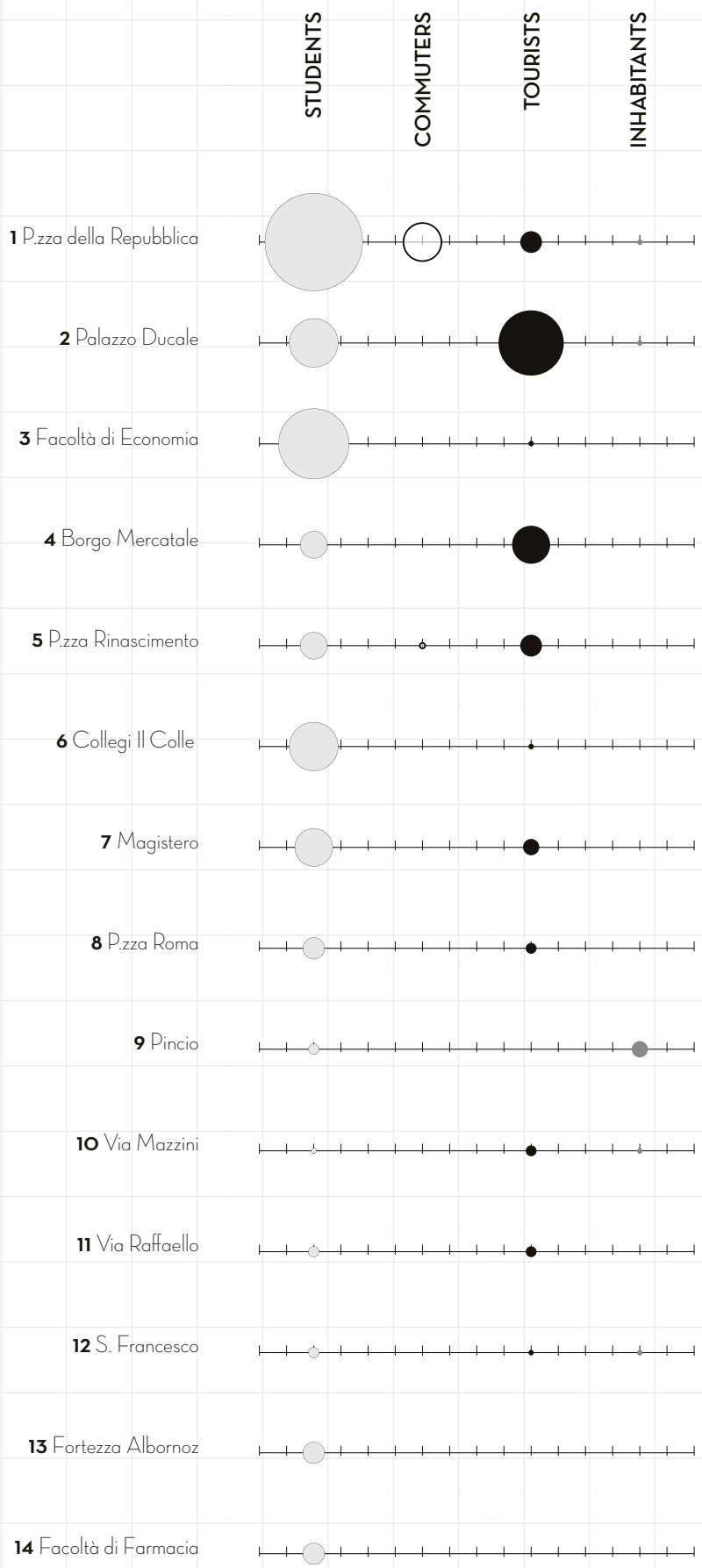
.161
users



popularity

instagram_users_incidence

0 10 50 PICTURES



Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712,63.65663), until 21 January, 2013.

SOURCE

STUDENTS

COMMUTERS

TOURISTS

INHABITANTS



15 Via Torricini



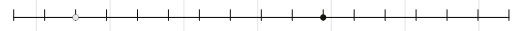
16 Sala del Castellare



17 Collegio Raffaello



18 Giurisprudenza



19 ISIA



20 Università degli Studi



21 Via Piave



22 Collegio



23 Via Bramante



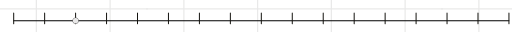
24 San Domenico



25 Via Garibaldi

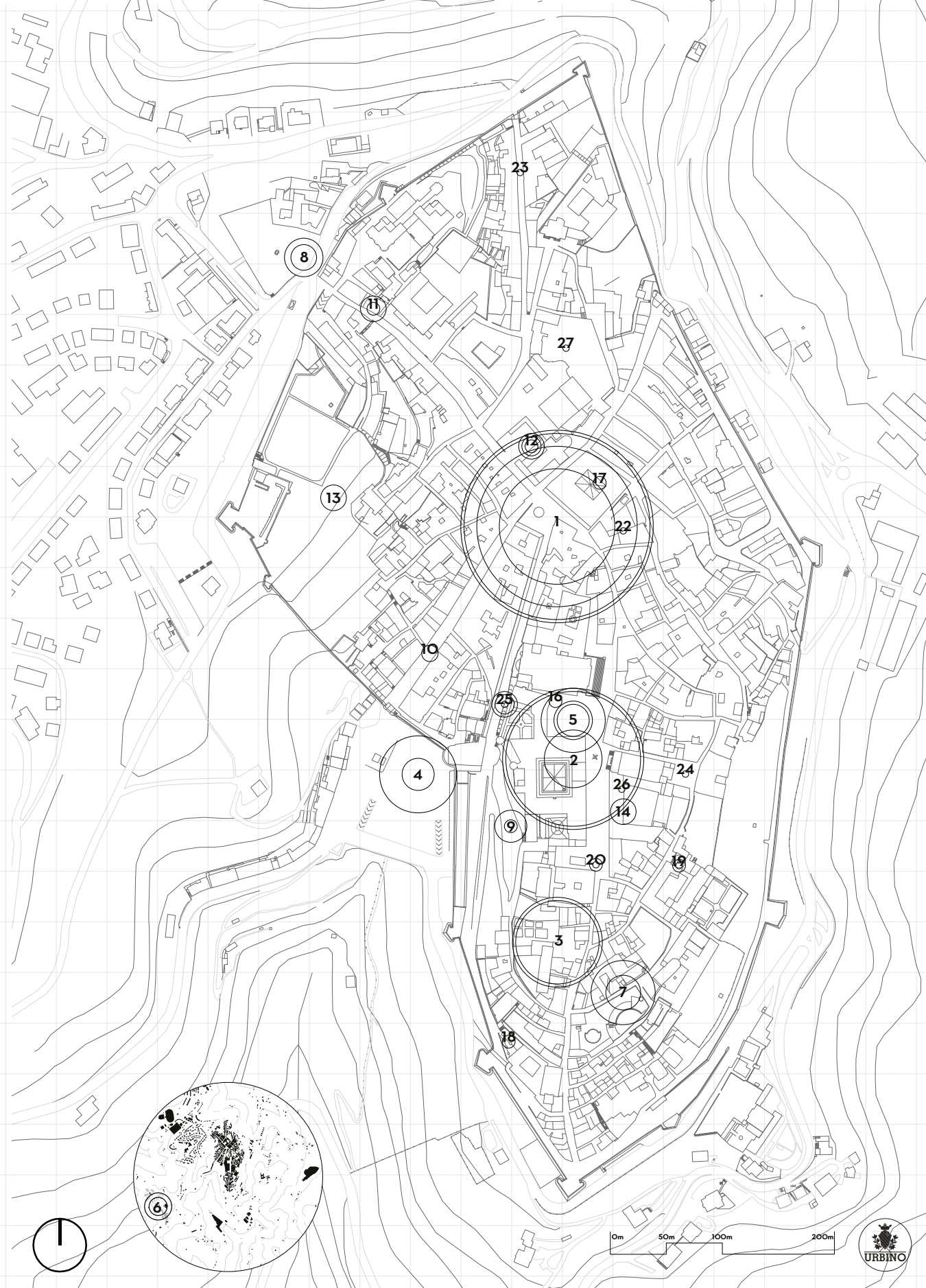


26 Facoltà di Lingue Straniere



27 Orto Botanico

(figure 80) Instagram - user incidence



instagram_discovered uses



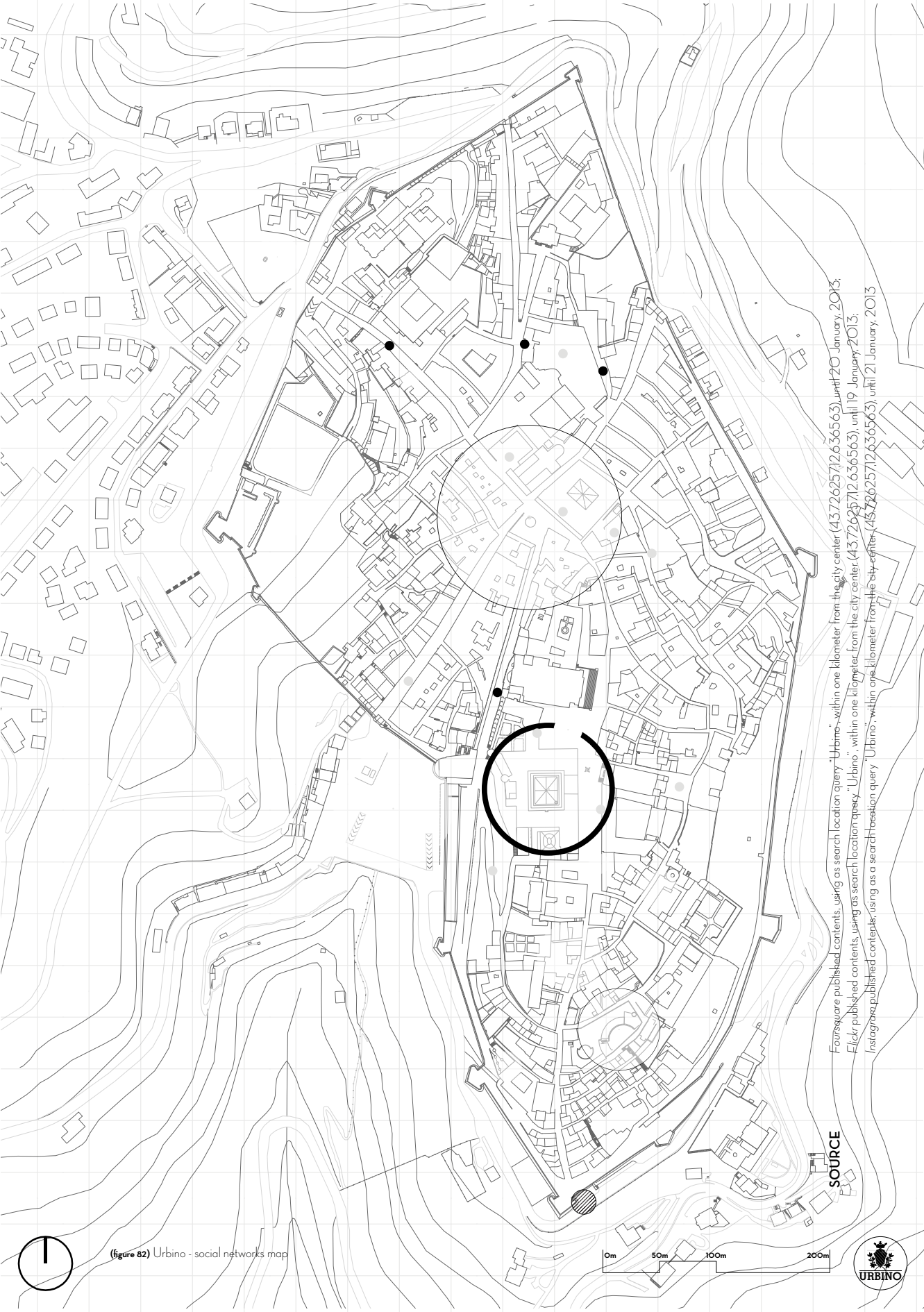
Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712,63.6563), until 21 January, 2013;

SOURCE

(figure 81) Instagram - discovered uses



Summary of social networks contributions



(figure 82) Urbino - social networks map

Four-square published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 20 January, 2013;
 Flickr published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 19 January, 2013;
 Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013

SOURCE



urbino social networks maps

This map is a general overview of the previously analyzed data, users' generated through social network. Although each single social network tends to outline different users or different actions towards the localized places, nevertheless this type of representation is a general map that could help in understanding what are the places packed with social life, at least considering the categories of users using social networks.

Thus it is a sort of general analysis in order to understand what places don't need any particular intervention to enhance their public realm. On the contrary it is a map of places that for different purposes have a lively public realm and could then be used in term of delivering localized information.

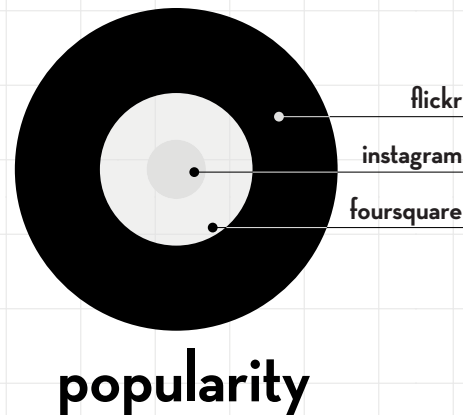
The map consider all the contributions coming from different social networks, in particular the inner circle are the contribution from *Instangram*, the second circle the ones from *Foursquare* and the latter the *Flickr* contributions. *Foursquare* results the most used social network in Urbino, having usually in each place an average ration of 20 check-ins for every picture of *Instangram*.

Thus the contribution of *Foursquare* tend to "monopolize" the map.

In any case the places that have more localized social network activity are Piazza della Repubblica (9), Palazzo Ducale (H) and Borgo Mercatale (16), followed by the park nearby the Fortezza (12) and the Magistero (I).



.5747
tracks



GPS Fluxes

More and more frequently digital devices are equipped with satellite location systems. Initially mainly used for guided navigations tool, to track the user's position and guide him through the shortest or more convenient path toward the destination, these systems were then employ for very different reasons, including social and recreational activities. Detection systems appear both in the social network, when other applications that allow you to track your paths inside and outside the city. Offering, on the basis of described route, the possibility to calculate *CO2* emissions, the number of traveled kilometers, and the burned calories.

The same tool could be very useful in an investigation on the dynamics of people and flows involving an urban center. Through the *GPS*, it is possible to understand the routes that are tracked on a daily basis within a city, and study the conformation of them, the points of intersection, the new branches, as to comprehend more specifically which parts of the city are actually involved in the dynamics affecting its citizens.

Similarly to the way social networks surveys were conducted, the observation of *GPS* tracks can inform on the current state of the city. The advantages are numerous. Certainly the

from
01.03.13.
to
08.03.13.

6 users



- GPS TRACES
- DENSITY

(figure 83) Urbino - GPS traces map

GPS tracks collected using the mobile application Nike Running (iPhone + Android supported), on 15 volunteer subject (students residing in Urbino), from March 1st, 2013 to April 1st, 2013

SOURCE



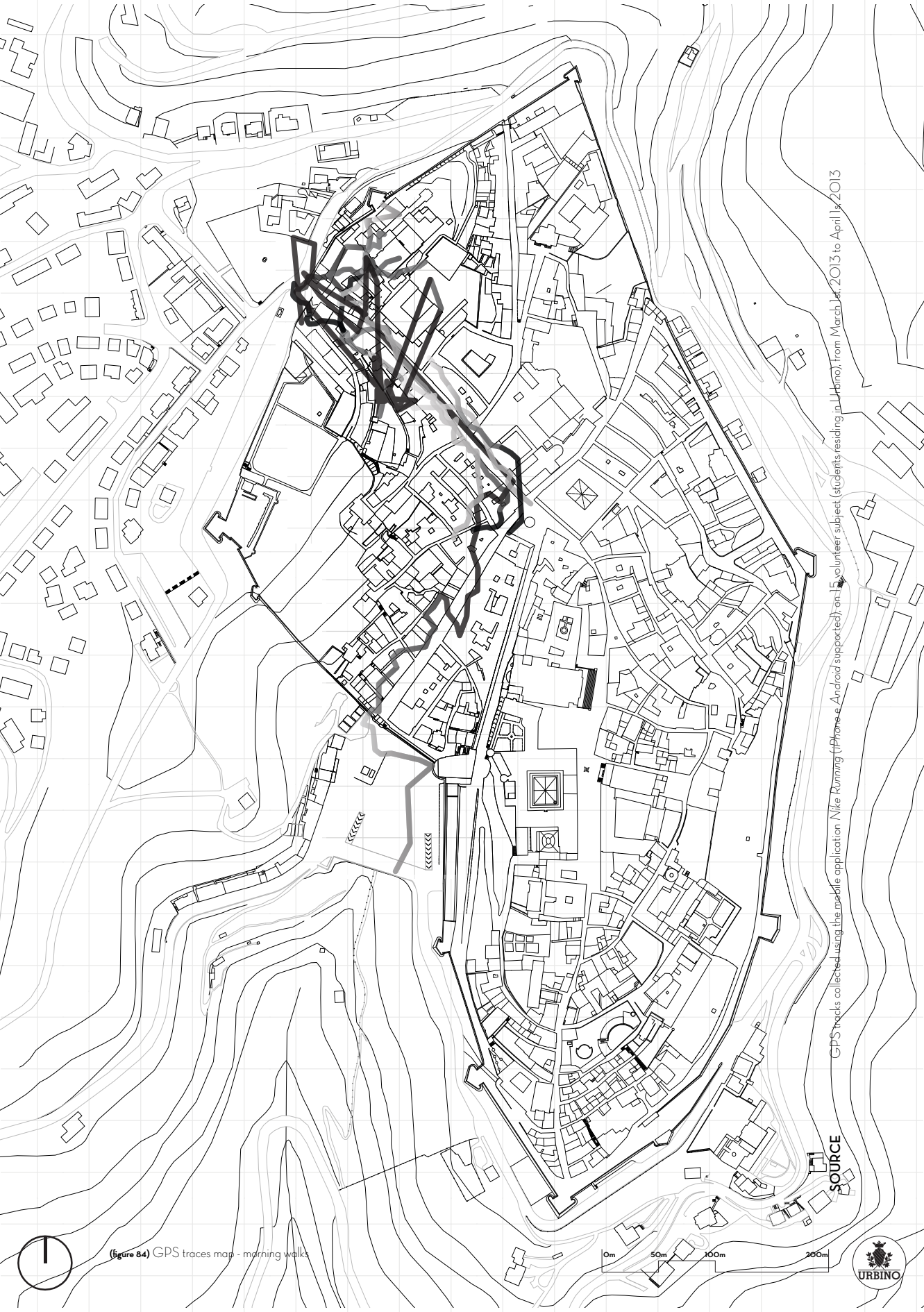
gps traces map_morning walks

main benefit lies in the fact that the use of a tracking system of this type returns an effective and more specific *sign* about the nature of the movements in the city; an operation that otherwise should be made by empirical observation (*how many people passing through a road, that path generally accomplishes by certain users, where it the highest amount of people meets*), implying clearly longer observation times, especially if that at issue is a quiet reality and a non-metropolitan areas, such as that of Urbino.

