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Shaping Ageing Cities
10 European case studies

#shapingageingcities

HelpAge
International
global network

(intel)

Systematica

ARUP

Shaping Ageing Cities
10 European case studies

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Our team

ARUP

Arup is a global firm of designers, engineers, planners and business consultants providing a diverse range of professional services to clients around the world.
We have more than 10,000 staff located in 92 offices in 37 countries. At any one time, we have over 10,000 projects under design or construction.

We are renowned for our specialist expertise in multiple disciplines encompassing all aspects of the built environment. At the same time, we are dedicated to an interdisciplinary approach that brings our full complement of skills and knowledge to each project. Since our inception in 1946, we have been the creative force behind many of the world's most innovative and sustainable designs.

Arup has three main global business areas – buildings, infrastructure and consulting – although our multi-disciplinary approach means that any given project may involve people from any or all of the sectors in which we operate.
Our fundamental aim is to bring together the best professional team in the world to meet our clients' needs.

HelpAge International global network

HelpAge International helps older people claim their rights, challenge discrimination and overcome poverty, so that they can lead dignified, secure, active and healthy lives.
Our work is strengthened through our global network of like-minded organisations – the only one of its kind in the world.

HelpAge helps older people claim their rights, challenge discrimination and overcome poverty, so that they can lead dignified, secure, active and healthy lives.
In the past year, we have reached 1.5 million of the world's vulnerable older people and their families, including improving pension schemes in 14 countries and supporting 250,000 older people in accessing health services. Read more about our achievements.

We work in over 65 countries with more than 100 Affiliates and 180 other partners across all continents.
We have six regional development centres and offices in London, UK and Brussels, Belgium from which we support our work around the world.

(intel)

Intel Research, Development and Innovation in Europe is driven by a network of research, product development and innovation labs spanning the region as well as a variety of Intel business units. Intel Labs Europe (ILE) was formally established in early 2009 as a central means of coordinating activities across a diverse and extensive network, and to strengthen and improve Intel's alignment with European Research and Development. The ILE network consists of more than fifty R&D locations employing more than 5,000 R&D professionals.

Intel Health and Life Sciences Group aims at leading the industry to deliver better experiences for patients and those who care for them with innovative thinking and people-centered research. We're bringing what we do best – computing innovation – to help move health and life science industries into a new era of improved quality, affordability, and access for billions of people worldwide.

The **Intel Collaborative Research Institute for Sustainable Connected Cities** (ICRI Cities) is concerned with how to enhance the social, economic and environmental wellbeing of cities by advancing compute, communication and social constructs to deliver innovations in system architecture, algorithms and societal participation.

Systematica

Systematica, a planning and engineering consultancy firm specialized in Town & Transport Planning, with offices in Milan, Cagliari, Beirut and Mumbai, was established in 1989.

Systematica studies, plans and designs infrastructure and transport systems at all levels, ranging from regional to urban and development scale. In particular, the company addresses urban transformation on a medium and large scale, the implementation of intermodal nodes and complex building structures ensuring adequate levels of sustainability and multi-modal accessibility, as well as the requalification of urban public places and large urban districts.

Endowed with a high profile Scientific Advisory Committee, Systematica operates in Italy and abroad, particularly in geographical areas characterised by strong levels of economic and demographic growth, such as those in the Mediterranean basin, North Africa, The United Arab Emirates, South America, Russia, India and the Far East.

Systematica guarantees to its Clients quality and competence as strategic advisors in the services of consulting, planning and design.

Introduction

The following study responds to two key issues: the global population is ageing at an unprecedented rate, and the global urban population is now larger than the rural population. In 2050, 70% of the world's population is predicted to live in cities, and the number of people aged over 65, are expected to triple to 2 billion, representing 22% of the total. In 2050, for the first time in human history, the number of older people will be greater than the number of children under 15 years old. China, India and the United States, will each have over 100 million people aged over 65.

In Europe, many countries are already facing these issues. In fact, ageing is one of the greatest economic and social challenges that OECD countries are facing, representing a radical demographic change comparable to the industrial revolution. The shift is dramatic, especially in Spain, Portugal, Italy and Germany: the countries where the ten most aged major cities in Europe are located.

Are we ready to respond to this societal change?
What issues, challenges and opportunities do older people face on a day to day basis in an urban context? What are the challenges and opportunities resulting from an ageing urban population? How can cities respond to this demographic change and deliver appropriate solutions?

Cities and urban environments, as the places where human lived experience are concentrated, have the potential to help us in understanding the method with which to mitigate, adapt to or manage societal changes. Thus, they have a fundamental role in defining how to respond to our ageing society.

'Shaping ageing cities' is a comparative overview of the structure, both social and physical, of 10 selected cities, referring to population ageing data and reflecting through the lenses of society, mobility, the built and digital environments. This was possible thanks to the strong multidisciplinary team involved which, apart from Arup, includes HelpAge International, Intel ICRI Cities and Systematica. A comparison among the trends and patterns of 10 European cities - analysed through the overlap of thematic maps showing ageing data with other urban data - is the basis for further investigation of the relationship between politics, planning and ageing.

The study revealed a complexity of geographies, relations, and processes that each city is experiencing. Qualitative research which focuses on Milan illustrates the human scale and the lives of older people in urban contexts – crucial in understanding the vulnerabilities and opportunities constructed around us in older age by both society and the physical environment. Through observing every-day life in older age, it is possible to design the necessary changes our cities need.

Without aiming to be exhaustive, the following collaborative piece of research defines a methodology with which to study ageing in European cities, understanding its main features (e.g. transportation, income, outdoor spaces and building design, social inclusion, ICT and health services, etc.) in order to apply this experience to the growing market related to city-making.

THE AGEING TREND

THE GLOBAL POPULATION IS AGEING AT AN UNPRECEDENTED RATE. RAPID URBANISATION, ALONGSIDE GLOBAL POPULATION AGEING, ARE MEGA-TRENDS THAT WILL DEFINE THE 21ST CENTURY. BUT WHAT DOES THIS MEAN FOR OUR GROWING TOWNS AND CITIES AND FOR OURSELVES, AS WE GROW OLDER?

The meaning of ageing

Written by Sion Jones, HelpAge International.

Ageing

Most of us will grow old. We will see the world change around us, experience different life events and see the people we care for change. Our physical, mental and cognitive functioning will change. Our wealth of experiences and knowledge will continue to grow and support us. Despite all of us eventually growing old, we live in ageist societies and cultures where discrimination and the denial of our rights on the basis of older age is prevalent because of harmful and negative stereotypes and perceptions of old age.

Old age itself is not an inherent vulnerability. It is the failure of policies, systems and society to respect and support the fulfilment of our rights in older age that constructs our vulnerability, through our exclusion from processes and decision making and inequitable access to resources and services. Neither are older people a homogenous group but rather we are diverse in our lived experiences throughout life and in older age. As individuals, we all enjoy a range of civil, political, economic, social and cultural rights that are however often denied in older age due to patronising and paternalistic ageist discrimination and harmful stereotypes

Rapid urbanisation

With rapid global urbanisation, towns and cities will become the dominant environment within which we exist - not just in our youth, but also in our older age. The United Nations Population Fund estimates that by 2020, over 50% of people aged 60 years or older, will live in an urban environment. Global population ageing alongside rapid urbanization will mean:

- Most of us, and more of us than ever before, will grow old living in towns and cities
- Of the people living in towns and cities, more of us than ever before will be older

An increasingly urban context to our lives in older age demands specific and tailored policies and systems to ensure our enjoyment of the full range of rights. As towns and cities across the globe continue to grow, more people are growing old in housing, streets, communities, towns, cities and mega-cities that are failing to respond appropriately to ageing populations with specific policies that remove any and all forms of discrimination based on older age.

Challenging ageist discrimination

Discrimination and the subsequent denial of rights based on older age might manifest itself in urban environments through restricted participation in decision making, inaccessible public transportation, barriers to the enjoyment of open spaces, poor health due to pollution or sedentary lifestyles, low quality or inappropriate housing or the absence of a secure and adequate income. We may also face an absence of choice in where we age as the economic and social profiles of communities change around us, disrupting existing social patterns.

The increasing risk to densely populated urban areas of climate change related events and emergencies (in which people in older age are disproportionately affected) further emphasises the need for policies and systems that respect and protect our rights in older age to build more resilient communities and urban environments.

Of course our older age is not the only basis for discrimination we might face - our identity is also constructed by meanings around gender, religion, ethnicity, sexuality, class, socio-economic status and a multitude of other intersectionalities that interact with each other and with our age. Urban environments are unique in often bringing together diverse and

AGEING WORD CLOUD

50%
BY 2020 OVER 50% OF PEOPLE AGED 60 YEARS OR OLDER WILL LIVE IN AN URBAN ENVIRONMENT.

SOURCE
UNFPA, 2007. State of world's population

868 MILLION
TODAY, THE POPULATION OVER 60 IS 868 MILLION, NEARLY 12% OF THE GLOBAL POPULATION.

SOURCE
Helpage International, 2014. Global Age Watch Index

varied people from different backgrounds and perspectives, and so understanding how these other intersectionalities interact and lead to discrimination and the denial of our rights is a critical part of responding to rapid urbanisation and ageing populations.