In our study case, the analysis was carried out on a purely experimental way. Once again, the point was not a quantitative demonstration of the objectives of the thesis, but qualitative. What was expected to be shown is the operation of a research methodology that involves and takes full advantage of digital devices. In this regard, a number of users, though still small, has been involved. They have used the smartphone application by *Nike*, known as the *Nike Running*, which allows you to track *GPS* routes, as well as comprehend the instantaneous speed and the time they have been described at. The surveyed sample was asked to spontaneously draw their paths within the city during the hours of the day. No special suggestions were added. The paths to be traced were free, as well as their number, the distance and the time of day in which to define them.

The results are the thirteen races reported from March 1st, 2013 to





(figure 84) GPS traces map - morning walks

GPS tracks collected using the mobile application Nike Running (iPhone & Android supported), on 15 volunteer subject (students residing in Urbino), from March 1st, 2013 to April 1st 2013

SOURCE

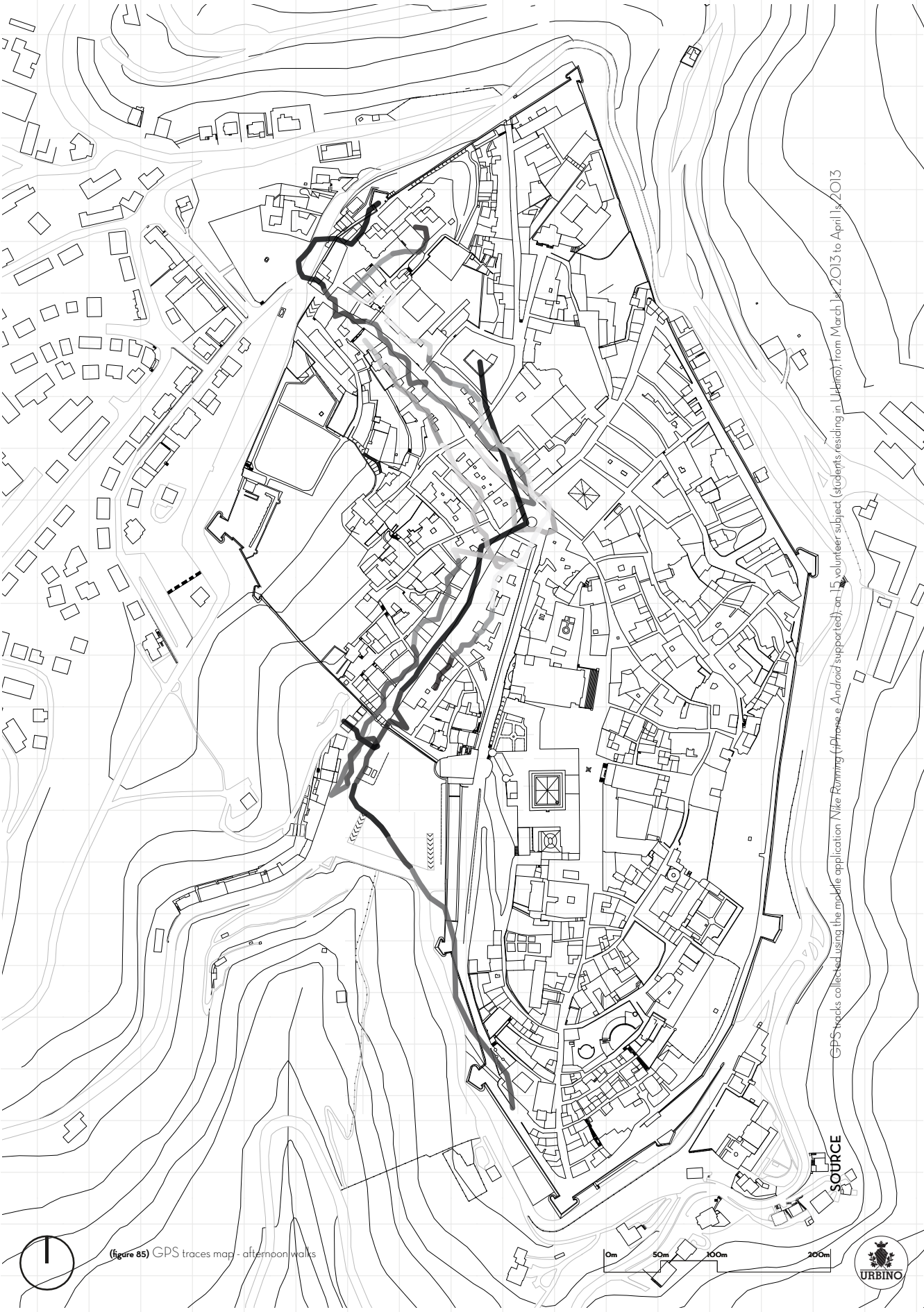


March 9th, 2013 made by six different users and reproduced in the proposed maps.

Once again, the digital devices are used to give visibility on maps of certain phenomena that are generally hidden within the urban fabric; such as that of the daily flows of people. It goes without saying that the nodal point of the survey is in the interpretation of such data. Interrelated with other variables that can be studied, as well as with the results from the traditionally conducted analysis.

In the first case, for example, it has been chosen to cross the *GPS* tracks with the hours of the day, defining three time frames of reference (morning, afternoon, night). An expected, for example, is represented by the possibility to know the time of the day in which the various parts of the city are mainly lively. In this sense, the part of town where the university poles are concentrated is clearly active during the day, otherwise will be mainly affected by night flows the areas where bars and nightclubs are concentrated concentrated areas. Even more such crossing data can lead to understand, at least partially, the perception of users compared to the spaces. For example, places or streets exempt from conventional elements of interest (commercial stripes, local facilities, huge public function) but still affected by significant flows of people, will certainly be the subject of a more detailed study that will enable to understand why these numbers. Otherwise





(figure 85) GPS traces map - afternoon walks

GPS tracks collected using the mobile application Nike Rømming (Phase 2, Android supported), on 15 volunteer subject (students residing in Udarno), from March 1st, 2013 to April 1st 2013

SOURCE



gps traces map_night walks

if there is no trace in some areas during the evening and at night, it might suggest that these roads are perceived as insecure, discouraged or spontaneously prevented by users.

In the second – essential – survey case, the *GPS* tracks are crossed with the information obtained through traditional analysis. The results of the research are similar to those achieved by comparison with social networks outputs, previously treated. Essentially, flows and points revealed by the *GPS* survey could confirm or deny data collected through a traditional urban analysis or reveal hidden dynamics, to be studied.

Finally, regardless of the implication in the study of these dynamics aimed at the urban planning, the study made through *GPS* tracks could be a key tool for the public administrations, in order to deal with other issues in the city. Identifying a group of volunteers tourists, for example, it would be possible to trace their itineraries within the city, in conjunction with the time spent in each place, as to verify the correct operation of the signals and indications of exploration .

night walks
18:00_24:00

3 walks

average walk time
01:29:05



(figure 86) GPS traces map - night walks

GPS tracks collected using the mobile application Nike Running (iPhone & Android supported), on 15 volunteer subject (students residing in Urbino), from March 1st, 2013 to April 1st 2013

SOURCE



**2.2.3 Crossing results: a praxis of comparing
the traditional and the digital analysis
applied to the case of Urbino**

There are some possible outcomes from the cross of data generated through a traditional analysis and through a digital one. We try to trace the three main possibilities (discovery, matching, denial) and then observe the specific case of Urbino.

Assumed that an urban analysis based on traditional methods, as well as a digital one have their respective advantages and disadvantages, but they could both act autonomously with quite efficient results. It is very interesting to consider the outputs of a scenario delineated confronting the two systems: the comparison between the traditional urban analysis and the digital analysis can provide very relevant results in terms of comprehension of the dynamics that regulate a city.

Trying to abstract and synthesize the enormous number of potential outcomes of these collected data overlapping, it could be possible to identify three main categories:

Discovery. The digital analysis reveals the existence of certain urban spots that are not detectable at a traditional research. The outcomes of the investigation identify new spaces within the city.

For instance, this may happen if considering uncommon gathering places, such as a fuel station where a certain groups of users, students for example, generally meet after classes or during the weekend, maybe just because there is a bar selling cheap drinks. At a classical analysis the station will result as disconnected from the urban fabric, to the naked eye excluded from the main fluxes of people within the city. Instead, if observed from the digital proofs profile it will emerge as a meeting point, probably with pictures or contents uploaded there. In this case, the digital analysis has the ability to trace a phenomenon of social aggregation that traditional tools do not sense.

Matching. The digital analysis spots a series of evidences actually corresponding to those individuated through the use of the traditional one. The results obtained confirm the empirical analysis previously, simultaneously or subsequently conducted on places.

It could be the case of the main piazza of an historical urban centre. The classical examination suggests – almost without doubts – that place embodies a poles in the city: it's the convergence point of the main trading routes, publicly used facilities are overlooking, the most of dwellers are spotted there at different times of a day. Observing the situation through social networks marks and GPS traced paths, they both witness the public space as significant. There is a conspicuous amount of pictures, videos, comments, and feedbacks about the place and it results as an intersection point of the geo-localized tracks. In these

circumstances it is quite fair to affirm that the identified spot is clearly a node for urban dynamics and must be kept in consideration in the future phases;

Denial. The digital analysis reports no or little evidences referred to a point that at a classical observation seems to be a major one. The absence or the insignificant number of results neglects the expected outcomes.

As an example, we report the case of a square in front of a museum or art collection that should be included among the urban emergencies at a traditional analysis – as it appears in all the maps concerning the cultural attractors of the city – but actually it is not detected by the digital research. In this instance, we are referring not to the museum as a building itself, but to the facing open space – a square, a courtyard, a garden – that is generally related to this kind of public activities and that in best-practices examples actually works as gathering place. It's the case of the *Centre Pompidou* in Paris, the *Tate Modern* in London, the *Whitney Museum* in New York.

What is it possible to assume from this kind of scenario, is that the urban pole at issue does not perform its function properly; it doesn't actually catch people or at least not the segment of the population that makes use of social media.

However the objection that these kinds of cultural activities are aimed at a more adult audience – that does not make use of smartphones or is not registered to social networks – can't be sustained: not being able to attract a young and technologically equipped slice of population is still a missed opportunity for an urban emergency.

The most probable scenario, up to the process of comparison here described, is the emergence of the three categories previously introduced simultaneously. Thus, it is just as likely one of them to emerge more than the others, though these latter will rarely disappear completely.

Since the main goal of our research thesis is to delineate the possibilities offered by the employ of digital technologies to enhance and make more liveable the public realm, the three categories thus outlined, regardless their own intensity as a single element must be considered synergistically. The strategy of intervention should act concurrently on canonized public spaces, as well as on underused and on unusual ones. The revitalization of a deserted space or the adaptation of the unusual space could be facilitated putting them in network with a popular piazza, endorsing them where the promotion has a high probability of being caught by the users, that is in most frequented areas of the city.

TOURISTS DYNAMICS

+ FLICKR POLES

In order to deeply understand the dynamics of the tourists visiting Urbino, it could be appropriate to overlap the information collected by traditional maps and through empirical observation, to contents from *Flickr*. The formers consist mainly in the chief touristic poles and main fluxes within the city, the latter in geo-localized pictures taken by users.

The more obtained result is in terms of *matching*, since the digital analysis proposed actually seems to strengthen the indications about urban collectors made using traditional tools.

Palazzo Ducale (4) and the overlooking Piazza Rinascimento (5) confirm their role as the main urban pole for tourists, with an extremely high quantity of pictures shared on *Flickr*.

Piazza della Repubblica (7) is relevant as well, since it represents the crossing point of the main fluxes of people, publicly used activities and local facilities are placed around it. In this place the percentage of *Flickr* picture is slightly lower compared to that of Palazzo Ducale (4) and it could be a sign of less representativeness of the place for tourists: Piazza della Repubblica (7) is visited primarily because is a waypoint for the exploring itineraries.

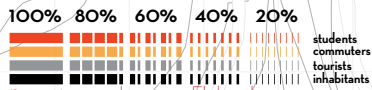
None of the other churches or beautiful civic buildings or open places are present in the *Flickr* pictures. It was a surprise not to find either Raffaello house (8) either the museum of the city (9). That it is a case of *Denial*, as those places, even if they are thought in order to attract tourists, they are not actually touristic nodes.

A positive surprise is the presence of the *Magistero* (10) by the architect Giancarlo De Carlo, that apparently seems to represent a must-see in Urbino, according to *Flickr* map; it is a surprise because its presence is not advertised from the outside, neither from the architecture neither from some sign. Probably those contributions come from a specific typology of tourist but that is a sign of something that needs to be advertised inside the city centre.

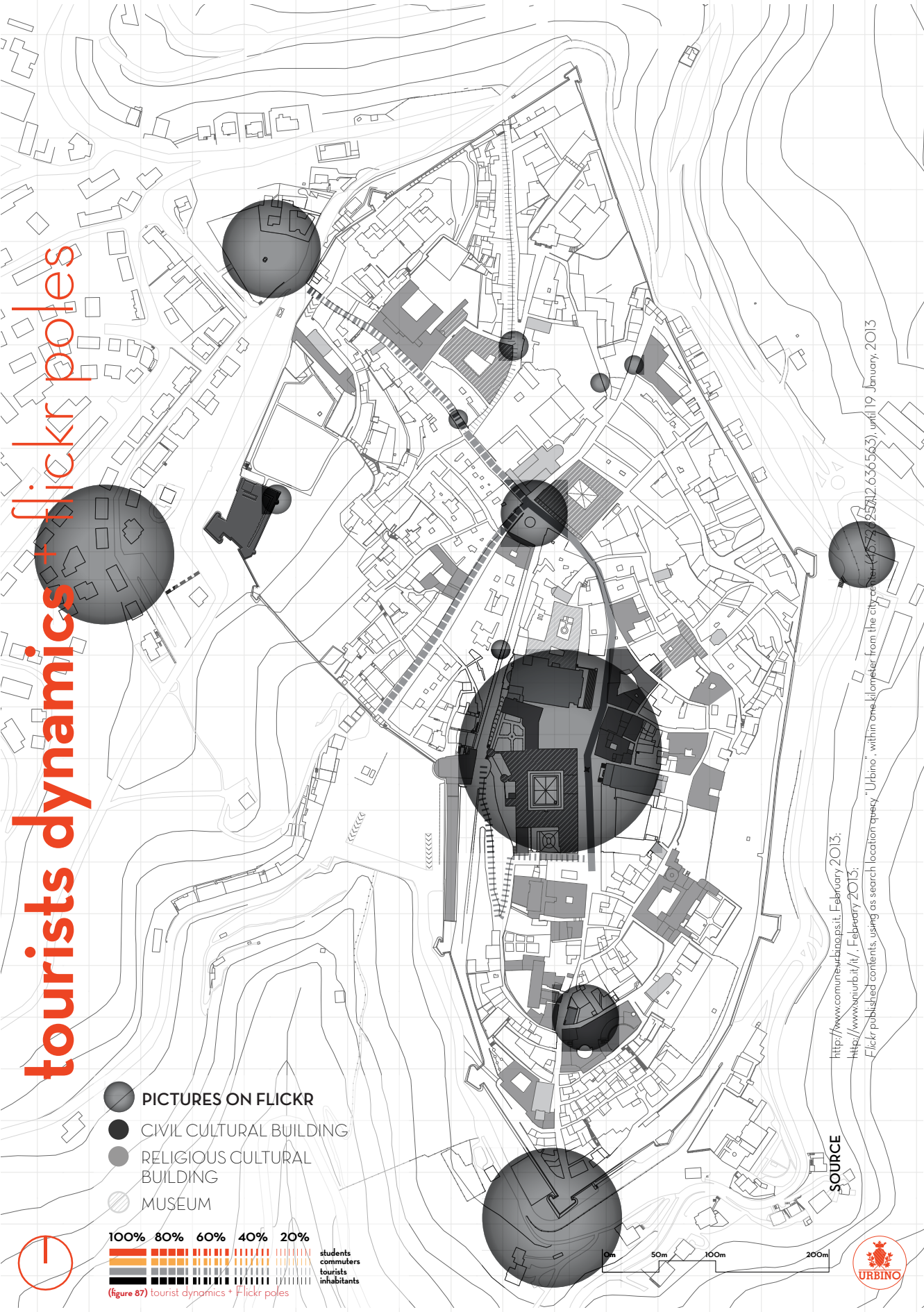
Another positive surprise is the presence of Piazza Sant'Andrea (11), that doesn't show any touristic correlated activity except from a restaurant, and that could then enhance this feature of being in tourists routes.

tourists dynamics + flickr poles

-  PICTURES ON FLICKR
-  CIVIL CULTURAL BUILDING
-  RELIGIOUS CULTURAL BUILDING
-  MUSEUM



(figure 87) tourists dynamics + flickr poles



<http://www.comuneurbino.ps.it/>, February 2013;

<http://www.urbino.it/>, February 2013;

Flickr published contents, using as search location query: "Urbino" within one kilometer, from the city center (43°42'25.7425572, 12°03'36.5663), until 19 January, 2013

SOURCE



TOURISTS DYNAMICS + INSTAGRAM POLES

In this case with *Instagram*, we could see how the general situation is the one of *denial* with a lot of possible attractions that are not considered by tourists in their pictures and the major concentration of the contributions in Piazza Rinascimento (5) with Palazzo Ducale (4), Piazza della Repubblica (7), and Borgo Mercatale (1).

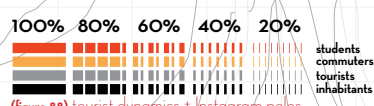
Except from the museum in Palazzo Ducale (4), none of the others in the city centre attracts tourists. There are some contributions from the Magistero (10), and none about the Fortezza (12).

This is actually a big failure considering how the city centre of Urbino is easy to visit in just one day. Tourists, probably for the lack of information, don't know where to go and tend to stick to easy to guess routes: Palazzo Ducale (4) is probably what they came to see, and Piazza della Repubblica (7) is a mandatory stop to reach anyplace in the city.

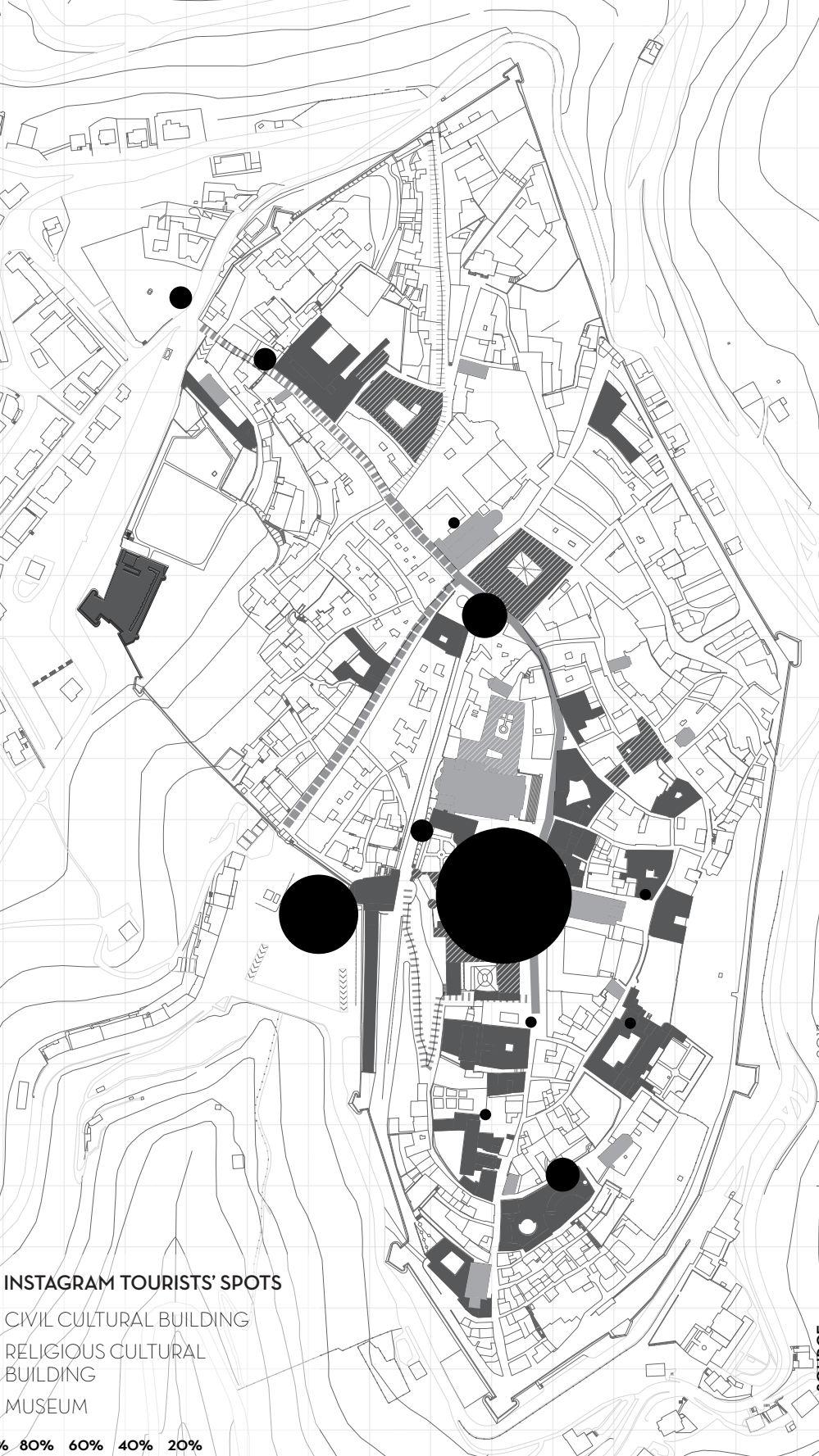
tourists dynamics + instagram poles



- INSTAGRAM TOURISTS' SPOTS
- CIVIL CULTURAL BUILDING
- RELIGIOUS CULTURAL BUILDING
- MUSEUM



(figure 88) tourist dynamics + Instagram poles



SOURCE

empirical in situ survey, January 2013;
<http://www.comuneurbino.psf.it>, February 2013;
<http://www.urbino.it/>, February 2013;
 Instagram published contents, using as a search location query "Urbino", within 0,65 kilometer from the city center (43.72625712, 63.6563) until 21 January 2013.

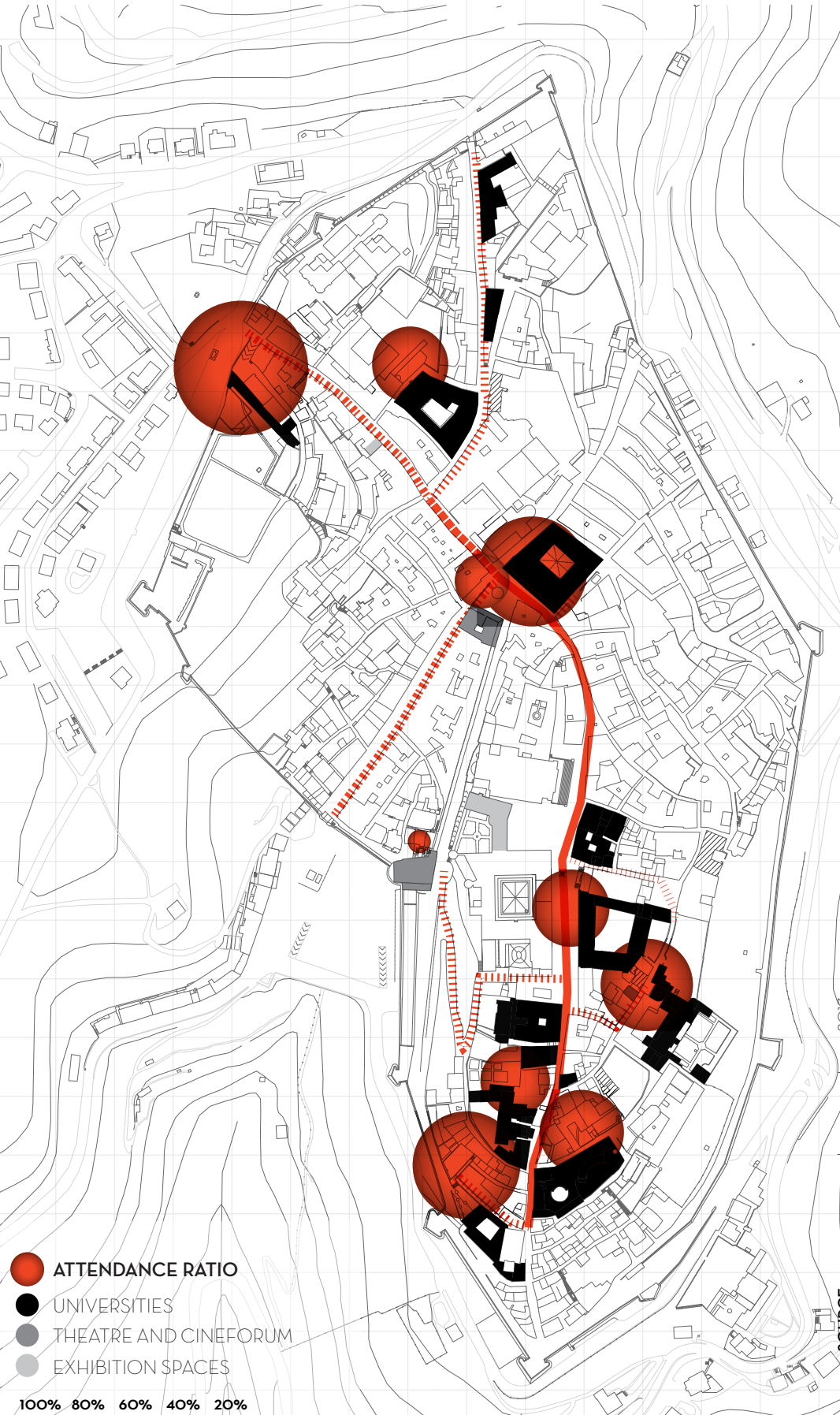
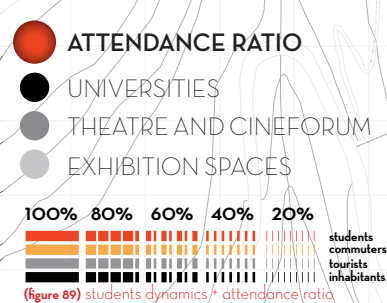


STUDENTS DYNAMICS + FOURSQUARE POLES

The overlapping of the main students-related points within the cities (universities, libraries, study places) and the fluxes these users describe, to the evidences reported by *Foursquare* reveals fascinating results as well.

Also in this case, the main outcome of this operation is the validating of the results. The information collected by traditional maps and that of *Foursquare* pictures reveals the same urban poles for student. Particularly in correspondence of the university centres the number of photos intensifies, confirming the attitude of identification with those places, as already discussed in the chapter on the virtual analysis.

students dynamics + attendance ratio



SOURCE

empirical, in situ survey, January 2013;
<http://www.comune.urbino.psr.it/>, February 2013;
<http://www.ururbit.it/>, February 2013;
 Foursquare published contents, using as search location query: "Urbino", within 0,65 kilometer from the city center (43.72625712, 63.65663) until 20 January 2013



STUDENTS DYNAMICS

+ INSTAGRAM POLES

The result of the overlapping of the students' traditional maps with the points of interest they individuate through *Instagram* uploaded pictures seems to be fairly coherent. Practically all the spots defined by the social network are located along – or at least nearby – the main fluxes.

The considerable number of pictures taken on Piazza della Repubblica (7) confirms this place as the main pole for students within the city. Moreover, the highest incidence of very photographed places is found in the Southern part of the city, where most of the universities are concentrated.

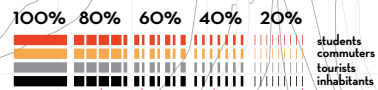
Also in this case Palazzo Ducale (4) obtains a great sensation, demonstrating its transversal role in the urban settlement, regardless of the type of users. The students, even if not actually using that space, neither spending there long periods of time, nor establishing whatsoever activity, feel the Renaissance building and the facing square as representative elements of the city they live in and they witness it on social platforms.

Piazza Mercatale (1) is important as well and, especially for those students who live in the Collegi, this place represents the first point of contact with the historic centre. Then Piazza Mercatale (1) as well as la Fortezza (12), apparently are considered among students, taking pictures of themselves in *Instagram*, possibly for leisure time coming from temporal functions introduced in those places.

Piazzale Roma (13) is present in *Instagram* maps although that is not the location of any students' connected functions. But, as it is evident by the maps matching, that is a place to cross to reach all the major students facilities. So maybe, passing by they tend to stop and take a picture there.

students dynamics + instagram poles

- INSTAGRAM STUDENTS' SPOTS
- UNIVERSITIES
- THEATRE AND CINEFORUM
- EXHIBITION SPACES



(figure 90) students dynamics + Instagram poles

figure 90



empirical in situ survey, January 2013.

<http://www.comuneurbino.ps.it/>, February 2013.

<http://www.urbino.it/>, February 2013.

Instagram published contents, using as a search location query: "Urbino", within a 4 km radius from the city center (43.7262572, 12.6365663) until 21 January 2013.

SOURCE



COMMUTERS DYNAMICS + INSTAGRAM POLES

The number of commuters result from the *Instagram* profiles studied is not extremely incident, as well as the possibility to empirically trace their main fluxes in the city is quite limited. What is it possible to report is that the two spaces thus identified are once again Piazza della Repubblica (7) and Palazzo Ducale (4).

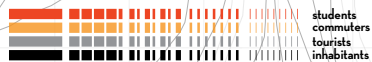
Commuters are those considered to live outside the city centre, mainly in little villages, and then reaching Urbino either to study or to go out. The only place is then Piazza della Repubblica (7), and probably their use of the city centre is just to enter from Piazzale Roma (13) or from the Borgo Mercatale (14) and go to Piazza della Repubblica (7). Having some contributions about Piazza Rinascimento (5), was quite different form the forecasted flows of the commuters. This possibly due to the fact that in any case Palazzo Ducale (4) facing that square, is the symbol of the city, so that if you want to say in your virtual social sphere you went to Urbino, that is the building you have to take a picture of it.

commuters dynamics + instagram poles

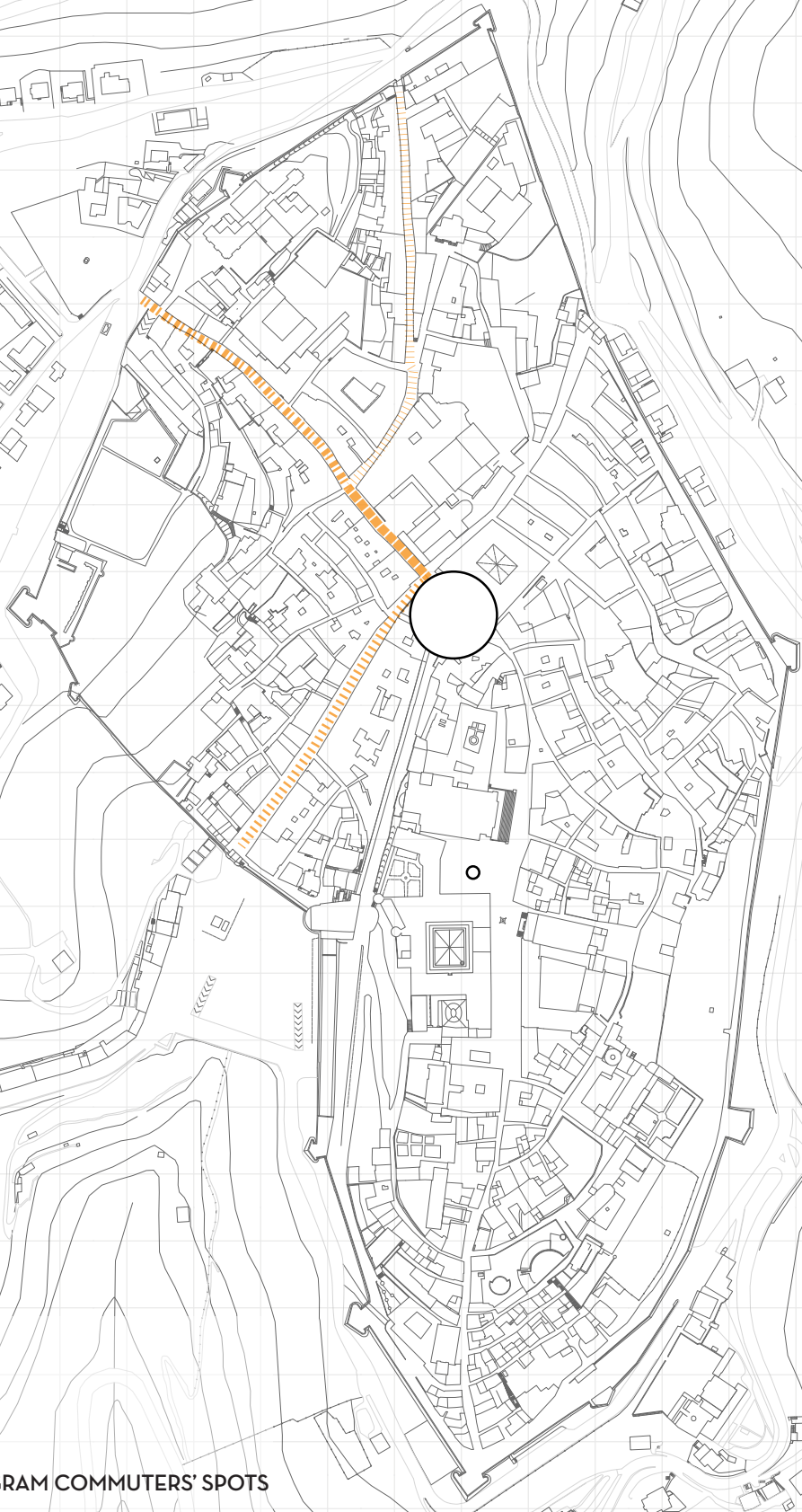


○ INSTAGRAM COMMUTERS' SPOTS

100% 80% 60% 40% 20%



(figure 91) commuters dynamics + Instagram poles



empirical in situ survey, January 2013;

<http://www.comuneurbino.psr.it>, February 2013;

<http://www.urbino.it/>, February 2013;

Instagram published contents, using a search location query: "Urbino", within a 0.6-kilometer radius of city center (43.72625712, 63.6563) until 21 January 2013.