Harnessing opportunities
The opportunities and intrinsic advantages of urbanisation, larger scale social organisation and agglomeration, are driving the growth of cities across the world. This provides an unique opportunity to influence and design expanding urban environments and social structures in ways which respect, protect and fulfil our rights, including in our older age.

The emerging and increasing political and economic power of city level governments provide further opportunities. Appropriate responses are required at all levels - national, regional, city and local government, community, family and individual - to ensure the enjoyment of the full range of rights by all regardless of age in an increasingly urban world and secure a thriving and progressive future for ourselves and the cities we are growing old in.

The forms and functions of the physical and social world around us, have the potential to challenge discriminatory systems and ensure the fulfilment of our rights in older age. Innovations in technology, new perspectives in designing and planning the physical built environment,

the role of public transportation in facilitating our activities and social participation and connectedness are all relevant.

The way in which our expanding and ever changing cities disrupt and challenge our social relations and fabric is particularly relevant to building prosperous and inclusive urban communities. Strong civil society delivering effective participation, engagement and policy influencing throughout our older age, alongside investment in community facilities, public ownership of inclusive spaces and growing cross community and intergenerational linkages are also vital.

In an increasingly urban age, ensuring the fulfilment of our rights without discrimination based on our older age is key to building inclusive, sustainable, secure and prosperous communities for all.

2.02 BILLION
BY 2050, THE POPULATION OVER-60 WILL BE 2.02 BILLION, COMPARED TO 2.03 BILLION CHILDREN WITH LESS THAN 15 YEARS.

SOURCE
Helpage International, 2014. Global Age Watch Index

55%
WOMEN ARE 55% OF THE 60-PLUS GROUP, 64% OF THE 80-PLUS AND 82% OF THE 100-PLUS GROUP.

SOURCE
Helpage International, 2014. Global Age Watch Index

Ageing in cities: a framework

In 2007, the world passed a significant milestone in its development when for the first time in history, 50% of the world's population was living in urban areas. The number of megacities with over 10 million inhabitants increased from 2 in 1900 to 20 in 2000.

Despite urbanisation and population ageing being recognised as two key defining trends, the impact of how their intersection determines the lived experiences of communities and people in older age has largely been ignored. With cities home to millions of young people, government and civil society initiatives and programmes have largely focused on supporting their valuable contribution to communities. However the continued exclusion of older people from decision making and planning is no longer sustainable. Changes in the demographic profile of cities are triggering profound systemic changes in the way cities develop, are managed, and sustain successful communities.

Age Friendly Cities
The World Health Organisation has established a network of age friendly cities and communities with a desire and commitment to create physical and social urban environments that promote health and a good quality of life for residents in older age. The WHO has led the way in emphasising the relationship between health and the social and built environments through encouraging active ageing.

The methodology follows a 5 year cycle which begins with the participation of older people in assessing the 'age-friendliness' of a city or urban community, developing a shared action plan and the identification of appropriate indicators of success. By sharing experiences and best practice, cities can draw on the experiences of other urban areas across the world. A number of key issues are specifically identified by the Age Friendly Cities methodology, including housing, community support and health services, communication and information, respect and social inclusion, civic participation and employment.

Developing inclusive urban environments
The built environment plays a significant role in the construction of social relationships and experiences and can be designed to be appropriate for communities and people throughout their life course. Places to rest, access to green spaces, well designed and safe streets and pavements, accessible pedestrian crossings, walkways and cycles paths can all play an important role in supporting social interaction and improving health. Pedestrian friendly and accessible cities and urban environments encourage social connections and physical activity across the life course, particularly in later life and can play a key role in developing physical, mental and cognitive function.

The availability, affordability and accessibility of public transportation can impact on our ability to move around a city, visit friends and family and access services, particularly in older age. Providing accessible information, planning transportation routes with appropriate destinations and providing specialised services where required, are all important.

Social participation in community events, activities and opportunities can be supported by ensuring awareness, affordability, encouraging intergenerational interaction and supporting the development of shared and inclusive spaces to help address exclusion and isolation and improve both physical and mental health. Addressing the multitude of issues that act as discriminatory barriers to participation and access to services is necessary to challenge existing ageist discrimination. As cities across the world rapidly expand, an unique opportunity exists to ensure that these emerging and existing urban environments and communities respect and protect our rights in older age.

THE AGE FRIENDLY CITY FRAMEWORK

TRANSPORTATION

HOUSING

OUTDOOR SPACES
AND BUILDINGS

SOCIAL
PARTICIPATION

AGE
FRIENDLY
CITY

COMMUNITY SUPPORT
AND HEALTH SERVICES

RESPECT AND
SOCIAL INCLUSION

COMMUNICATION
AND INFORMATION

CIVIC PARTICIPATION
AND EMPLOYMENT

SOURCE
WHO, Global Age-friendly Cities: A Guide
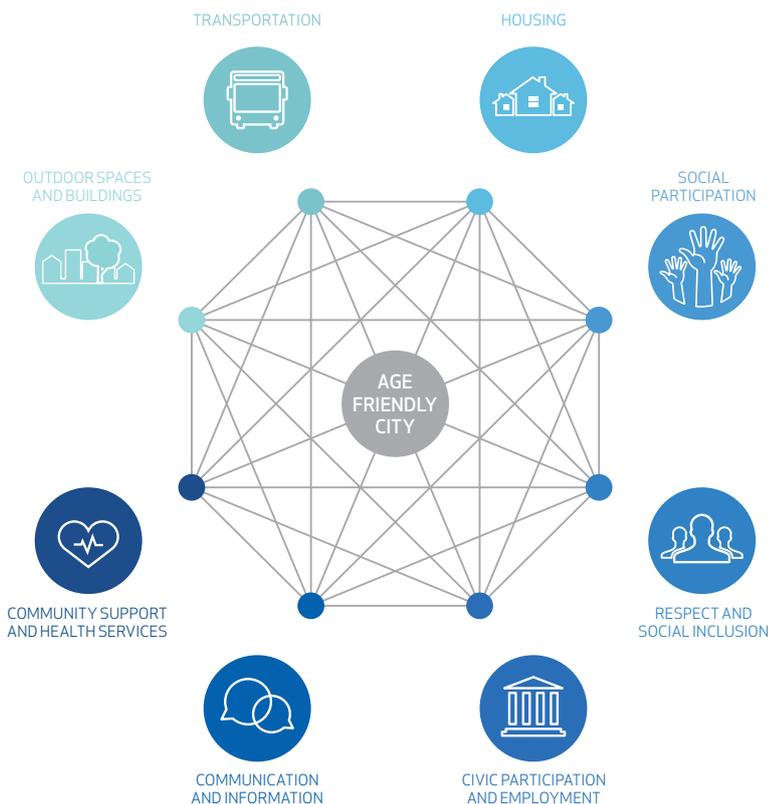
50%
IN 2007, FOR THE FIRST TIME IN HISTORY, 50% OF THE WORLD'S POPULATION WAS LIVING IN URBAN AREAS.

SOURCE
UN, 2012. World Population Prospects

70%
BY 2050, MORE THAN 70% OF THE WORLD'S POPULATION IS EXPECTED TO LIVE IN URBAN AREAS .

SOURCE
UN, 2012. World Population Prospects

SHAPING AGEING CITIES LENSES

SOCIETY

DIGITAL ENVIRONMENT

BUILT ENVIRONMENT

AGE
FRIENDLY
CITY

MOBILITY
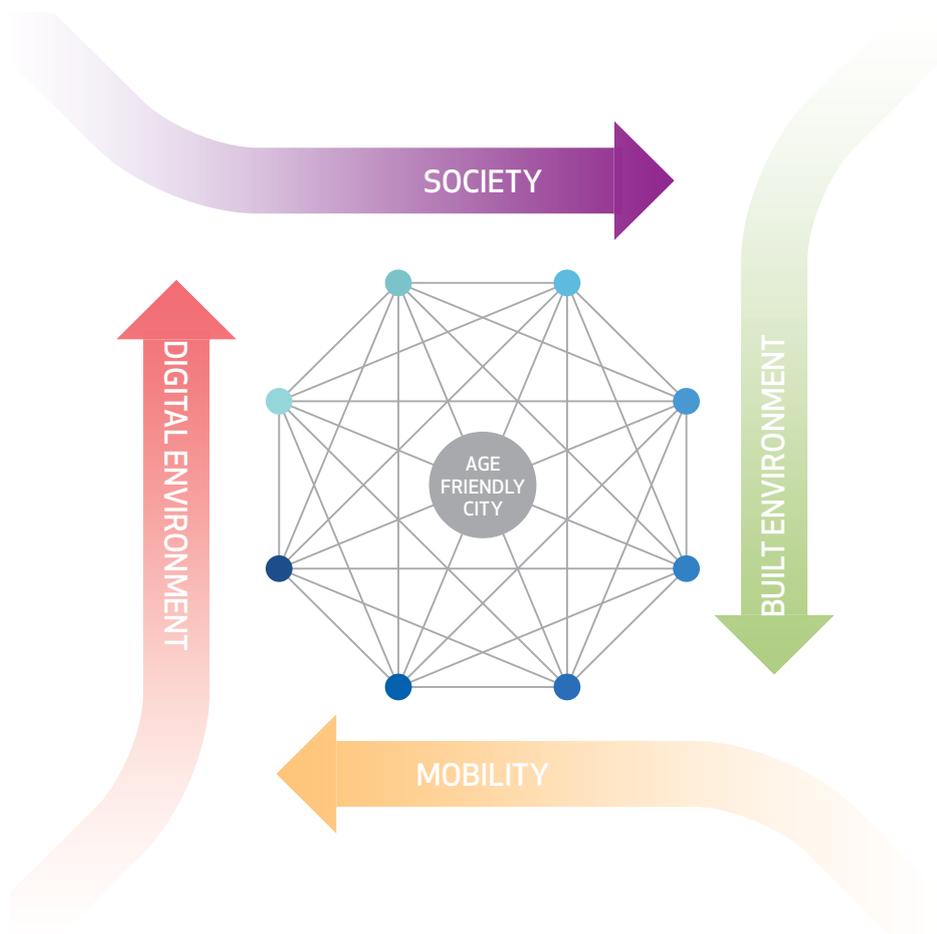
10
SINCE 1970, WORLDWIDE LIFE EXPECTANCY HAS RISEN BY AROUND 10 YEARS FOR BOTH MEN AND WOMEN.

SOURCE
UN, 2012. World Population Prospects

1004%
GLOBALLY, THE 100 AND OVER POPULATION IS PROJECTED TO INCREASE 1004% BETWEEN 2010 AND 2050.

SOURCE
UN, 2012. World Population Prospects

The world is ageing

The 21st century is experiencing unprecedented demographic change. Until the 20th century, the world was relatively youthful with high rates of child mortality keeping life expectancy at birth low. People aged over 60 made up only 5% of the world's population - but this is changing. Advancements in healthcare and education alongside economic development caused a swift decline in infant mortality and infertility rates. Combined with increasing numbers of people living to old age, we have seen a steep rise in the number of us growing old.

The proportion of the world's population aged over 60 is projected to increase from 12% in 2014 to 21% by 2050. In just over a generation there will be over 2 billion people aged over 60. China, India and the United States, will each have over 100 million people aged over 60.

The ageing of the global population is having significant impacts on many aspects of life including employment, education and health. Social and economic policies that reflect these changing dynamics support changing needs as populations grow older.

2017

65+

0-5
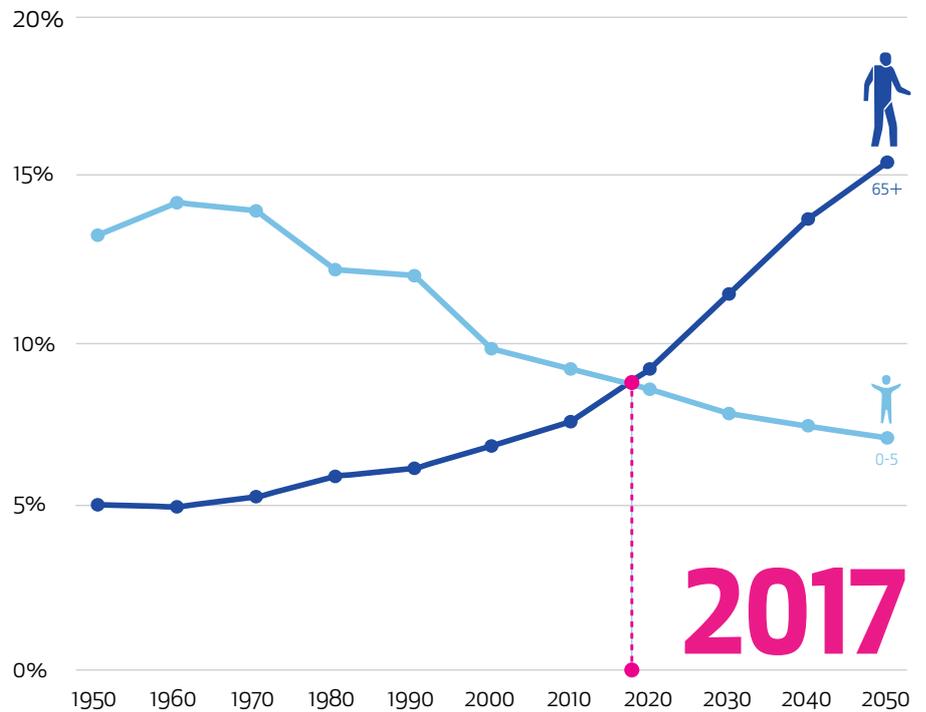
65+ GLOBAL TREND 1950-2050

DATA SOURCE
UN, World Population Prospects, 2012

% POPULATION 65+ 2014

% population 65+

0   10   15   20   25   30   35   %
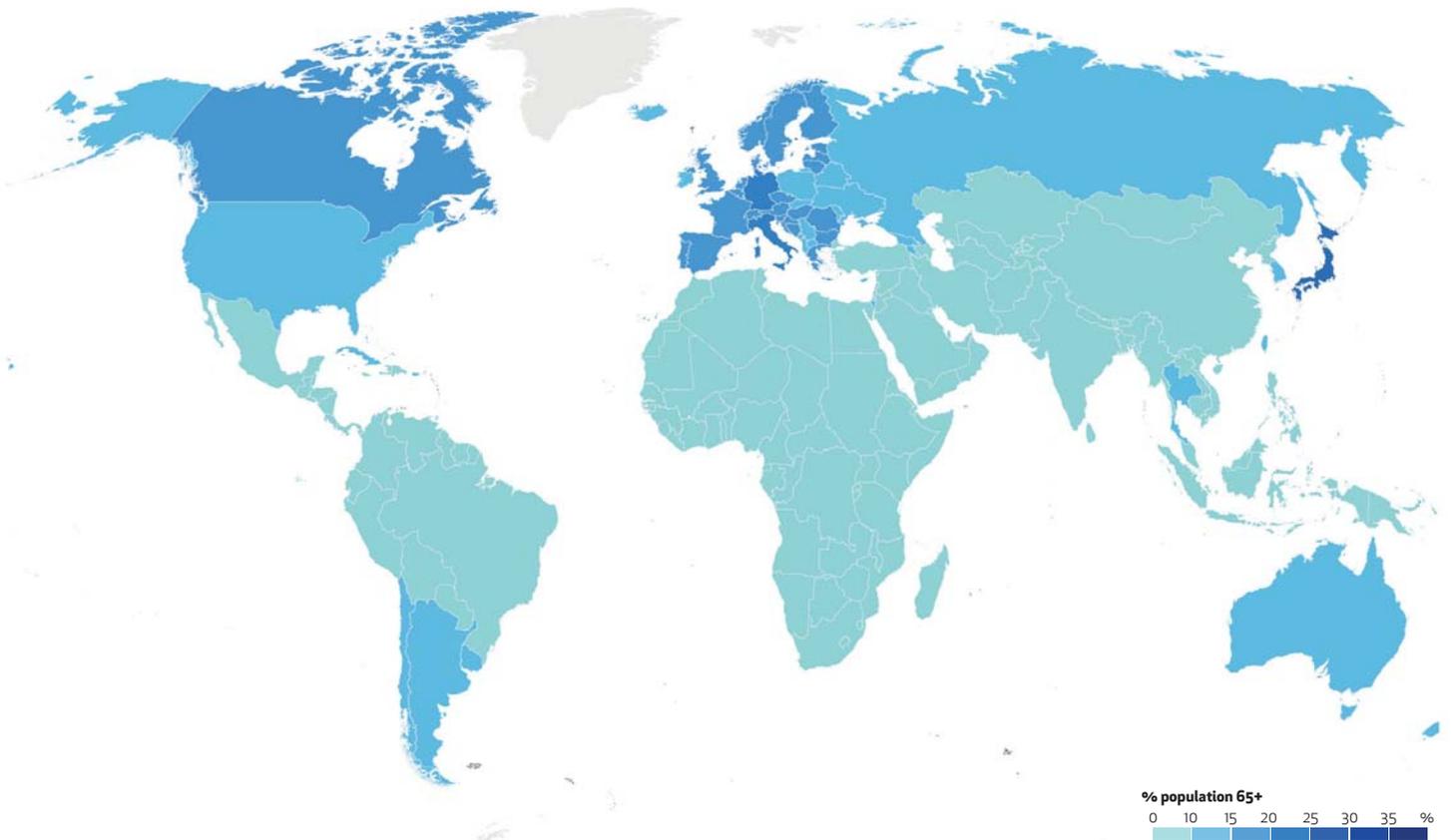
DATA SOURCE
UN, World Population Prospects, 2012

AGE PYRAMIDS 1950-2050

21%
THE WORLD'S POPULATION AGED OVER 60 IS PROJECTED TO INCREASE FROM 12% IN 2014 TO 21% BY 2050.