INHABITANTS DYNAMICS + INSTAGRAM POLES

The overlapping of the main inhabitants-related points within the city centre (main commercial facilities, theatre and cine-forum) and the fluxes these users describe, to the evidences reported by *Instagram* shows not that relevant results.

Probably due to the fact that the categories of inhabitants, which are those who live inside the extended city centre, meaning all the built environment inside and nearby the walls, who are not students, don't use too much *Instagram*.

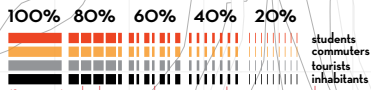
Some points in common between the two analysis are the relevance of the Sala del Castellare (6) and of the Teatro Raffaello, that is present in both analysis.

Then from *Instagram*, it is possible to notice a lot of contributions of the Pincio (14), that as previously explained could be a *Discovered* hotspot, in terms that its relevance that was not forecasted by the traditional analysis, is then revealed by the one lead through social networks. Probably this walk is particularly relevant for the beautiful views of the landscape it offers. Weirdly there is not any contribution about via Raffaello(15), that was considered as the backbone for inhabitants in term of commercial facilities but it is not present at all in the *Instagram* analysis.

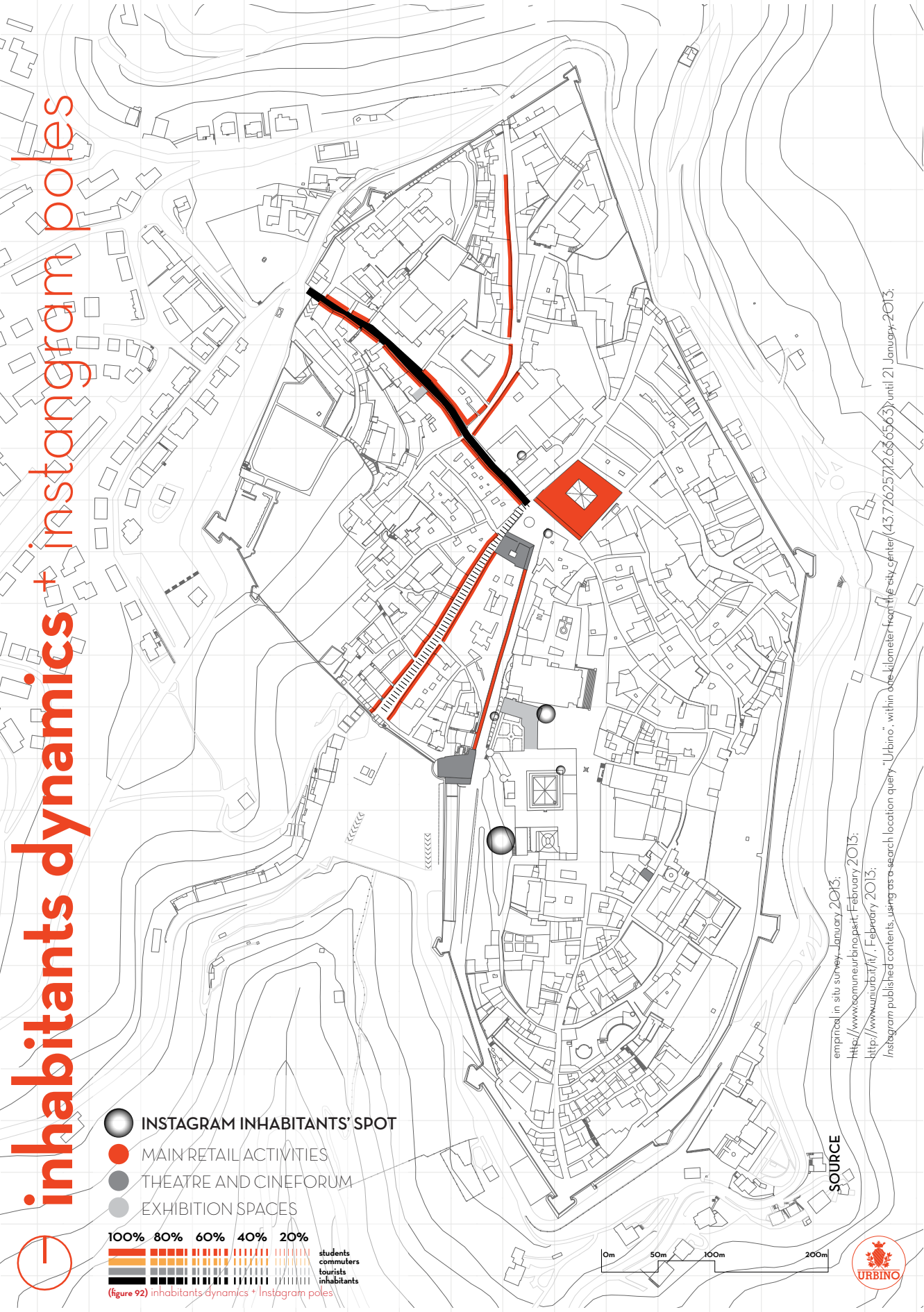
Another interesting *Instagram* discovery, it is the presence of Piazza San Francesco (16). In fact even if not mapped in the traditional analysis due to the temporality of the facility, this is the location of temporary market that sells local food on Sunday, representing then a major attraction for inhabitants.

inhabitants dynamics + instagram poles

-  INSTAGRAM INHABITANTS' SPOT
-  MAIN RETAIL ACTIVITIES
-  THEATRE AND CINEFORUM
-  EXHIBITION SPACES



(figure 92) inhabitants dynamics + Instagram poles



empirical in situ survey - January 2013;

<http://www.comuneurbino.ps.it/>, February 2013;

<http://www.urbino.it/>, February 2013;

Instagram published contents, using as a search location query "Urbino", within a 0,6-kilometer radius of city center (43.72625712, 63.65653) until 21 January 2013;



2.2.4 **Crossing results: points of intervention and anchor points**

CONCLUSIONS

Thus from the previous analysis we traced what could be considered the places of our intervention, open public spaces, at the state of art underused, that have aesthetical quality and the possibility to implement different uses. At first we selected the places that were surrounded by underused buildings that could then change their function, and had aesthetical quality. Then we crossed those data from a summary of the analysis coming from data of the social media, excluding all the places (like Piazza San Francesco (8) and the park nearby the Fortezza (12)) that actually registered an highly level social network use, thus activities.

The final selected places were the park nearby the passage Piero della Francesca (2), the open space behind the justice court (3), the Piazza San Andrea (4), the botanical garden (5), the Piazza Piazza Gherardi (17) and Borgo Mercatale (16) with the Data (G).

Borgo Mercatale actually is a really used place in particular because the majority of people need to go there in order to enter the historic centre. But its choice has to be connected with the reuse of the Data (G) and the dismissing of this place in some year as the main parking lot and the landing of some bus tracks.

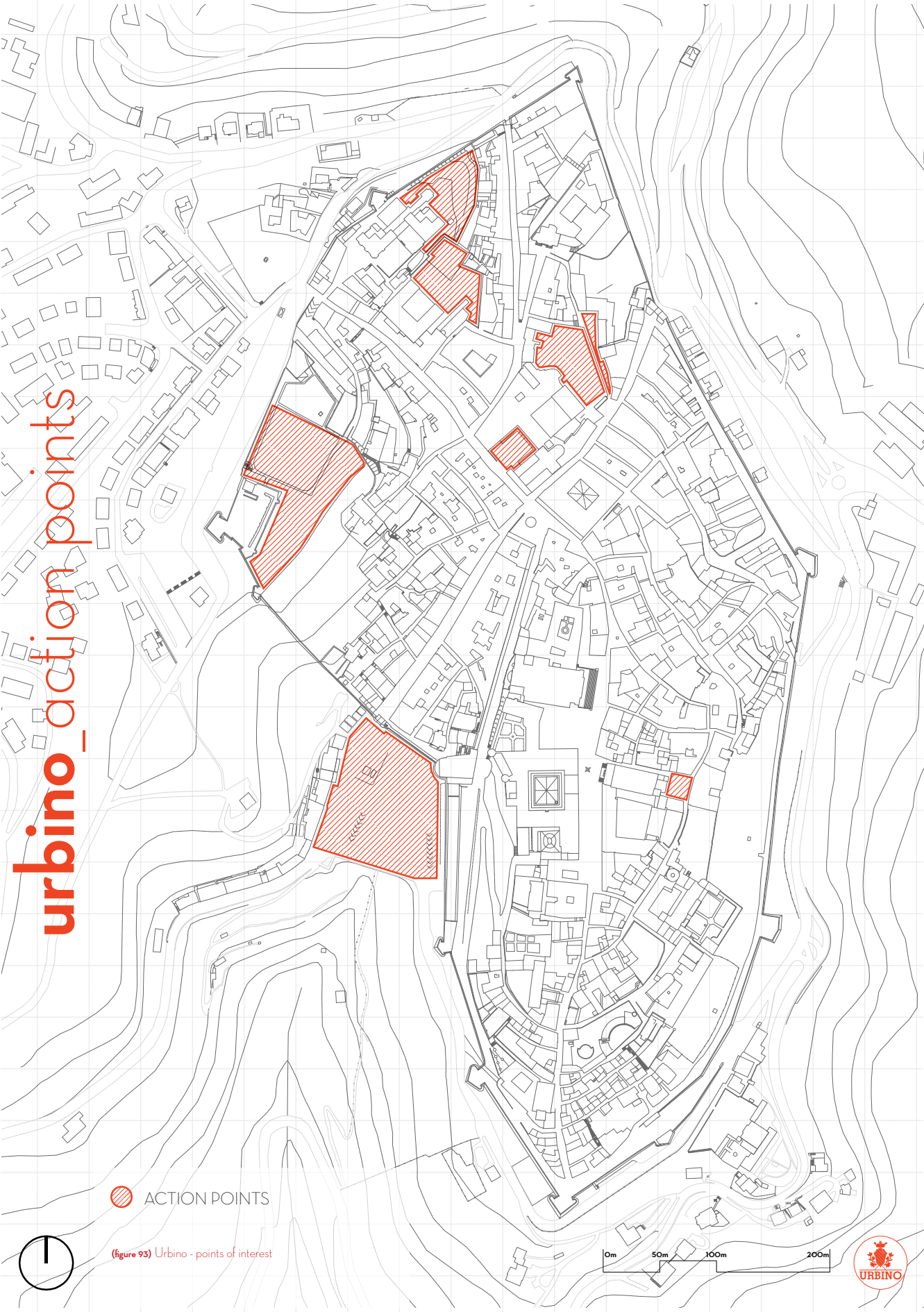
At the same time we used traditional analysis and data coming from social networks in order to trace the most used public spaces that could become the anchor of our invisible infrastructure picking Piazza Della Repubblica (9), Piazza Rinascimento (15), the park nearby the Fortezza (12), piazza San Francesco (8) and the square facing the Ersu dorm in via Nuova (11).

In order to stress those conclusion further analyses were conducted. We took some pictures of the latter places for seven days and then we tried to make a collage finding where in those places people tend to concentrate, understanding then what would be the most suitable location for a screen that generally informs about the events and the social sphere in Urbino historic centre.

urbino_action_points

 ACTION POINTS

(figure 93) Urbino - points of interest



urbino_action points + social networks

- PLACES WITH SOCIAL NETWORKS CONTRIBUTIONS
- ▨ ACTION POINTS

(figure 94) Urbino - points of interest + social networks



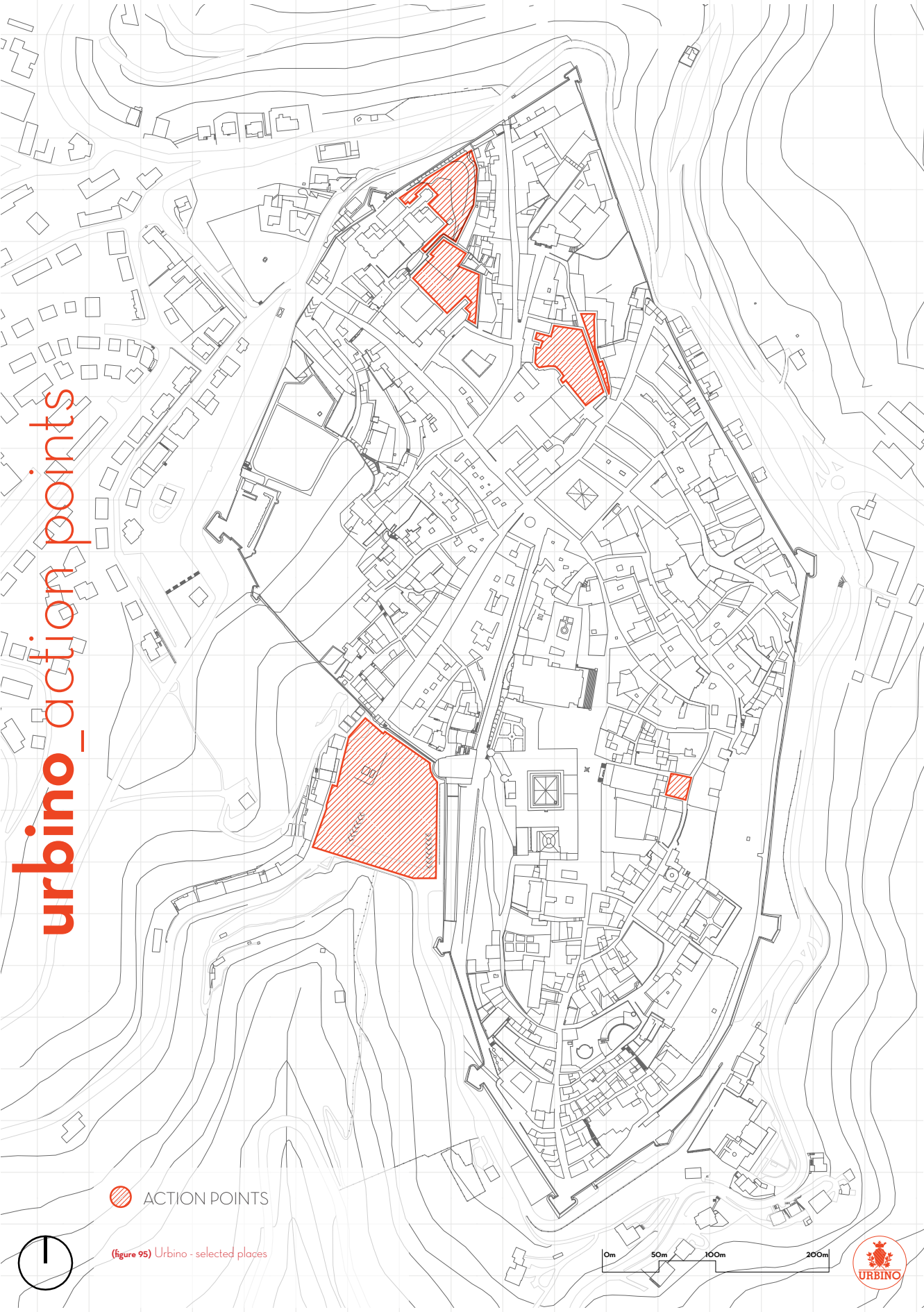
SOURCE
Foursquare published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 20 January, 2013.
Flickr published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 19 January, 2013.
Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013.