Europe 1950-2014
+44%
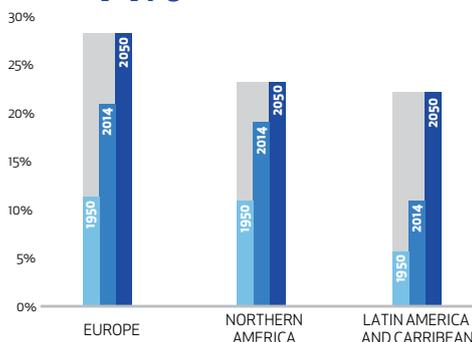
Asia 2014-2050
+38%
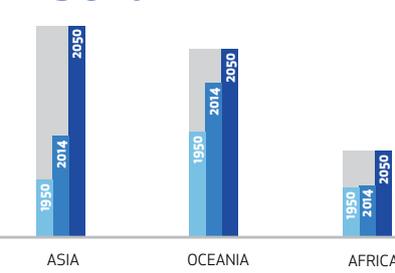
65+ CONTINENTAL TREND 1950-2050

EUROPE   NORTHERN AMERICA   LATIN AMERICA AND CARRIBEAN   ASIA   OCEANIA   AFRICA

100 MILLION
BY 2050 CHINA, INDIA AND THE UNITED STATES, WILL EACH HAVE OVER 100 MILLION PEOPLE AGED OVER 60.
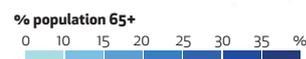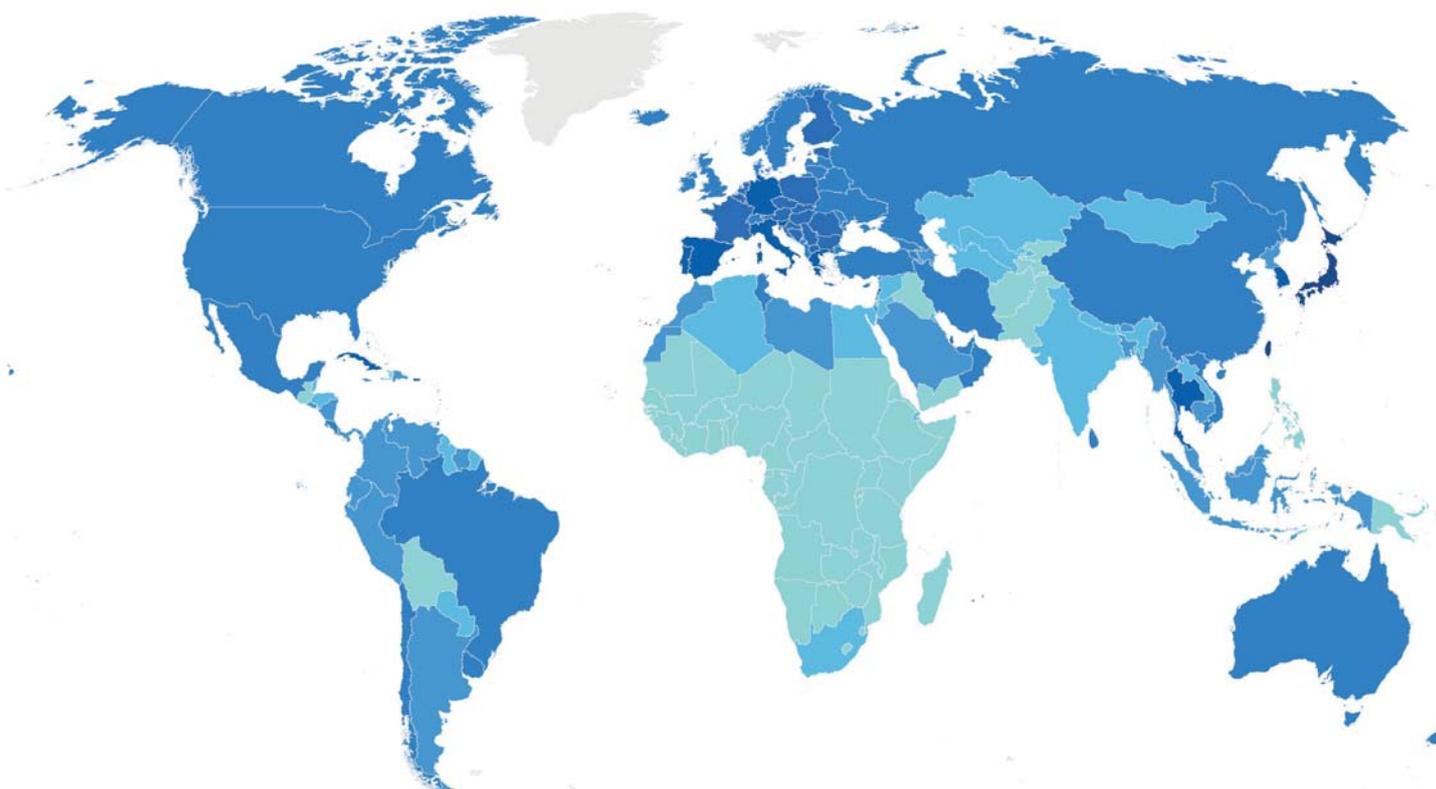
% population 65+
0   10   15   20   25   30   35   %

% POPULATION 65+ 2050

Europe is already aged

Ageing is one of the greatest economic and social challenges facing OECD countries and represents a demographic shift unequaled since the industrial revolution. By 2025, more than 20% of Europeans will be 65 or over, with a particularly rapid increase in the number of us older than 80 years.

We are becoming increasingly heterogenous in our older age. An increasing number of us are living health lives well into older age. We are economically productive, participating in social life and not dependent on long term health or social care. Yet we continue to face discrimination based on our older age that challenges our participation in society, our income security, our health and our ability to move around the urban environments we are increasingly living in.
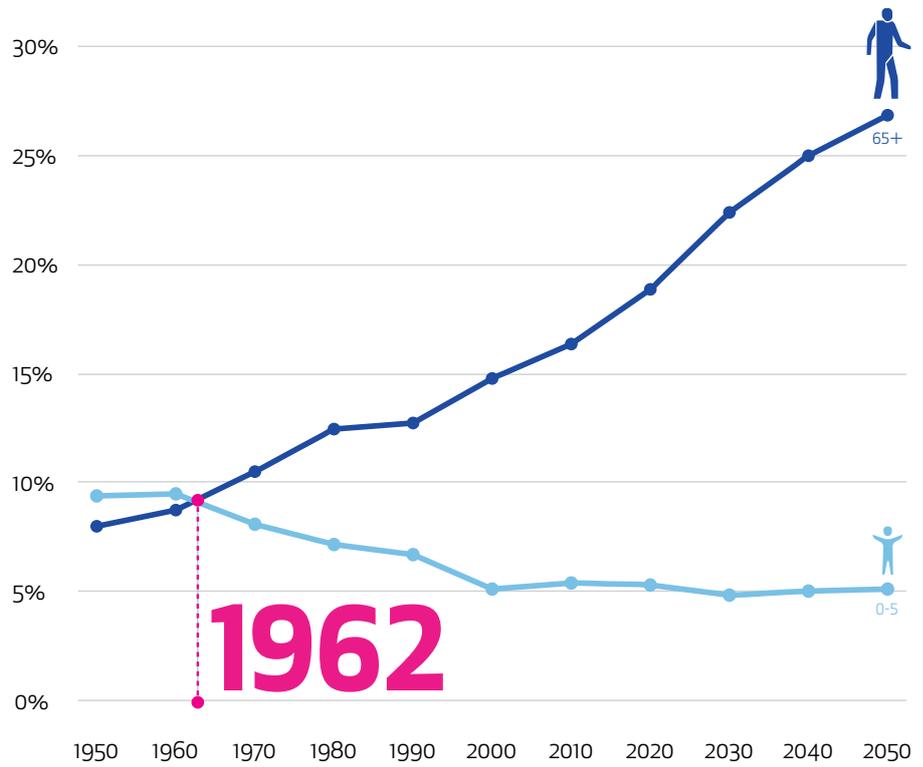
65+ EUROPEAN TREND 1950-2050

DATA SOURCE
UN, World Population Prospects, 2012
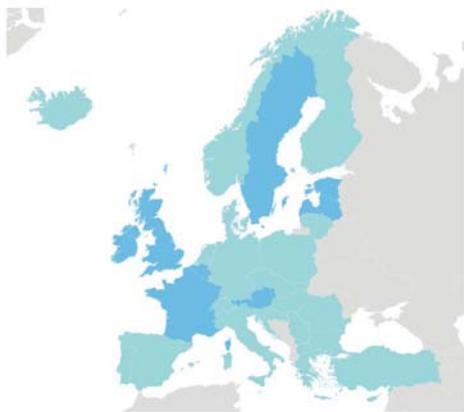
1950