urbino_action_points

 ACTION POINTS

(figure 95) Urbino - selected places



urbino_social networks + anchor points

- ANCHOR POINTS
- PLACES WITH SOCIAL NETWORKS CONTRIBUTIONS

(figure 96) Urbino - social networks + anchor points



SOURCE

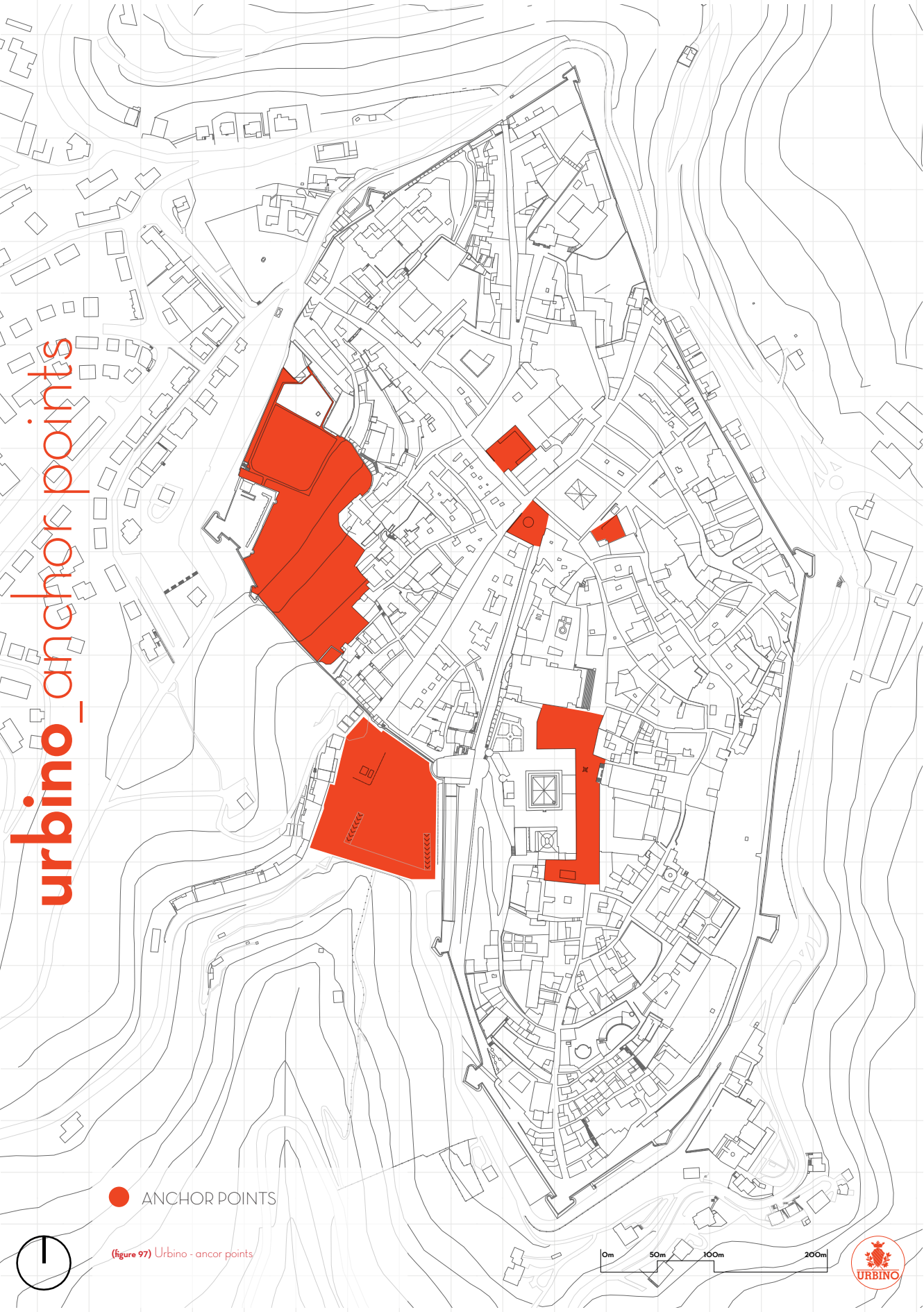
Foursquare published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 20 January, 2013.

Flickr published contents, using as search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 19 January, 2013.

Instagram published contents, using as a search location query "Urbino", within one kilometer from the city center (43.72625712.636563), until 21 January, 2013.



urbino_anchor points



● ANCHOR POINTS

(figure 97) Urbino - ancor points



anchor points_distribution of people



(figure 98) anchor points - distribution of people, Piazza Rinascimento

Piazza della Repubblica



(figure 99) anchor points - distribution of people, Piazza della Repubblica

Piazza Rinascimento



anchor points_distribution_of_people



(figure 100) anchor points - distribution of people, Fortezza Alborno

Fortezza Alborno



(figure 101) anchor points - distribution of people, Piazza San Francesco

Piazza San Francesco



anchor points_distribution_of people



(figure 102) anchor points - distribution of people, Collegio ERSU

Coellegio ERSU

2.3

**A strategy to enhance the liveability of the historic public realm
for the inhabitants**

2.3.1 A system of attractive “points” spread in the urban settlement

In order to create the condition to enhance a more liveable Urbino, the main goal of our intervention was based on the creation of a network of scattered light intervention, working together a unique system, thanks to the possibility offered by the employ of digital technologies. Two types of spaces are object of our intervention: the anchor points – venues resulting from the analysis to be the most popular and attended by the city dwellers – and action points – beautiful open spaces, practically unknown and not used by the citizens, where new activities should be established as to revitalize the area. As suggested in a proposal elaborated within the joint meetings for the elaboration of the Piano Strategico, we valuated to introduce in the anchor points a series of publicly used function, aimed at creating synergies and collaboration among the citizens. The final goal is to originate within the city new scattered poles, but working as a single system capable not only to create new sources of attraction, but especially to generate a complex network of relationships that mutually enhance each other, work synergistically and ensure, through additional technology, the presence of the functions performed.

The main goal of our intervention was to reconstitute to the citizens a more liveable Urbino. Since a chief feature of a city is to provide spaces to ensure and encourage the associate living and the concentration of individuals and functions, they must represent an effective response to the needs and desires of citizens.

Urbino, as previously discussed, is a great university pole, with a number of young people enrolled in universities equivalent to that of native inhabitants. Thus students certainly represent a significant slice of the population of the city if not a prior one, especially if the area considered focuses only on the

historic intramural city. As mentioned above, these are an absolutely unique type of users, because they are generally temporary ones: students moved to Urbino to attend the university and then they leave the city once their studies are completed.

The greatest threat was found in the alienation that students demonstrate towards the spaces of the city, due to a lack of awareness of the common value of public spaces. Such indifference is further exacerbated due to the failure of these venues in satisfying the needs and demands of the student users.

The integral conservation of the architectural and historical heritage of the city, further intensified by the declaration as *UNESCO Site*, makes it impossible the hypothesis of physical intervention on the places of the city, trying to satisfy the demands of those who live – or should live – them.

The objective of our work, therefore, is to give indications of intervention that will make the city's public spaces more suited to the needs of university students, keeping in mind the requirements dictated by the use of digital device, that among these are particularly spread. The operation should return a most livable city not only to students, but should recollect all the dwellers of the historic center of Urbino, as well as provide new insights of attraction for tourists and visitors.

The historic city is itself a fully functional construction, from the point of view of the physical interconnection between the spaces: there is an excellent network of public spaces that operates through an efficient redundancy of the connections, there is a clear hierarchy of spaces and a high architectural quality of the constituent elements. Therefore, the focus should be directed not so much to the intent to improve these physical characteristics – that are objectively excellent – but above all the intervention should encourage the creation of another network, equally important for the vitality of a place: the one of information.

The precepts of networked urbanism are then used to reconstitute a series of spaces in which the aim is to create contact and visibility of the parts to the whole, although these former remain punctual spots within a complex urban system. In addition, the urban theories of *Acopuntura Urbana* suggests the possibility to intervene *pinching* with small transformations in isolated points of the urban system (similarly to what happens in the technique of the traditional oriental medicine) and obtain from these some benefits able to expand to the entire system, generating a widespread improvement of the city at large.

Similarly the possibilities offered by technologies – internet connection, vid-

co-streaming, a continuous exchange of information – created the opportunity to consider a series of isolated points within the urban fabric, that work synergistically as if they were physically co-present. The idea of urban condenser, as a building that reproduces the workings system of an urban environment and hosts a large number of different functions, is brought back to the spaces of the city, creating synergies not through physical contingency, but through flows of information.

Through the comparison of the traditional analysis with the tools of the digital ones – together with the contribute of citizens participating in the public life of the city, particularly in the development of the *Piano Strategico* – we arrived to define two groups of spaces that are object of the intervention: the *anchor points* and *points of action*.

It is relevant to observe more in details the specific characteristics of these two identified spaces:

- . The *anchor points* are those areas of the city that either from the traditional analysis or the empirical observation, turn out to be the most popular points in the city. These are spaces that for different reasons are subject to substantial flows of people and in this sense they stand out as the most representative poles of Urbino. Since these venues already perform their function as meeting points, concentrator of activities, facilitator of collective life, there is no need to intervene directly on them. They are rather the places where the presence of new poles (*points of action*) – that properly represent the object we intervene on – should be reported. The new activities and events introduced in the *points of action* are witnessed where they have greater opportunity to be noticed: within the main public spaces of the city;
- . The *action points* are those areas of the city that have already proved to be generally neglected by people in the traditional survey. The digital analysis, on the other hand, can provide two kinds of information about these spaces: *confirm* the underuse or reveal the presence of social dynamics not previously identified. The architectural quality of these places and their natural vocation to host activities aimed at socialization and cooperation between individuals, led to the selection of them as new venues for outdoor activities expected to gather and involve the students of the city. The new uses are introduced in the open public spaces and in the near underutilized buildings.

It now remains to be clarified what kind of functions in the *action points* are more appropriate to establish. Extremely interesting was the before men-

tioned proposal for the creation of a *Laboratorio Aperto Diffuso*, which includes the foundation of a center for the observation of urban dynamics, a place for the start-ups, that offers areas for study, co-work, access to documents of the media library, as well as workshops areas, atelier for artists and exhibition spaces. Regardless of the specific functions, the goal that the proposal launched within the *tavoli di lavoro* was intended to strike is the realization of a complex structure, capable to systematize the large number of existing potentials, creating synergies between the various public and private operators, employing a complex of forces, characteristics and features, currently existing only in an embryonic form. The purpose of the *LAP* is to revitalize the social and cultural sphere of Urbino, to make the citizens more interested in the fate of the city, inviting them to take part directly. Extremely interesting in this regard is the nodal role rightly given to students within the *LAP*, not only offering them publicly accessible spaces where to study, meet, read, express themselves, where to exhibit their work and university projects, where to offer their time to the service of others, but above all aiming at providing them the possibility to get a job without leaving Urbino. The city, from the university catalyst that currently is, could also become the place where the professional knowledge gained may turn into job opportunities, providing space for start-ups and collaboration between individuals and companies, investors, private cooperators.

These premises have been taken into account in drawing up the final master plan, consisting of five *anchor points* (Fortezza Albornoz, Piazza San Francesco, Piazza della Repubblica, Piazza del Collegio, Renaissance Square) and six *action points* (*Passeggiata Piero della Francesca*, *Retro del Palace of Justice*, *Botanical Garden*, *via Sant'Andrea*, *Piazza Gherardi*, *Borgo Mercatale*).

Referring more specifically to the individual areas of intervention:

Passeggiata Piero della Francesca (about 2,000 sqm). A scenic Green path that connects Piazza Roma with Porta Santa Lucia, at the beginning of Via Bramante, as well as to the open space behind the current courthouse. It is a green string with tall trees and plants and a few seating elements with panoramic view on the city. The area has an unequivocal landscape vocation: it is a wonderful overview and an excellent sightseeing of the city.

Though it primarily seems to be a place of transition and eventual contemplation of the panorme, *Passeggiata Piero della Francesca* should boast a significant position as a public green space in the city, clearly favored not only by the presence of the high vegetation, but in general terms by the detached position from the main flows of people in the

city. The provision of new benches and small digitized items for children's play and entertainment was planned in order to return to the area a more balanced weight among the public open spaces within the city.

Retro del Palazzo di Giustizia (about 3,000 sqm). An open space located behind the current courthouse. The area owned by the Municipality of Urbino is currently underutilized, fully fenced and not accessible in any point, it is overrun by brambles and other spontaneous form of vegetation. It is quite a large area, particularly quiet and peaceful, even if few meters far from Via Raffaello and connected to Piazza Roma and Via Bramante through *Passeggiata Piero della Francesca*. The area has a vocation to large urban node, an essential meeting point of the city, where an unfolding variety of outdoor activities could be imagined.

In particular, the location would be ideal to accommodate spaces for a single or group job in the warmer months of the year, through the arrangement of tables and sits not fixed to the ground, but free to be aggregated by users, as to create individual or more collective workstations. It could also become the space for small outdoor projections, movies and other displays of this kind, possibly using the streaming contents of the media library.

Botanical Gardens "Pierina Scaramella" (2,200 sqm). It is an open green space made entirely on an embankment, accessible from a one floor high building in Via Bramante, in front of *Palazzo Albani*. Currently owned by the University of Urbino, it is a garden visitable during the week within a fixed timetable – actually too limited - containing medicinal and ornamental plants and maintained in cooperation with the faculty of biology, biotechnologies, chemistry and pharmacy. The vocation of the area is completely compensated by the function established in there: it is a magical venue, almost surreal, with an astonishing variety of different plant species and the breathtaking charm of the iron and glass greenhouse, built in the early 1800s.

The only unsolved issue of this area is the fact that it remains poorly attended both by residents and tourists: the *Botanical Garden* does not feature in traditional analysis upon the spaces of the city, nor in digital ones. In addition, the majority of the vegetation consists of deciduous species or otherwise of species whose flowering is held only in the months closer to spring and summer, making it much more *bare* – not

only in content – during the winter months.

The use of digital displaying devices could provide an interesting tool of augmented reality to simulate the look of the *Garden* in the various months of the year. Users visiting this space in October, for example, could visualize the look of those plants in spring, summer and winter. This system has the aim to encourage visits and provide a more complex and efficient tool for observation and study.

. *Via Sant'Andrea* (about 230 sqm). Close to the Botanical Gardens, but placed at a lower level compared to this, *Via Sant'Andrea* is a quiet street, where it finds home a department of the university, located a few meters far from Via Bramante and Piazza della Repubblica. A side of the street is the embankment of an upper level occupied by the *Botanical Garden*, practically blind, except for thirteen small cells excavated in the embankment of the size of about 3.7 x 4.6 meters, with a single facing points outwards. Currently, these small spaces, owned by the town of Urbino, are underutilized: treated as deposits for disparate objects.

The vocation of the area is strongly influenced by the presence of these spaces. The row of thirteen gates at regular intervals on the side of the embankment shows the presence of a series of a likewise number of spaces where you are invited to access and discover another aspect of the public realm.

Once cleared out and restored, these spaces would be the perfect place to host small art and crafts ateliers, awarded by a competition for appropriate periods of time, helping to create a dynamic and vital urban space. This new system will enhance the productive activity and incentive the urban economy, as well as employment opportunities for students - particularly for those involved in the creative professions, graduated at the Academy of Fine Art or at the ISIA Institute - and attraction for tourists.

. *Square Gherardi* (about 600 smq). It's open public quadrangular space, behind the Church of San Domenico, a short distance from Via Saffi and the main university poles and from the library of Hermeneutics and the University Rectorate office in via Valerio. The *Istituto Legale*, part of the Faculty of Political Science and two buildings owned by the municipality – both underutilized – are facing the area. One, *Palazzo Gherardi* (about 970 sqm), was the former seat of the Court of Urbino. It is a historic building of considerable size, on three floors plus a basement, consisting of a series of small and medium-sized of rooms

and few larger rooms, currently under restoration. The other building, *Palazzo Chioggi* (about 310 sqm), smaller than the previous one, is as well a three floor high. The vocation of the area, together with the two facing underutilized buildings, is certainly to become an essential joint within the nearby university “district”. An outdoor place that works synergistically with the three adjacent buildings, one of which is already linked to university, to provide spaces furthering the needs of study and research.

- . *Piazza Gherardi* is conceived as a space for outdoor studying and working, both in group and individually, through the provision of pieces of furniture (mainly chairs and tables) that can be moved freely by the users to create multiple conformations. There will also be included elements specifically designed to provide shelter from the sun and sockets of electric current, as to allow the use of digital devices for the study or simply represent a point of stop to recharge your mobile phone, with the use of green energy.

Completed the appropriate restoration and rehabilitation of *Palazzo Gherardi* and *Palazzo Chioggi*, the two buildings will be open to the public. Becoming the former a space for workshops, permanent and temporary university laboratories and study rooms, while the latter will be the head-quarter for a network of start-up, identified through a competition called by private entities interested in investing in Urbino and in the future of the city.

- . *Piazza Mercatale* (about 13200 sqm). It is a large open parking area, currently the main of the city, both at the street level and in the basement. The area also represents the arrival station for daily coaches from neighboring cities and for buses coming from all over Italy and Europe. The under construction canteen, for the creation of a new shopping center with adjacent car parking in the area of Porta Santa Lucia, together with the project – still under development – for the realization of a cable car that connects the *Forneria Volponi* to the area of Santa Chiara, will lead certainly *Piazza Mercatale* to lose, at least in part, the function of main area for parking, which will be probably preserved in the basement. Overlooking the square, are located the *Rampa Elicoidale* – a majestic architectural fabric once used as a lift ramp for the horses from the level of *Mercatale* to the upper one of the Palazzo Ducale – and a long and narrow building, a former ducal stable known as *Data* (about 4200 sqm). Both, after centuries of neglect, have been the subject of a restoration project by architect Giancarlo De Carlo, after which the

Scala Elicoidale was reopened as an access to the city, while the *Data* is still closed.

The vocation of the area is certainly becoming an essential pole for the city, whose catchment area has local significance, as well as urban. It is a very large space ideal for gastronomic, folklore, historical and cultural events. The *Scala Elicoidale* obviously retains its essential function as a monumental access point to the city, allowing an easier ascent from the level of Mercatale to Via Mazzini and from there to the center. The function of urban portal must be stressed, particularly the top floor of *Scala Elicoidale*, beautifully preserved by the project of De Carlo, may be the checkpoint signaling the entrance to Urbino, reporting information, texts and images of the city and its beauty.