DATA SOURCE
UN, World Population Prospects, 2012

1970

DATA SOURCE
UN, World Population Prospects, 2012
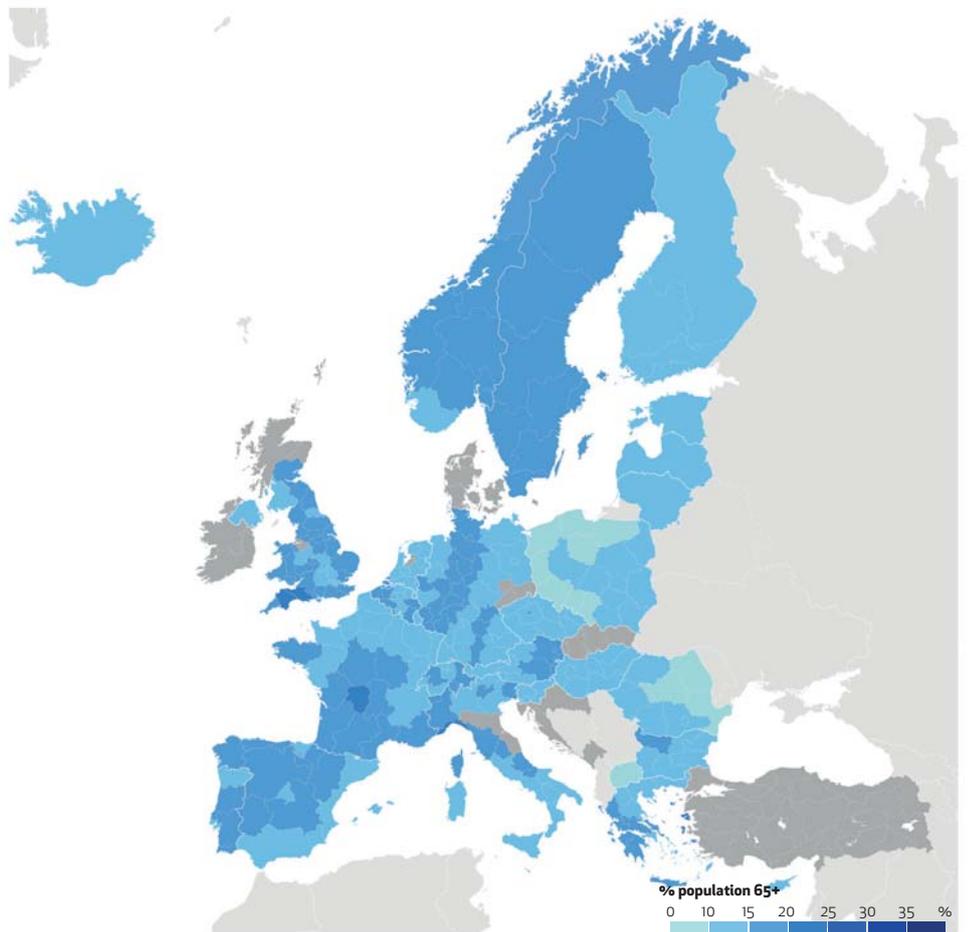
% POPULATION 65+ 1991 | NUTS 2

DATA SOURCE
Eurostat

AGE PYRAMIDS 1950-2050

DATA SOURCE
UN, World Population Prospects, 2012
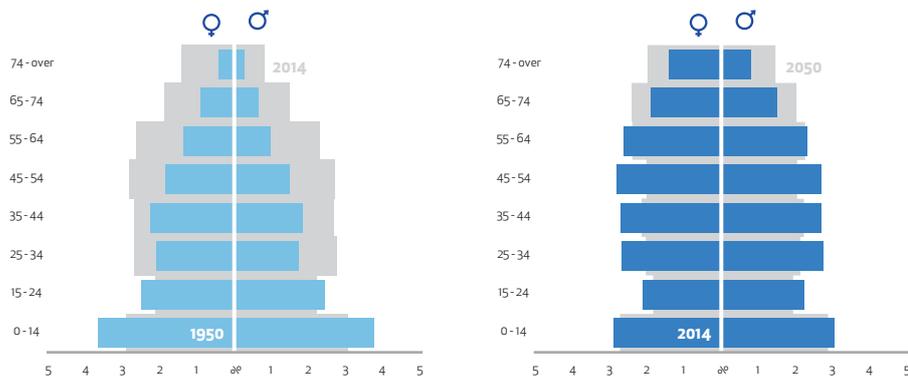
7YEARS
FROM 2010 TO 2060, LIFE EXPECTANCY AT BIRTH IS PROJECTED TO INCREASE BY 7 YEARS IN THE EU.

SOURCE
European Commission, 2012. The 2012 Ageing Report

65+ EUROPEAN COUNTRIES TREND 1950-2050

DATA SOURCE
UN, World Population Prospects, 2012
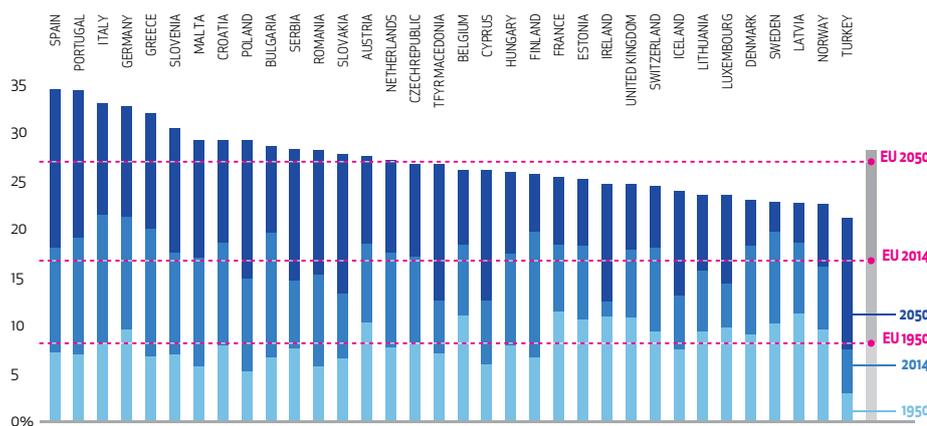
79.2
IN 2012 WAS THE LIFE EXPECTANCY IN EU. IT WAS 74.1 IN 1990.

SOURCE
European Commission, 2014. Health at a Glance: Eu 2014 Report

% population 65+
0 10 15 20 25 30 35 %
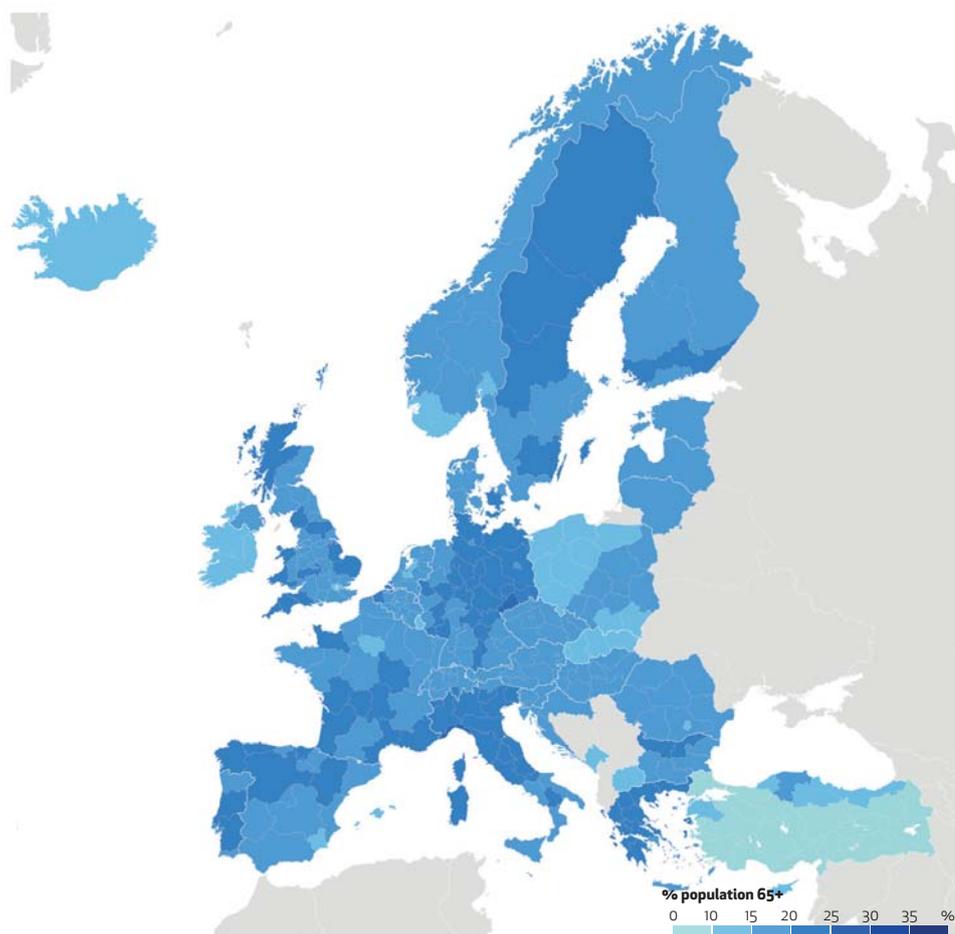
% POPULATION 65+ 2013 | NUTS 2

DATA SOURCE
Eurostat
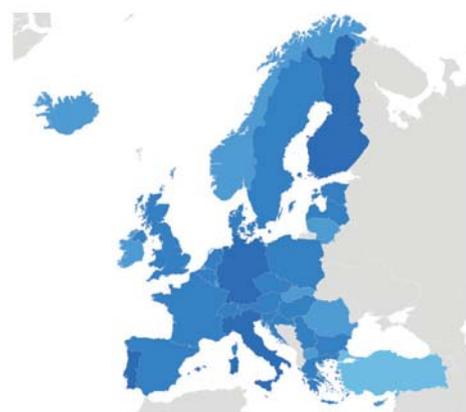
2030

DATA SOURCE
UN, 2012. World Population Prospects

2050

DATA SOURCE
UN, 2012. World Population Prospects

European Cities are...

Written by Arup.

Throughout the last 60 years, Europe gradually changed not only its population structure, but also in the geographic distribution of older people. Understanding existing geographical distribution is fundamental in exploring the political, economic, and environmental reality. Towards the end of the 20th and the beginning of the 21st Century, the percentage of older people increased in every European country, but at a different pace in each country – with few exceptions such as Turkey where it has remained stable.