It is essential to preserve the relationship between the *Piazzale* and the *Data*. This latter, is an extreme peculiar architecture, introverted by nature, is a primary presence on the square and offers wonderful views of the *Mercatale* and *Le Vigne* area from the inside. In a project of rethinking of the area, it could be considered as the hub of a cultural system that here might find the headquarters and administrative seat.

The design of the area, once again, provides a non-invasive adaptive reuse of these spaces, based on the principles of flexibility, lightness and integral architectural conservation. The operation must consider as a primary prerogative the attention to the relationship between interior and exterior, making sure that the *Data* and *Piazza Mercatale* both work as agencies of the same system, to synergically create a unique public space, open and closed, in where to feed sociality, sense of belonging and cultural production.

The *Data*, at the level of contact with the *Mercatale*, will host spaces for the organization of meetings, conferences, small temporary exhibitions, as well as workshops and study areas. The second floor will houses study stations, computer terminals for internet browsing and consultation of the media library. The top floor, finally, will host the *Open Urbino Headquarter*, as a general administrative agency that manages the activities of all the poles that are created within the urban settlement and the restitution of data and events in appropriate places and in a defined manner, as will be further explicated afterwards. Moreover, here will be arranged the appropriate equipment for a direct contact between the *Open Urbino Headquarter* and the dwellers, with the possibility of organizing joint summits, meetings, consultations.

Piazza Mercatale will represent the extension of these venues, offering the possibility either of having spaces for outdoor studying, reading and group working – once again equipped with *Wi-fi* internet connection, sockets and the possibility to recharge digital devices – and hosting large events. *Piazza Mercatale* in the project will become a new center of life in Urbino, accommodating events from the micro to the macro scale, targeted to the involvement of all the city dwellers and of the residents in neighboring towns.

Once again it is important to restate the ultimate goal of the intervention. It was not born from the intention to create a simple urban catalysts, as new features able to collect a certain number of citizens, representing a some kind of attractive, but to work as a single system capable not only to create new sources of attraction, but especially to generate a complex network of relationships that mutually enhance each other, work synergistically and ensure, through additional technology, the presence of the functions performed. The Koolhaas's condenser, as a building that simulates the operation of the classical city, is returned to its urban spaces that work as they were within a single architectural body, in which the incidence and co-presence of the single parts is ensured by suitable connecting digital systems.

Masterplan

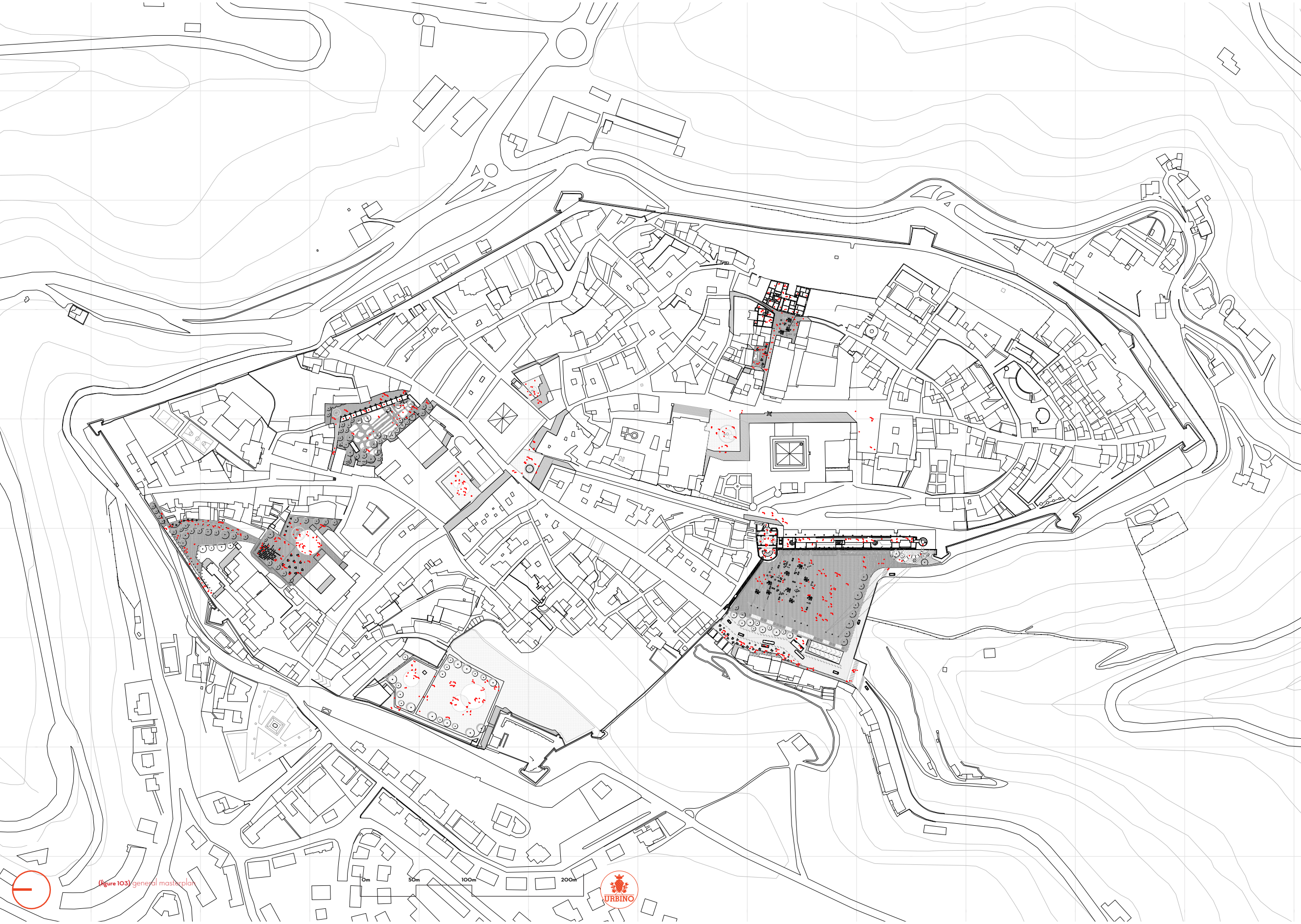


figure 103 general masterplan

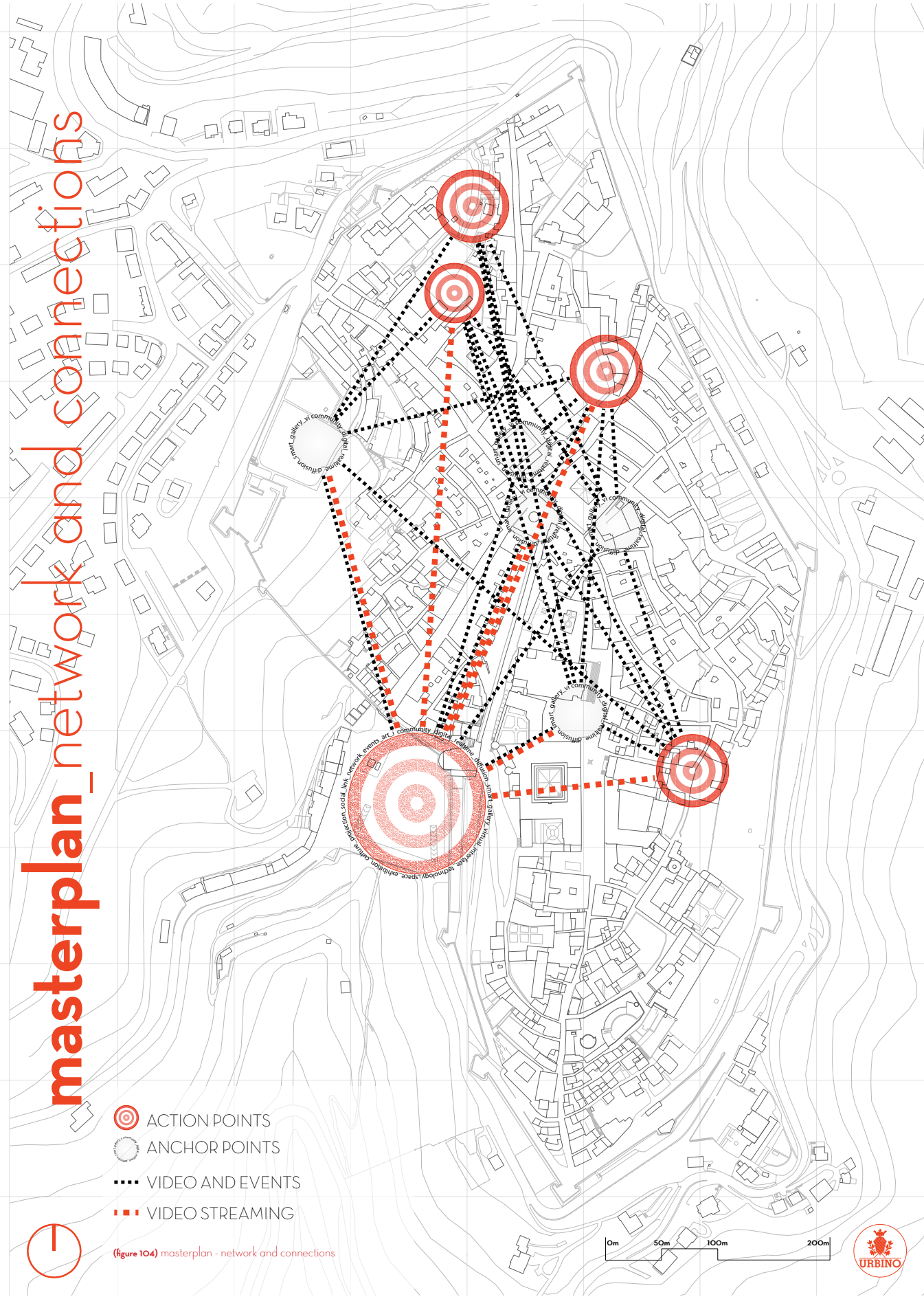


masterplan_network and connections



- 🎯 ACTION POINTS
- ⊙ ANCHOR POINTS
- ⋯ VIDEO AND EVENTS
- ▬ VIDEO STREAMING

(figure 104) masterplan - network and connections



masterplan_program and functions

- INFO POINT
- CO-WORKING
- OPEN URBINO HEADQUARTER
- GALLERIES
- ATELIER
- MEDIA VISUALIZATION
- VIRTUAL AUGMENTED EXPERIENCE
- DIGITAL INTERACTION ELEMENTS

(figure 105) masterplan - program and functions

0m 50m 100m 200m



2.3.2 Digital infrastructure to connect public places

The connection between the poles is the essential feature to ensure the existence of the entire system here purposed. Urbino has already an experience in terms of digital infrastructure and cloud-sourcing: the Urbino Wireless Campus, developed by a department of the University, has ensured the internet coverage over widespread areas of the city in neutral connection, while the participation in the Italian project MLOL has enabled the citizens to digital lend and stream books, movies and music.

To stress the possibility of interconnection among the parts, an application called Open Urbino will be elaborate, whose aim is to make the dwellers aware of their movements and actions within the city through social media maps, as well as to add and take part in events within the city and to promote or sustain project of public interests. Moreover, considering the fact that the use of smartphones and social application is still limited to a specific – and non-majority – task of the population, the anchor points will be used as the places where to reconstitute information and contents about the city, its venues and events, through proper systems of visualization.

Finally, all the action points of the masterplan will be equipped with opportune elements for the continuous video-streaming, as to show in a place the activities conducted in other poles. These instruments are supposed to supply the physical co-presence among the parts of the system, even if they are not together physically.

Since the linking element between the various digital functions is the essential prerequisite for the single point to work together as a unique system, it is necessary to take into account what kind of connection between a point and the other are activated.

The premise to the speech has to be considered an ongoing interesting project that has been previously introduced, known as *Urbino Wireless Campus*

(*UWIC*). Actually, the *UWIC* ensures free access to a wide range of information, services and communications within a quite spread portion of the city of Urbino. Two main advantages came from the arrangement of this type of connection in neutral access: the first deals with the effective possibility to provide digital services coming from different subjects; the latter is the ability to implement policies of digital inclusion and e-democracy, providing free from charge minimum services in the public interest. *UWIC* gives the students direct access to all University services, effectively extending the Campus to the entire territory covered by the system, and free access to a wide range of information concerning natural resources and natural area under protection.

This statement is extremely relevant for our intervention, first of all because it represents a precedent in sense of creating a digital network to strength the possibility to remain up-dated and *in touch* with the rest of the word, as well as to create a digital community strictly anchored to the specificities of the place – since the possibility to connect to the public network are actually ensured within the historic city. Moreover, the operation of the *UWIC* certifies the existence of some appropriate physical infrastructures that provide the wireless coverage (antennas, repeaters, routers) and this boosts the feasibility of the proposed project, helping in partially reduce the costs of realization.

Furthermore, we report a project that is currently in action on Urbino and defines a more obvious contact not only with the surrounding territory, but with the whole global community, the *Media Library (MLOL)*. *MLOL* is the first Italian network of public libraries for the management of digital content, as well as a platform for digital lending in Italian libraries. In summary, the project *MLOL* consists of a system to distribute over the Internet, remotely, any type of digital object (audio, video, text, databases, historical texts in image format, iconographic archives, audio books, digital books, e-learning, live-casting in real time). It was also intended to create a portal of *Digital Asset Management* to manage all the problems of licensing and copyright in the services of lending. Moreover a *National Network of Libraries*, a *Library Systems* and other entities were created to collaborate and share costs for the management of digital resources.

Nowadays, through this service, the citizens of Urbino can, either at home or in public places, borrow e-books of Italian publishers, consult databases and encyclopedias, read the digital versions of newspapers or other periodicals, listen to and download music and audiobooks, stream video.

At this purpose, what the project should ensure is the possibility to access to this media-library everywhere in the city, and to provide equipment in order to

commonly consume those contents. The availability of public spaces where to stop, sit, work at the computer – equipped with electrical sockets to recharge the digital devices – it is certainly an incentive for citizens of Urbino to use the media library system outside the walls of their home and university rooms. The possibility to have screens where to visualize together a presentation or some video streaming, with partners. The library becomes a more enlarged occasion for meeting and social exchange, brought to the city's public spaces. On the other hand, the operation would revitalize these areas of the city, stimulated by the presence of a growing number of users here meeting and socializing.

Systems just clarified, concerning the project of *UWIC* and the Italian *MLOL*, are more than just the report of the current state of things, representing rather an extremely fertile and certainly facilitated starting point for the precepts of the masterplan and the design choices we developed. They are an essential prerequisite.

To these two factors, other three are added, whose purpose is to ensure the synergy of the system, allowing different parts, distributed in the historical center, to work together as if they were simultaneously present:

- *Open Urbino App*. It is a proposal for an application for smart-phones that allows the user to view, once he's logged in, the interactions produced by any member of the community using the application in Urbino and to share his own contents with the latter.

The aim is to create at large a database about people, events and common projects. This database of information will be visualized in certain places in order to create synergies among them. Clearly, the main goal of the operation should be helping in fostering community ties and affection toward places.

There are three main possibilities offered by the use of the application:

- Using a *GPS* map, *Open Urbino* allows to identify the places in the city where most of the contents from various social networks were shared. By visiting the section *Statistics*, you can visualize the maps of the interactions expressed by users of *Twitter*, *Instagram*, *Foursquare* and *Vyclone* within the venues of the city of Urbino.

It will be also possible to visualize the social interactions for

each location of the city. Photos, status, video will be posted on the home page of the space in question and also further content could be add and shared with the community of *Open Urbino*.

The goal, according to what has been studied by many urban sociologists and already experienced in similar projects of instant mapping, is to generate a *feedback loop*. The display of the social dynamics that affect a city, through the traces of the social network, is able to produce an influence on the future behavior of the users, scrambling the role and weight of individual public places, triggering new mechanisms of space colonization, with possibilities of revitalization of once underutilized spaces;

- *Map of the events*. Aimed at visualizing on a map the current and future events involving the public spaces of the city of Urbino. With the possibility to see the number of people that will take part to the occurrence, participate in turn or create a new event. Beyond the specific activities set up, in fact, the premise of the masterplan is to return extremely multifunctional and dynamic public spaces, able to meet the various needs of living together, without excluding group meetings, small exhibitions, events and performance, considering previously argued cases of collective gathering on public land, arisen in the digital environment and then moved – more or less temporarily – in the physical realm of the city. In this way, the application would become the tool for easily creating opportunities for association and social interaction and involve a significant number of users.
- *Map of the projects*. The application also seeks to collect and display project proposals launched over the city. The arrangement of a green park, the reconstruction of a pavement in a square, are all objectives that can be proposed within the application, voted and commented by other users and supported by offering their time and professional experience (*time bank*), as well as financing the costs through a system of *fund-raising*s. Once again, the goal is to get the citizens closer to the fate of the city: the feeling of alienation from the public domain

often determined by urban planning strategies *fell from above*, too institutional, could be fought this way, asking people to directly consider some hypothesis regarding the future of *their* spaces.

- Moreover this possibility uses *crowd sourcing* as an effective solution in order to solve common issues about the city.