Cities have followed their own distinctive patterns of change. Whilst most of the cities experienced population ageing, certain cities, such as Copenhagen became younger. Cities and urban environments, as the places where human lived expiriences are concentrated, have the potential to help us in understanding methods with which to mitigate, adapt to or manage the societal changes, and consequentely they have a fundamental role in defining how to respond to our ageing society.

*DATA SOURCE: Eurostat 1991, with the following exceptions: French cities (1990); German cities (1992), but Stuttgart (2001); Vilnius and Dublin (1996; Turkish cities (2000).

**DATA SOURCE: Eurostat 2012, with the following exceptions: French cities (2011); Sevilla, Wien and Cyprus (2008); Turkish cities (2004); Zagreb (2001).


COPENHAGEN
BERLIN
DUBLIN
LONDON
BRUXELLES
PARIS
AMSTERDAM
MILAN
MADRID
LISBON

Total population

15m
3m
1m
0.5m

% population 65+

0 10 15 20 25 30 35 %

% POPULATION 65+ 1991 | EUROPE'S CITIES

DATA SOURCE
Eurostat 1991*

65+ EUROPE'S CITIES TREND 1991-2012

DATA SOURCE
Eurostat 1991* | Eurostat 2012**
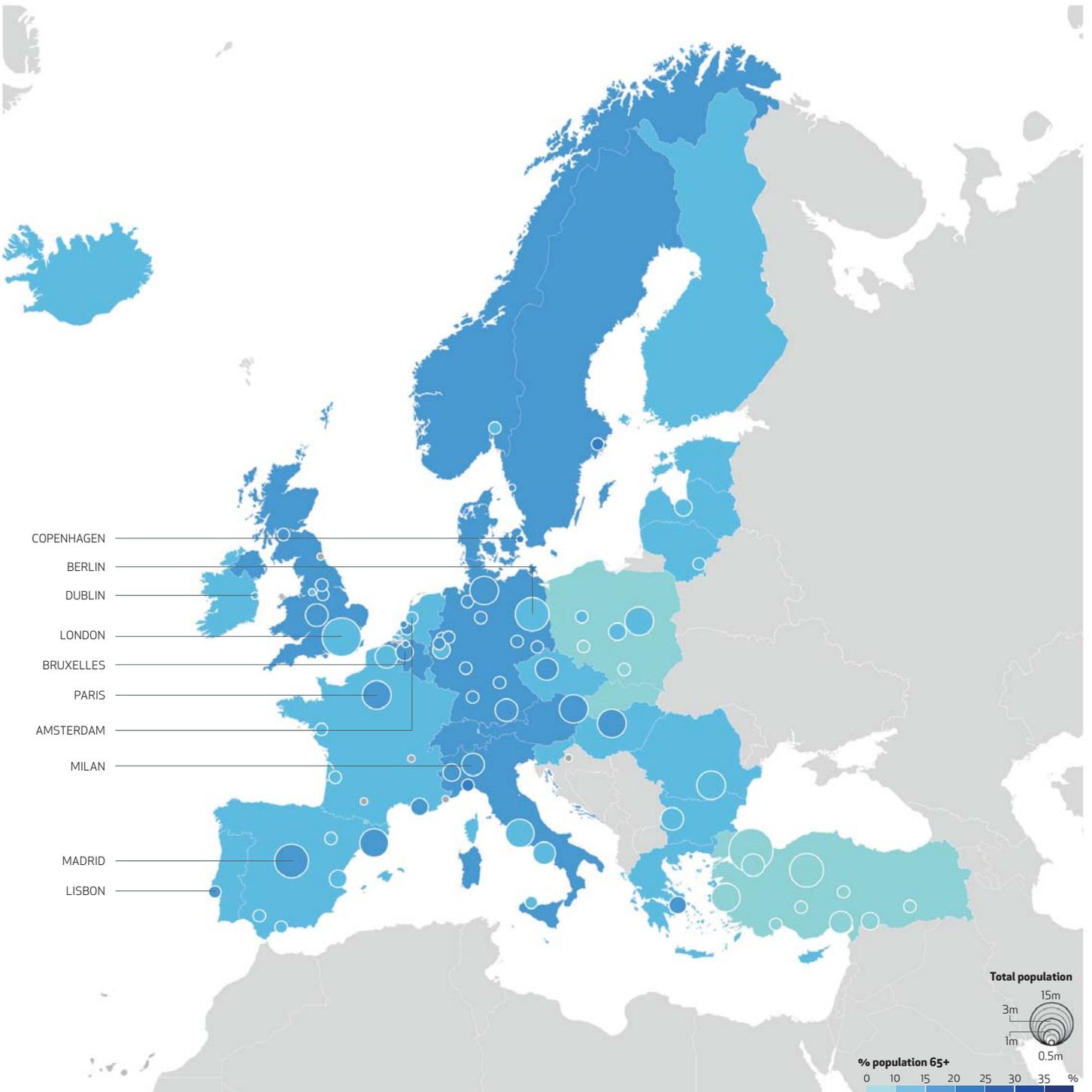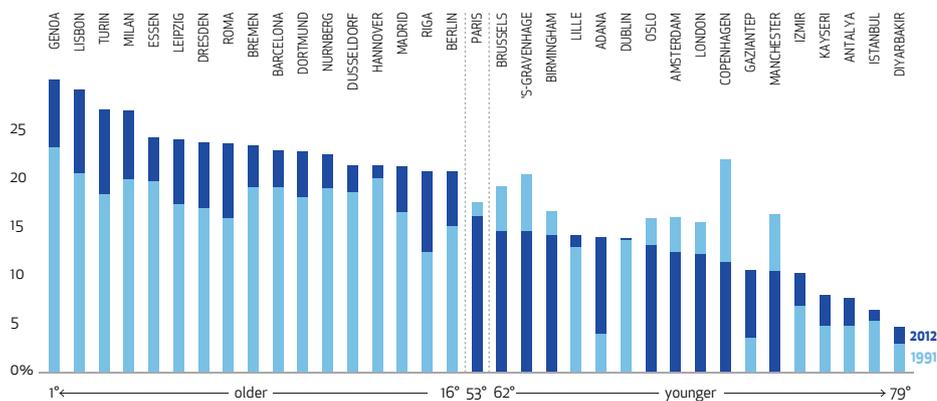
10%

IN THE NEXT 30 YEARS, OVER-80 POPULATION WILL REPRESENT MORE THAN 10% OF THE POPULATION IN MANY EU CITIES.

SOURCE
European Union, 2011. Cities of tomorrow
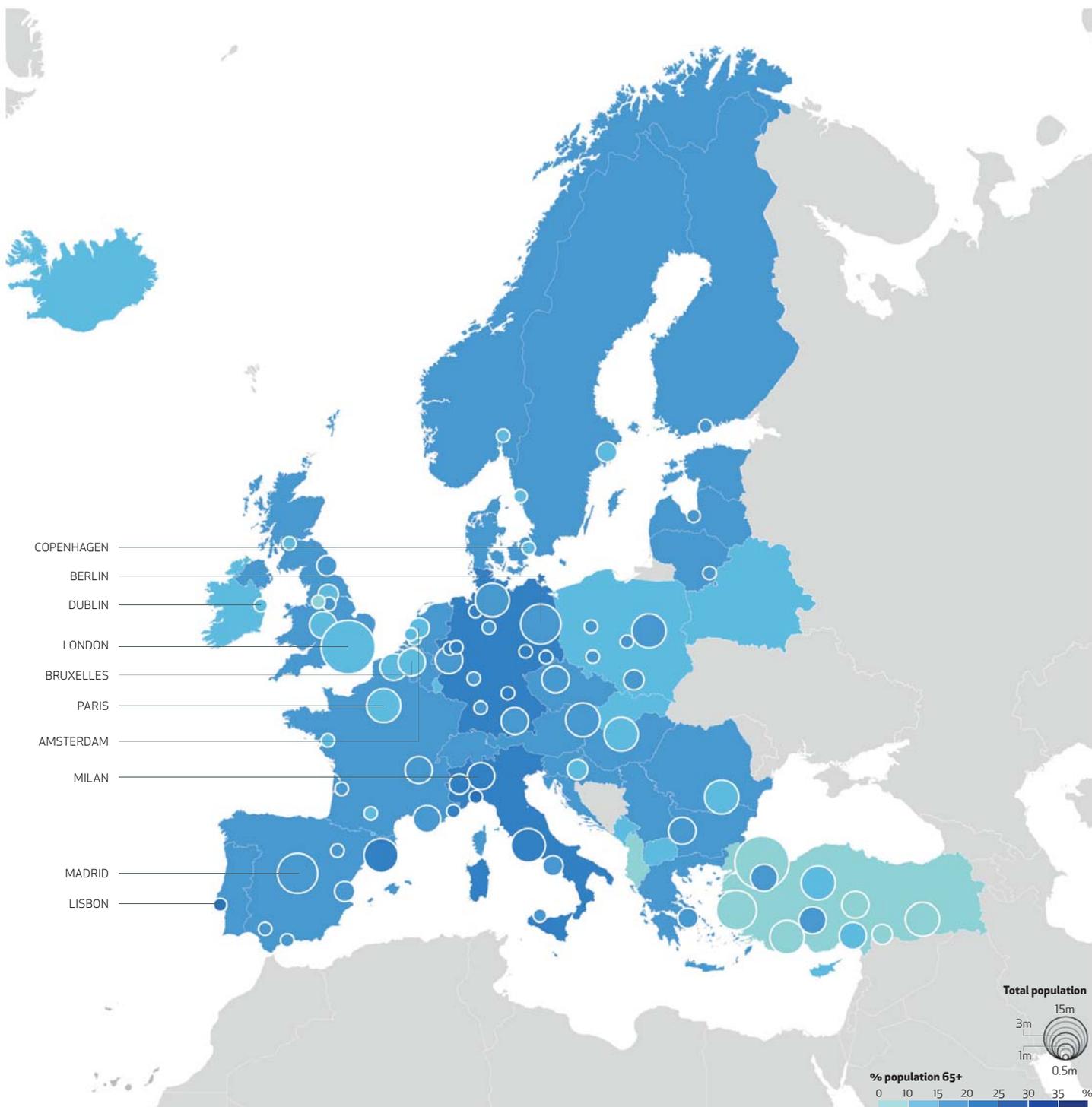
% POPULATION 65+ 2012 | EUROPE'S CITIES

DATA SOURCE
Eurostat 2012**

Urban ageing trends

Cities emphasize the consequences of social and demographic changes related to ageing, due to the faster nature of change, the more complex social composition they have, and a greater degree of design and human initiative that their functioning requires (e.g. in terms of mobility, digital and built environment). European cities have reacted to population ageing with a wide range of responses, from impact mitigation and management, to adaptation.

A comparison of the trends and patterns of 10 European cities is our basis to further investigate the correlation among politics, planning and ageing. At first glance, there is an inverse relationship between the growth of the total population of cities and the percentage of older people living there. Looking at the percentage variations, between 1991 and 2011, London, Brussels, Amsterdam and Copenhagen grew, attracting new residents and/or thanks to a positive birth rate, while their older population decreased. Shrinking cities or cities with low growth rate, such as Milan, Lisbon, Madrid and Berlin generally became older. Which processes of mitigation occurred in the growing cities? How do city structures in general adapt to or manage an ageing society?

0%   2001 | 5.2%   10%

10 CITIES AVERAGE   2011 | 5.8%

LONDON   6.7%

AMSTERDAM

BRUSSELS   7.6%

BERLIN   4.5%

COPENHAGEN

DUBLIN

LISBON   3.4%

MADRID

MILAN

PARIS
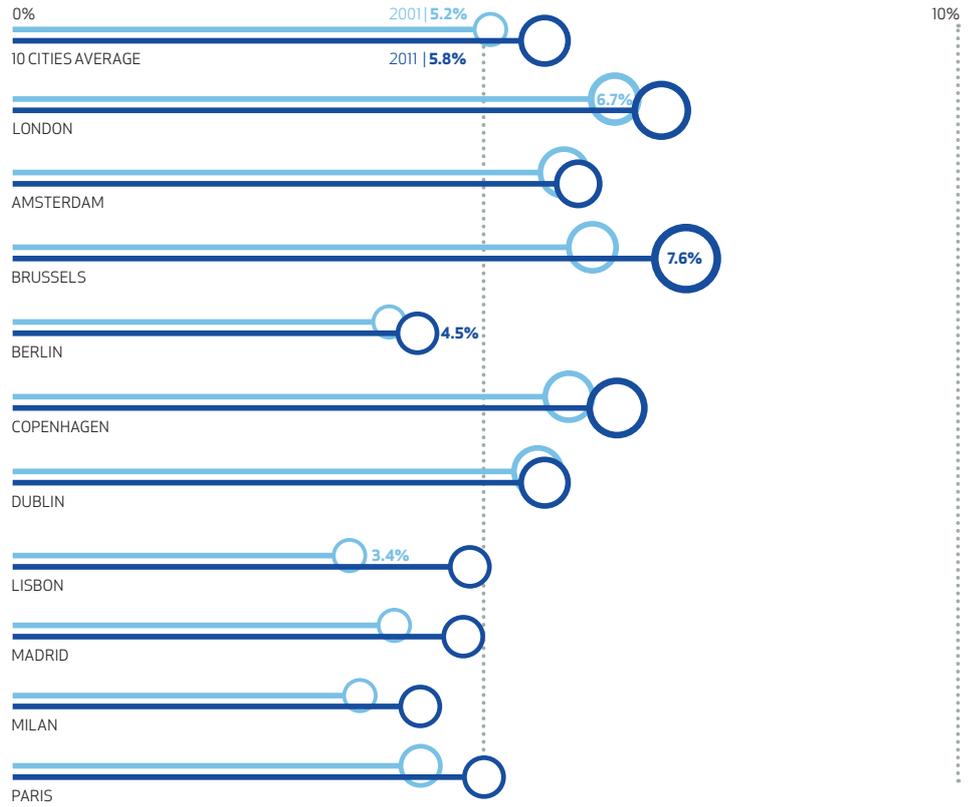
% POPULATION 0-5 2001-2011

DATA SOURCE
Eurostat

population change
core city | % variation 1991-2011

**65+ population change**
core city | % variation 1991-2011
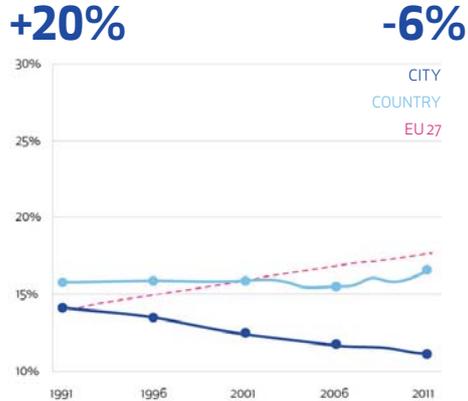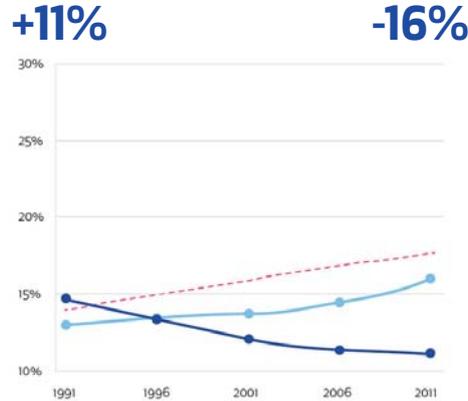
+20%   **-6%**

CITY
COUNTRY
EU 27

LONDON   DATA SOURCE Eurostat

+11%   **-16%**

AMSTERDAM   DATA SOURCE Eurostat

+19%   **-8%**

BRUSSELS   DATA SOURCE Eurostat

+0%   **+38%**

BERLIN   DATA SOURCE Eurostat

+16%   **-40%**


COPENHAGEN   DATA SOURCE Eurostat

+15%   **+17%**
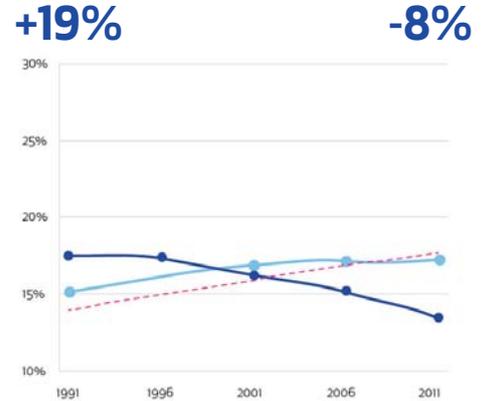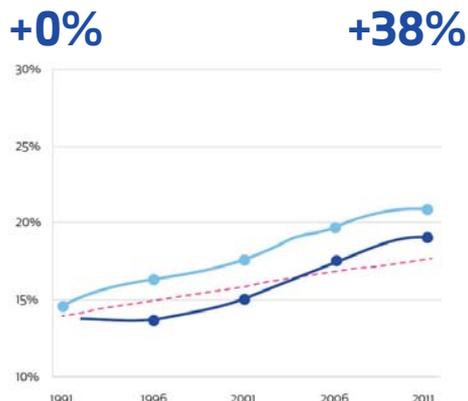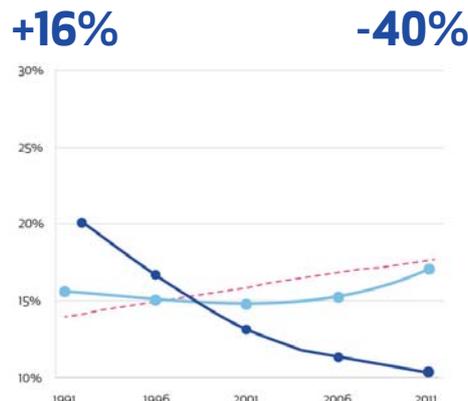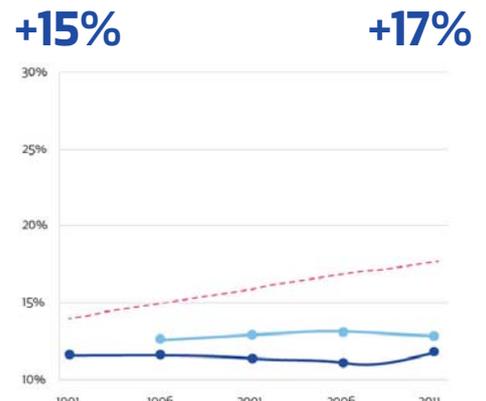
DUBLIN   DATA SOURCE Eurostat
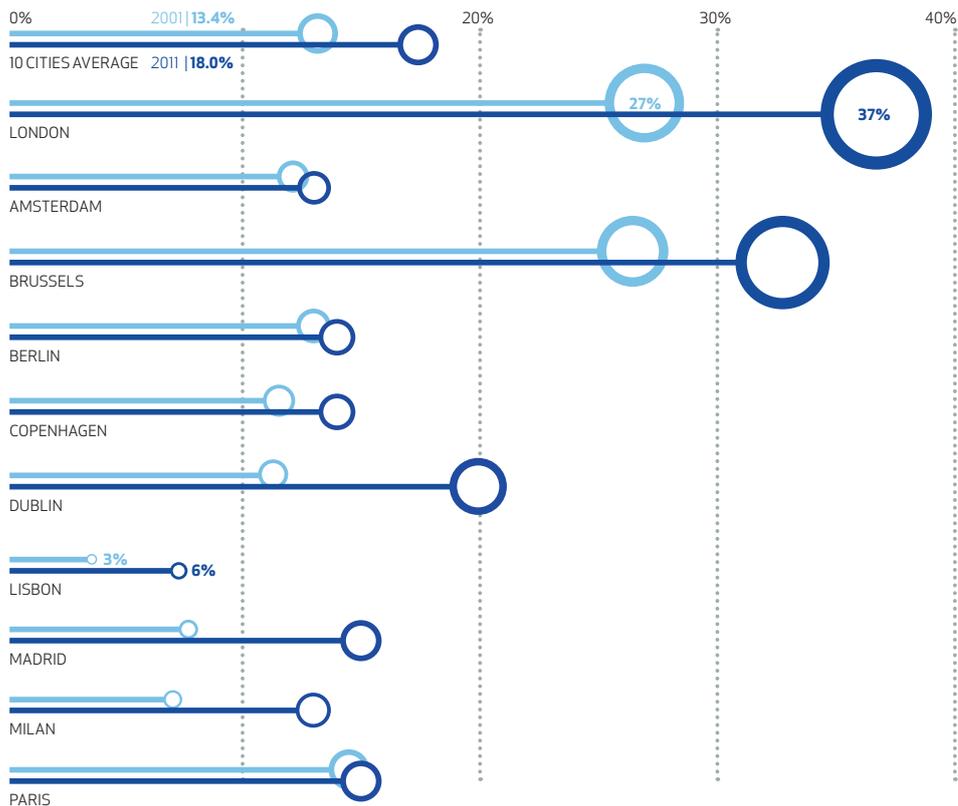
14%