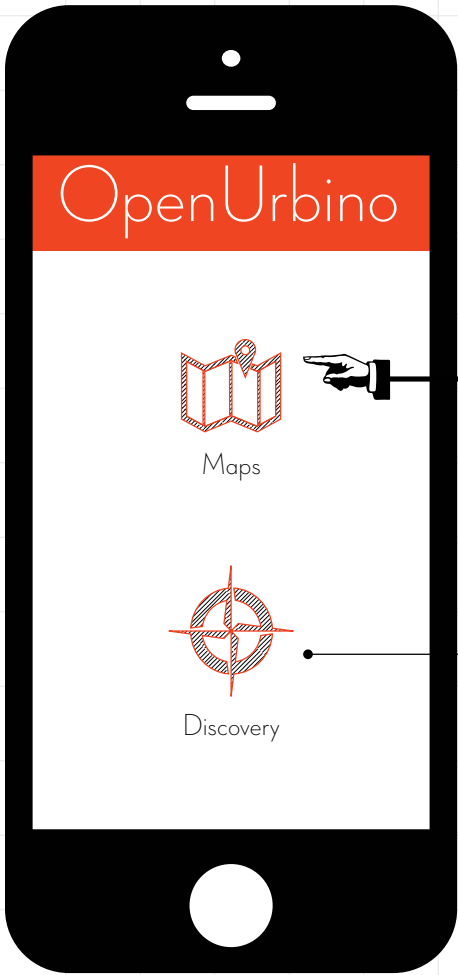
OpenUrbino

- creates a database about people, events, and common projects;
- creates synergies among places visualizing the database within them;
- helps in fostering communities ties and their affection toward places;



sign up and share all your media contents
with the whole community of Urbino

(figure 106) Open Urbino App - authentication

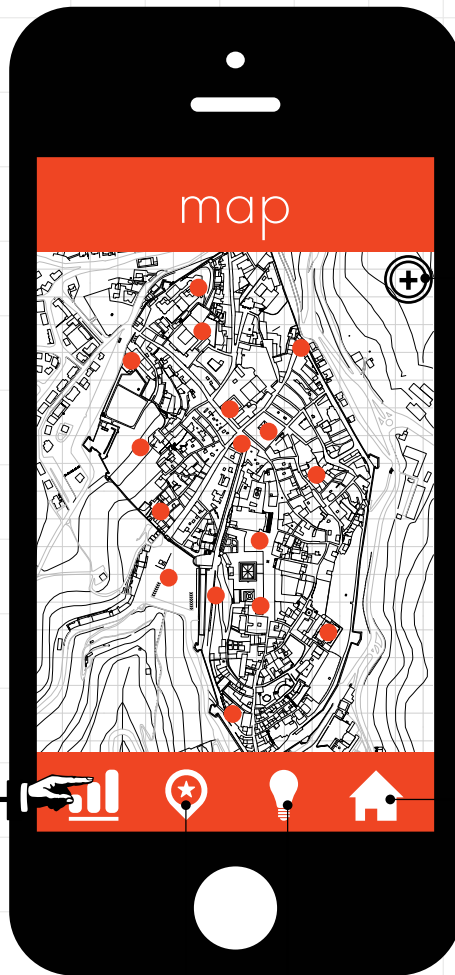


main menu to see the whole map

discover events and projects near you

(figure 107) Open Urbino App - intro to map

CLICK ON ANY SPOT OF THE MAP!



add a place you want to publish about

STATISTICS

visualize data coming from social network and find where people usually go

HOME

goes back to the previous page

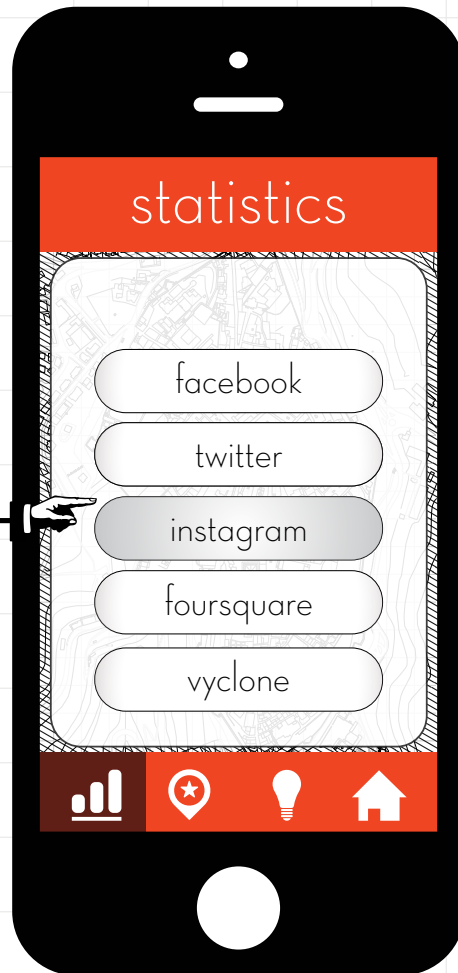
EVENTS

propose your events, and visualize on-going events in the city

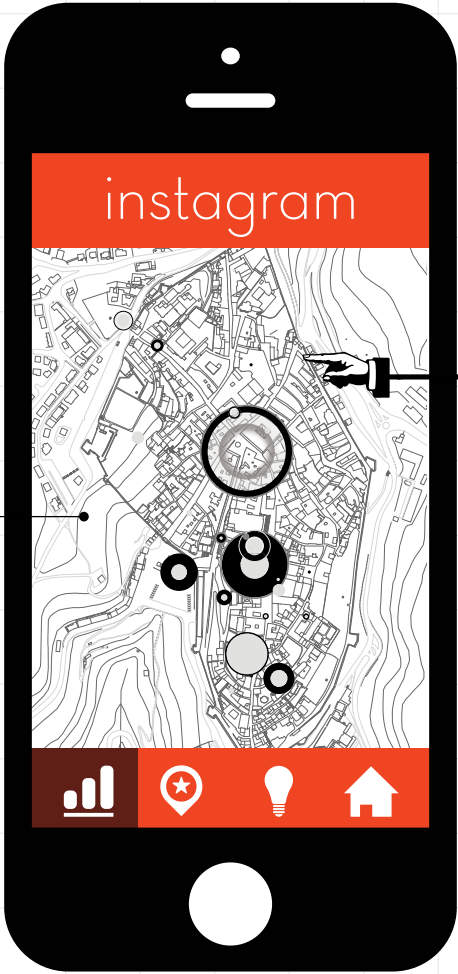
PROJECT

propose a project of common interest for Urbino

STATISTICS
decide what kind of data you want
to visualize



(figure 109) Open Urbino App - statistics



instagram

click on a spot of the map

STATISTICS
visualize rea-time data coming
from social networks

(figure 110) Open Urbino App - Instagram map



P.zza S. Francesco



maxima87

twitted something:

"Pazzesca S. Andrea con la Neveee! #OpenUrbino"

2 min ago, from Urbino, PU, via Twitter



lovefashion

posted a pic on Instagram:



"#wonderful #places #urbino #OpenUrbino #padova"

2 hrs ago, from Urbino, PU, via Instagram



ADD A CONTENT
add a contribution

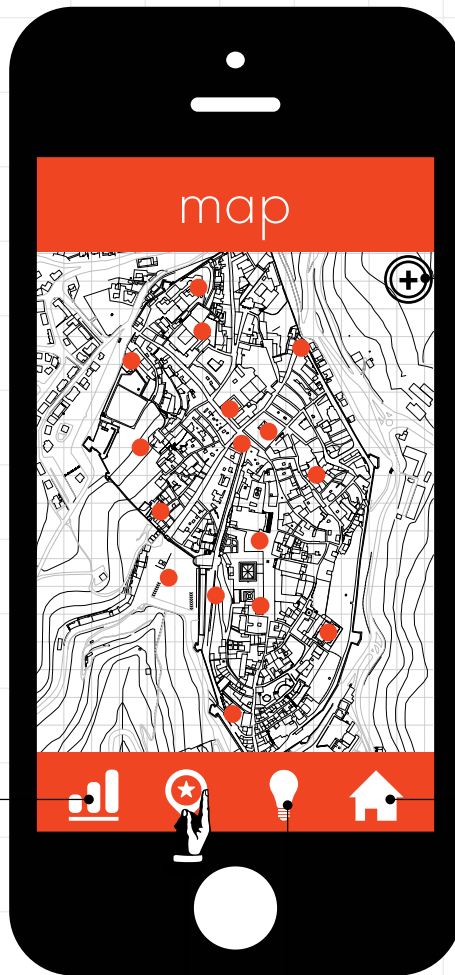
visualize all the contents that people in the community have posted on Facebook, Twitter, Instagram, Foursquare, Vyclone

SHARE
click on a comment you like and then share it in your social network

MY PLACES
visualize all places you have published about

HOME
goes back to the previous page

CLICK ON ANY SPOT OF THE MAP!



add a place you want to publish about

STATISTICS

visualize data coming from social network and find where people usually go

HOME

goes back to the previous page

EVENTS

propose your events, and visualize on-going events in the city

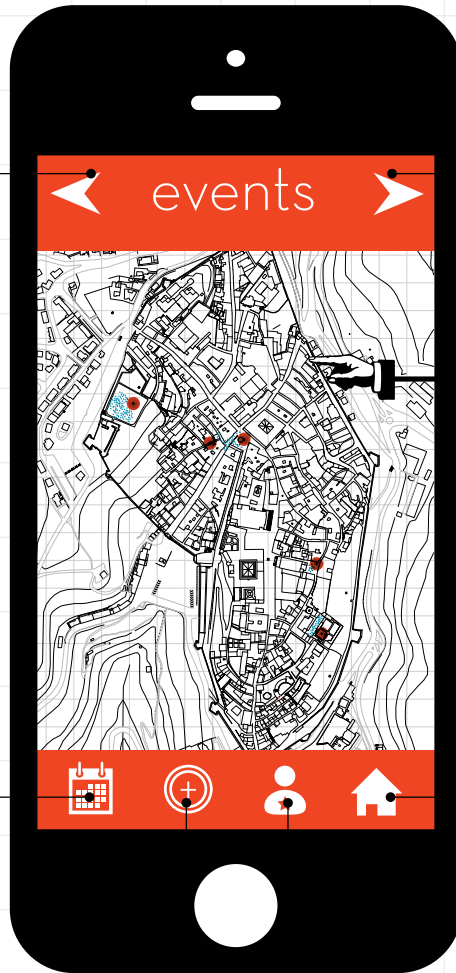
PROJECT

propose a project of common interest for Urbino

(figure 112) Open Urbino App - map to events

the day before

the day after



click in any event in the map !

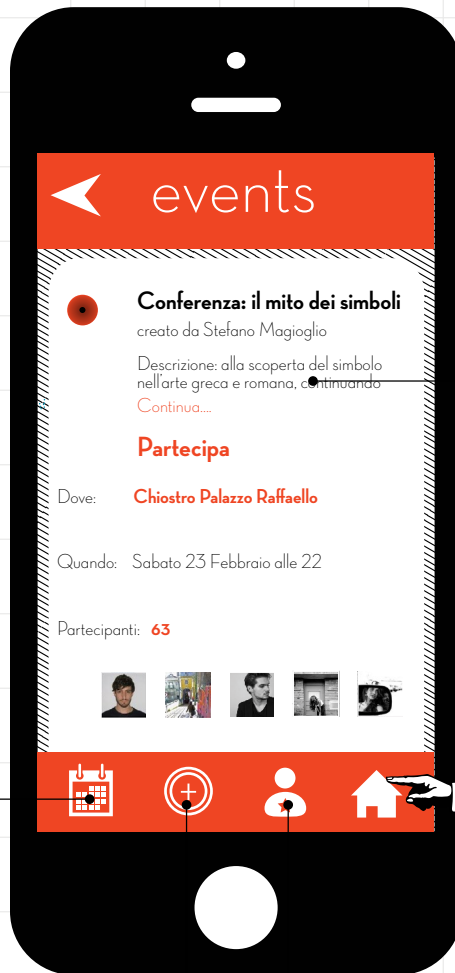
visualize all the events going on today in urbino

SCHEDULE ORVERVIEW
visualize all the events in a calendar

HOME
goes back to the previous page

ADD AN EVENT
add an event you organize

MY EVENTS
visualize just the events you decided to join



SCHEDULE ORVERVIEW
visualize all the events in a
calendar

ADD AN EVENT
add an event you are organizing

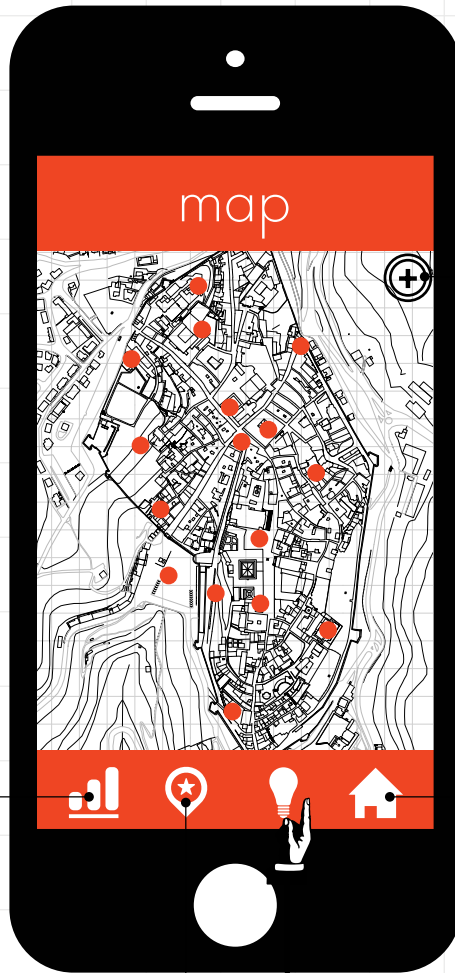
MY EVENTS
visualize just the events you
decided to join

check the type of event, the
timetable and the participants

HOME
goes back to the previous page

(figure 114) Open Urbino App - events, Conferenza

CLICK ON ANY SPOT OF THE MAP!



add a place you want to publish about

STATISTICS

visualize data coming from social network and find where people usually go

HOME

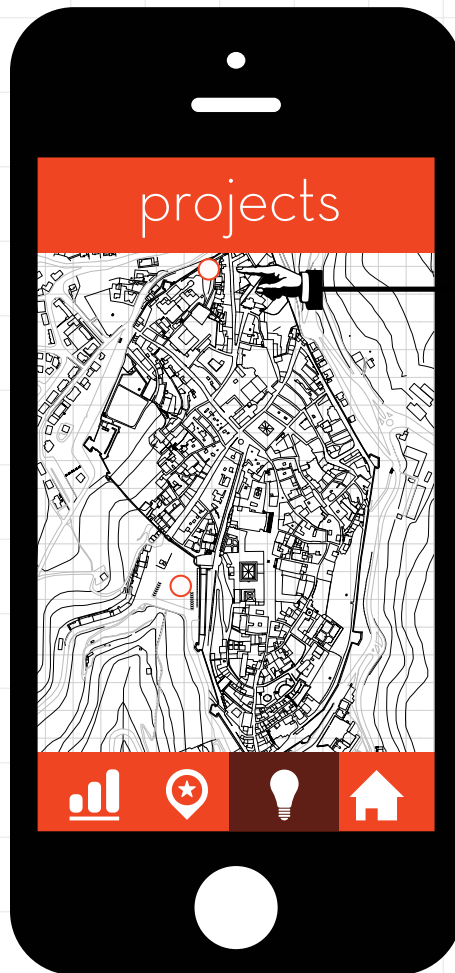
goes back to the previous page

EVENTS

propose your events, and visualize on-going events in the city

PROJECT

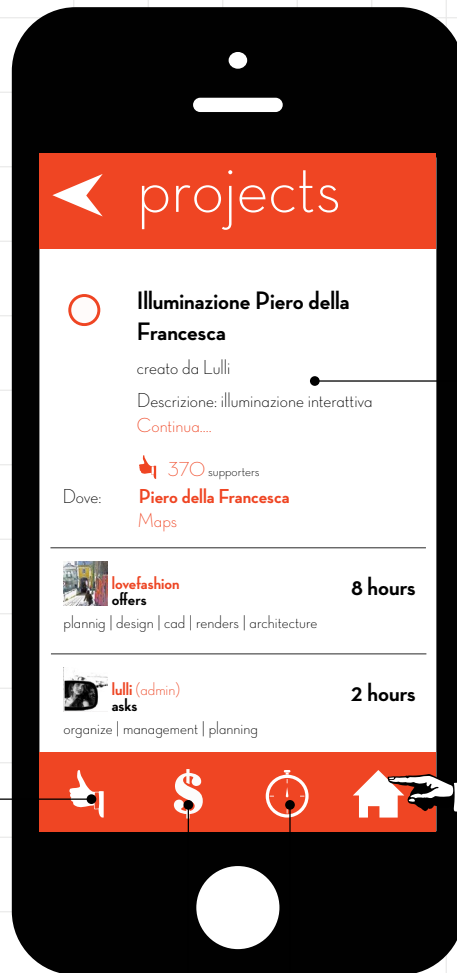
propose a project of common interest for Urbino



click on the project!

visualize all the project in Urbino
you can take part

(figure 116) Open Urbino App - project



← projects

○ **Illuminazione Piero della Francesca**

creato da Lulli

Descrizione: illuminazione interattiva
Continua...

👍 370 supporters

Dove: **Piero della Francesca**
Maps



lovefashion
offers

8 hours

plannig | design | cad | renders | architecture



lulli (admin)
asks

2 hours

organize | management | planning



LIKE

support a project

HOME

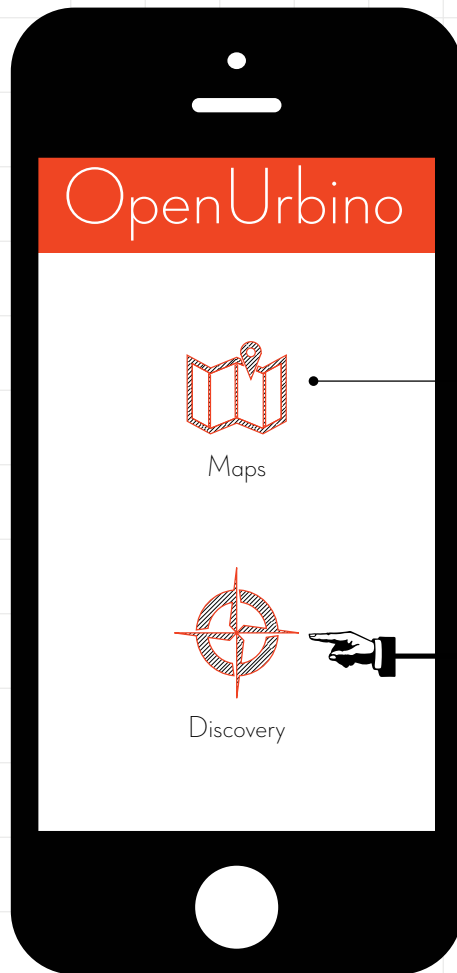
goes back to the previous page

DONATE MONEY

donate money to support the project

DONATE TIME

donate your time and your skills to support the project



main menu to see the whole map

discover events and people near you

(figure 118) Open Urbino App - intro to discovery



you are here!

visualize the events and the projects going on nearby you

STATISTICS
visualize just nearby data

HOME
goes back to the previous page

EVENTS
visualize just nearby events

PROJECT
visualize just nearby projects

(figure 119) Open Urbino App - discovery

Anchor Points. The application is an essential tool for the success of the masterplan, for characteristics of displaying previously invisible mechanisms of the city and for the possibilities in terms of self-organization and self-managing of events and shared projects. However, it is important to consider how applications and smartphones compete to a slice of the population that, though growing, is still a minority and people not using them are inevitably excluded. Especially the elderly, children and segments of people that for various reasons do not use digital devices with Internet access or that are not tied enough to the social networks culture – which is extremely widespread especially in an age range between 14 and 35 years – are therefore excluded by the incentives induced by *Open Urbino*. Moreover, another essential characteristic either of the historical city and of the simulation of this latter made by the Koolhaas' condenser is the possibility to inadvertently stumble into signals and information concerning *the other*. Many of the activities carried out in a city are not necessarily planned, but may be the result of an accidental meeting or of an appropriate signal.

It is not unusual that while walking in the street to go to the library, you run into an art show few blocks far and you decide to get a look. Nowadays the discovery of space is partly covered by the use of social media: people tend to look at their social network database to decide where to go, moving from one point to the other in a indifferent spatial way. Our proposal is then to combine those two ways of experiencing the space. Create a data base of events and interactions that is shared not only in social networks but even in spaces, through the anchor points. Thus the accessibility of those public spaces is enhanced by their existence in the data base and on the other side, the spatial coincidence still happens.

Differently, the choice to create some *anchor points* will just give an answer to these two needs: to make available information about places and events to those who do not have a digital device and lead users to involuntarily “stumble” into information. For this reason, the *anchor points* defined in the masterplan (Fortezza Albornoz, Piazza San Francesco, Piazza della Repubblica, Piazza del Collegio, Piazza Rinascimento) correspond, as

already explained, to the most crowded places in the city, where the information would be more easily found by inhabitants. In these locations totems, screens and other digital display systems must be integrated into the space and provide portals of information about “*what’s hot*” in Urbino.

. *Video-streaming.* Another essential aspect of the masterplan is the ability to simulate the co-presence of the *action points* as if they were inside the same urban condenser. The physical co-presence, in that case ensured by the proximity of the functions within a single architectural object, in this case would be compensated by simultaneous digital co-presence of places, through video-streaming. Each of the *action points* will be equipped with appropriate systems for the visualization of activities and events held elsewhere; in turn, these spaces will be visualized within the *anchor points*, in order to be received by the largest possible number of users. So the *Open Urbino Headquarter* will always have an eye on the execution of joint activities in the meeting room of the start-ups at Palazzo Chioggi, as well as within the ateliers in Via Sant’Andrea will be visualized the shows by the artists exhibited in the ground floor of the *Data*.

In addition, especially for the *Data*, the possibility of continuously visualize via video-streaming some areas of the city, could solve what would otherwise be detected by many experts as a problem in the functioning of this space. Actually, it is a widely diffused opinion that libraries, study rooms and in general all activities directed to reflection and research should provide a visual contact with the spaces of the city in which they are located. In this regard large windows, glass surfaces and transparency would be addressed to strengthen the connection between its activities and the urban areas in which they took place. As mentioned earlier, the *Data* is a building pretty introverted and, at least in part not very permeable towards the outside - especially for the first level. In this case the presence of video-streaming as gripping points in multiple spaces of the city, make it possible to preserve that indispensable contact with urban spaces, otherwise denied by intrinsic characteristics of the architecture.

2.3.3 Possible scenarios of development

The proposed masterplan requires to main feature to be effective: the participation of city dwellers, their interest in the future of the city and of course the funding. In order to make these characteristics realize it could be useful to develop the project per phases. Starting from promoting the Open Urbino App as to foster di citizens' interests towards the city issues, passing from the reactivation of the inner spaces of the Data, where the Open Urbino could find his headquarter, made up of a group of dwellers' spokespeople, which will be responsible for the development of the future masterplan. An international competition will be launched, then, for the elaboration of a project of the Piazza Mercatale, that will be supposed to work a unique system with the Data. Moreover, through the Open Urbino App and the activity of the Open Urbino Headquarter, there will be the activation of the anchor points and of the open-air action points, whose requires few works of transformation and with modest costs. Once the system is established and the benefits are observed, there will be the fundraising for the restoration and adaptive reuse of abandoned buildings, facing the action points, will be undertaken.

Among the advantages of the proposed masterplan, apart from those that have been already discussed, there is the fact that it doesn't imply huge physical transformations of the city, nor it includes exorbitant costs for the realization. On the other hand, our proposal requires a series of feature that are essential as well for the success of the masterplan, primarily the involvement of city dwellers.

Contrary to what one might believe, participation is not a spontaneous practice, it implies a habit to take part in political and social life of a city. Even if all the inhabitants feel burden on their shoulders the weight of the decisions made by others – usually by government – not everyone is able to predict the consequences their own actions induce within the public sphere.

Urbino, once again, is effectively not a newcomer to the tradition of direct participation of citizens and the *tavoli di lavoro* for the drafting of the *Piano Strategico* actually proves it. However, the involvement of city dwellers has always been an exception and in any case a regular practice of continued participation has not been processed yet. Moreover, from any form of participation those who represent the main users of the historical city have always been excluded: the university students. The latter, though being effectively the main inhabitants of Urbino, have never found an effective voice to represent them and assert their own reasons and this has led to a further disregard for the fate of Urbino.

This takes us to the second key characteristic, considered as a prerequisite for the success of the masterplan: the interest. While elaborating the planning, for our part, the effort has always been to give weight to the vocation of places, in respect of their true nature, as well as to listen and try to understand the reasons, desires and expectations of the citizens of Urbino. In this sense, the traditional analysis and that conducted through social media have been essential and even more was the opportunity to participate in the *tavoli di lavoro* and to become aware of the demands made by the civilian population, within the various processes of participatory planning. However, the effort was made in order to return a tool that would start from the bottom, listening to those who truly know Urbino. The question that we asked ourselves was *how to increase the interest, how to involve citizens?*

Unfortunately, the answer does not completely lie with us, since a synergistic intent by public and private operators within Urbino is necessary, as to bring citizens closer to the fate of their city.

We are convinced that the interest does not resolve completely the issue, but is able to give a partial response to the problem of funding. In fact, although the developing of the proposed masterplan is much less expensive than traditional urban design interventions involving physical transformation of the city, it is clear that investment should intervene as well. What could be ensured, however, is a development in stages of the system, which starts from the activation of public spaces, already in good condition, and arrives at the restoration and preservation of identified buildings. Providing, in addition, the creation of a system of *crowdsourcing* for the collection of funds, able to finance at least part of these projects on the city.

As a result of these considerations a project of development in time of the objectives of the masterplan is required.

In a first phase the application *Open Urbino* will be activated (phase 1) and

will be advertised in strategic points of the city, explaining the contents and offering the possibility to download it via *QwerCode*. The primary goal is a first activation of the interests of citizens: showing the interactions of others within the city, promoting or participating in events on public spaces and offering the opportunity to suggest and support projects.

Once the interest of the Urbino dwellers for the application is noticed and the actual benefits derived from the use of this are valued, the second step is to program the reactivation of the interior spaces of the *Data* and of the *Scala Elicoidale* (phase 2). In fact, both have been already subject of a restoration and thus the re-opening and activation of these spaces could be held without considerable costs for the municipality.

The *Data* will host the intended function specified in the masterplan, providing spaces with elements that enable the use of digital devices (sockets, adapters, *Wi-Fi*) and have areas to work and study that allow a flexible aggregation of the space, freely operated by users through movable furniture (chairs, tables, small armchairs). Future functions – art atelier, workshops, study rooms, working places – that will be distributed across the city in accordance with the provisions of the masterplan, will be temporarily held in the *Data*, thanks to the flexibility and scalability of the spaces here set up.

Open Urbino will find a physical seat in the *Data*, with the identification of a group of representatives of the citizens, coming from the most appropriate and diverse social and cultural backgrounds, which will be responsible for coordinating all the events and projects about the city. The latter, in particular, emerged as spontaneous proposals suggested and supported by the *Open Urbino App*, will then be examined by the group forming the *Open Urbino Headquarter* and subsequently brought to the attention of the public administration. The function of the *Open Urbino Headquarter* will be vital for the success of the project, since it really represent the agency that is responsible for the management and administration of each of the parts of the masterplan.

The *Scala Elicoidale* shall also be activated as a check-point to the city, with the information elements as intended by the masterplan.

At this point, the works for the accommodation of *Piazza Mercatale* will be undertaken (phase 3). The large open area, according to the provisions of the plan, will become home for medium and large events, as well as a place of continuity with the activities inside the *Data*, towards spaces for study, group work and leisure. An international competition will be launched – due to the complexity and importance of the project – and in the announcement it will be expressed the request to satisfy the conditions expressed within the

masterplan. Private partnerships, interested in the development of the project and in the incentives this will lead to in economic terms, will be involved. Once the project will be completed, the *Scala Elicoidale* and *Piazza Mercatale* will work as a single organism, representing the hub of the urban system and a place of extraordinary attraction either for the surrounding territory and for the national and supranational levels.

The further step will be the promotion of future expansion points of the masterplan (*anchor point* and *action points*) through the *Open Urbino App*. The aim is to test the actual interest of the citizens in realizing such a system, collecting possible indication about it, as well as supporting the realization with funding in workforces and in money.

The anchor points will be treated first (phase 4), clearly free from any physical intervention, apart from the appropriate infrastructural facilities specified within the masterplan.

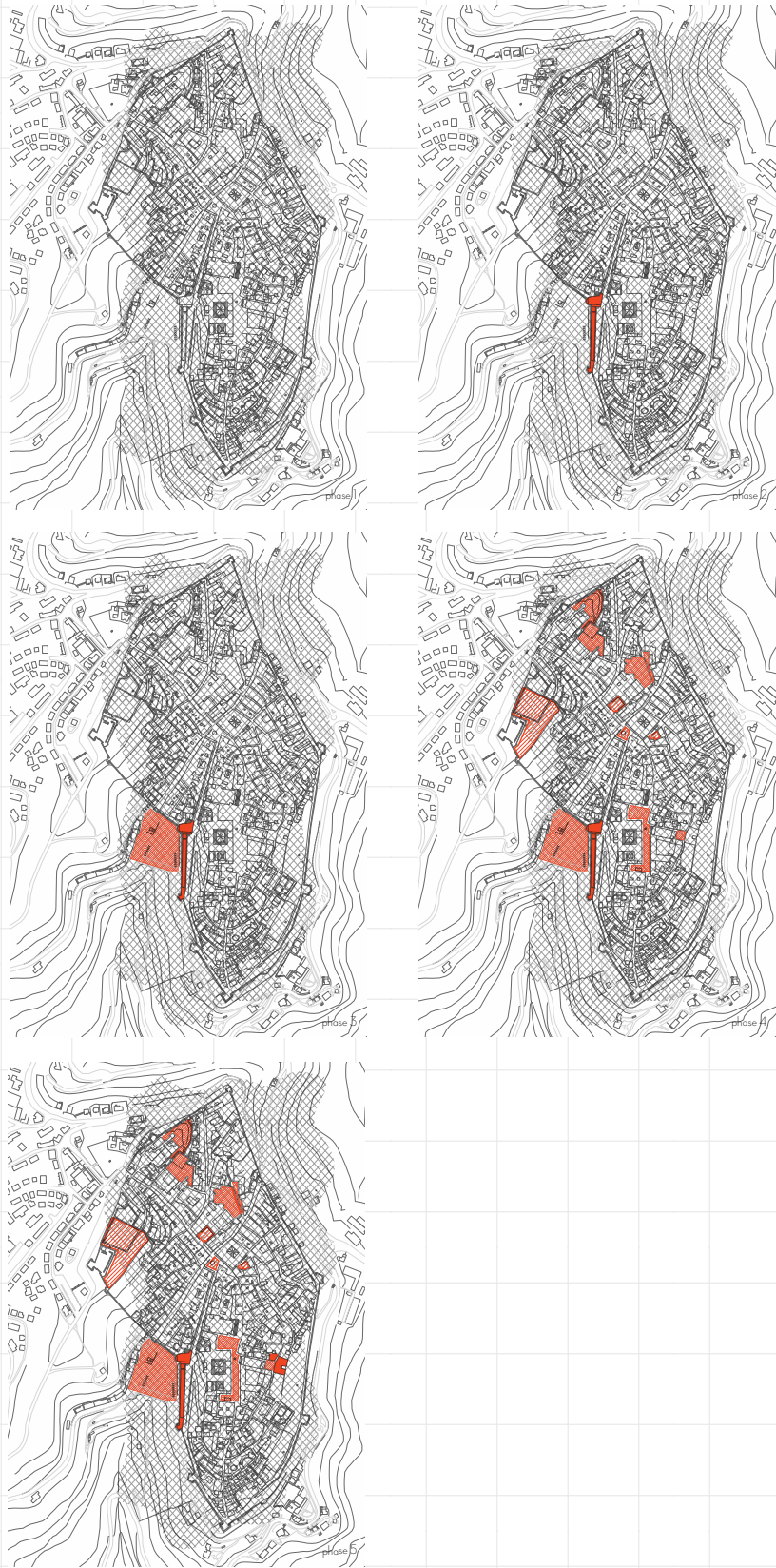
The same will be done for the open-air *action points* (*Passeggiata Piero della Francesca*, *Back of the Palace of Justice*, *Botanical Garden*, *Piazza Gherardi*) where the functions provided will be settled, the spaces will be arranged where necessary and equipped with the infrastructures proper for the use of digital devices and the performance of activities of study, research and work outdoors.

Finally, ensured the effective functioning of the entire system, the development of the masterplan will proceed with the search for funds to enable the financing of projects of restoration and adaptive reuse of underused buildings overlooking the *anchor points* (phase 5). Once again, through the *Open Urbino App* and through joint meetings held at the *Open Urbino Headquarter*, the city dwellers will have the opportunity to offer their professional skills and money for the construction of such projects.

A further phase of the project development may be advanced, the extension of the system outside of the only historic center of Urbino, arriving first at nearby peripheral residential areas (such as the recent expansion areas towards the north, north-east) and subsequently reaching a territorial scale. Involving the entire territory of Urbino municipality, finding *anchor points* in surrounding villages and hamlets.

The opportunity is to transform these peripheral disconnected places into points of a network that is extended to the province at large. Smaller reality, that suffered the condition of isolation much more than Urbino, could find the chance to become visible within a system that involves a wide area, promoting their peculiarity and, the other way around, envisioning the ongoing

masterplan_development in time



(figure 120) masterplan - development in time



events and activities of the city. Traditional fairs, folk events and happenings in nearby villages could be disclosed and visualized in Piazza della Repubblica, for instance, and at the same time, the dwellers of the small hamlet will be informed about the current activities in Urbino. Summarizing it is about extending the network to the whole territory, fighting marginalities and creating new centralities.

A thematization of spaces, able to make them more suitable to the needs of contemporary living, without necessarily forcing the inhabitants to move towards the city center to find *better* places.

Clearly this is not an immediate operation. In an even more fragmented situation – like the one of the province – a targeted and aware study of each of the centers that compose it is required.

This proposal is promoted here in terms of a possibility of a future development of the masterplan, after an appropriate investigation upon the area and an appropriate assessment about it.

In any case, the pursued objective is not intended to subvert the hierarchical balance that exists at the local level. Urbino is the largest urban center, home for functions and sources of attraction that are unique and it is not desirable to be serially reproduced in neighboring hamlets.

However, even small towns could become part of a network that spreads from the bigger center to each one of the defined poles. Activities previously prevented by the physical distance and isolation of these realities, are made possible thanks to the incentives offered by the implementation of digital technology.

future scenario_territorial development



(figure 121) future scenario - territorial development



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