IN 2012, IN MOSCOW 14% OF THE POPULATION IS AGED 65 AND ABOVE.

SOURCE
Global City Indicators facility and Philips, 2013. Cities and Ageing

7.5%

IN 2012, IN ISTANBUL 7.5% OF THE POPULATION IS AGED OVER 65. IN TURKEY IT WILL INCREASE UP TO 20.8% IN 2050.

SOURCE
Turkish Statistical Institute, 2013. News Release

0%   20%   30%   40%

2001 | 13.4%
10 CITIES AVERAGE   2011 | 18.0%

LONDON   27%   37%

AMSTERDAM

BRUSSELS

BERLIN

COPENHAGEN

DUBLIN

LISBON   3%   6%

MADRID

MILAN

PARIS

% FOREIGN POPULATION 2001-2011

DATA SOURCE
Eurostat
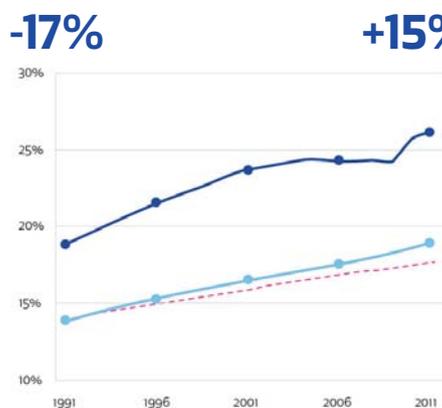
-17%   +15%

LISBON   DATA SOURCE Eurostat

+6%   +38%

MADRID   DATA SOURCE Eurostat

-3%   +26%

MILAN   DATA SOURCE Eurostat

+6%   +1%*
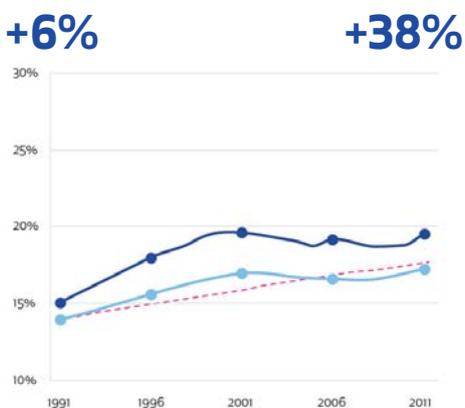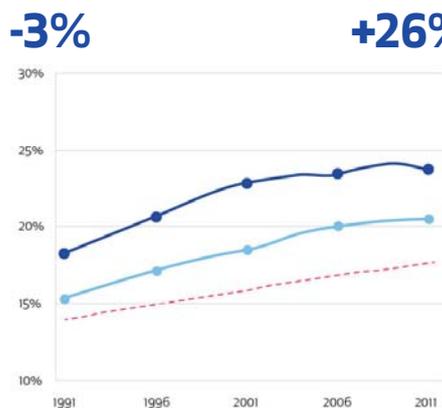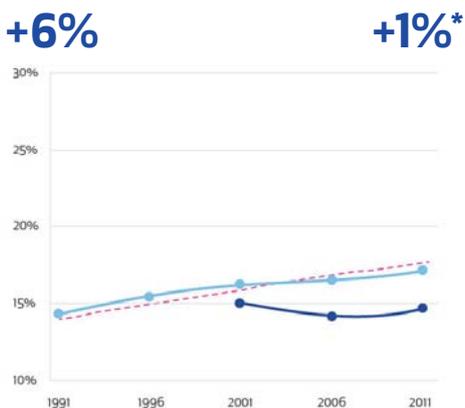
PARIS   DATA SOURCE Eurostat | *available data 1999-2011

65+ Trends
— Core city
— Country
--- EU27

AGEING IN EUROPEAN CITIES

2

EUROPEAN CITIES HAVE REACTED WITH A WIDE RANGE OF RESPONSES TO AGEING POPOULATION WITH A RANGE OF MEASURES. HOW DO CITY STRUCTURES AND SYSTEMS SUCH AS SOCIETY, MOBILITY, BUILT AND DIGITAL ENVIRONMENT RESPOND TO AN AGEING SOCIETY?

10 European cities

Written by Arup.

Cities do not necessarily experience the same demographic changes as their countries. Europe is growing older, and during the last 20 years, Milan followed a similar trend, but in Copenhagen the older population decreased. European cities appear to show both similarities and contrasting patterns.

The study that follows is an overview of how society, mobility, built and digital environment of 10 selected European cities compared to each other respond to the growth of the older population in Europe. The processes that each city experienced and the urban geographies that these processes have resulted in are complex and various. A comparison allows an initial hypothesis about cause-and-effect relationships, as a preliminary framework of the possible dynamics with the aim of encouraging further research. Far from being an exhaustive analysis, this comparative study points out some of the most interesting elements concerning society, mobility, built and digital environment in old European cities.

The research group chose London, Berlin, Amsterdam, Brussels, Copenhagen, Dublin, Lisbon, Madrid, Milan, and Paris for two main reasons. On the one hand, having professional connections in those cities has been an asset in the research process; on the other hand, preliminary research work concerning population trends in European cities over 500,000 inhabitants, showed that they were representative cases.

population | 2012   **administrative area** | sq. km

8,256,400   1,572

LONDON

SOURCE
Eurostat

790,110   166
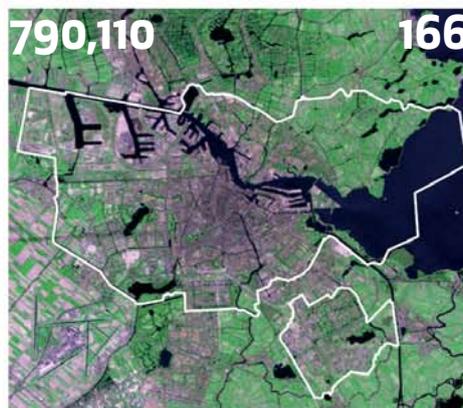
AMSTERDAM

SOURCE
Eurostat

1,159,448   161
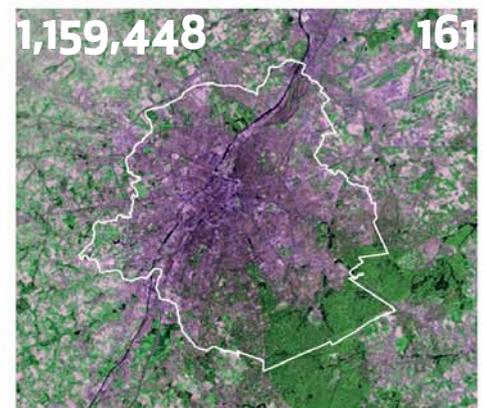
BRUSSELS

SOURCE
Eurostat

549,050   89

COPENHAGEN

SOURCE
Eurostat

516,255*   115

DUBLIN

SOURCE
Eurostat | *data available 2011

3,501,872   **892**
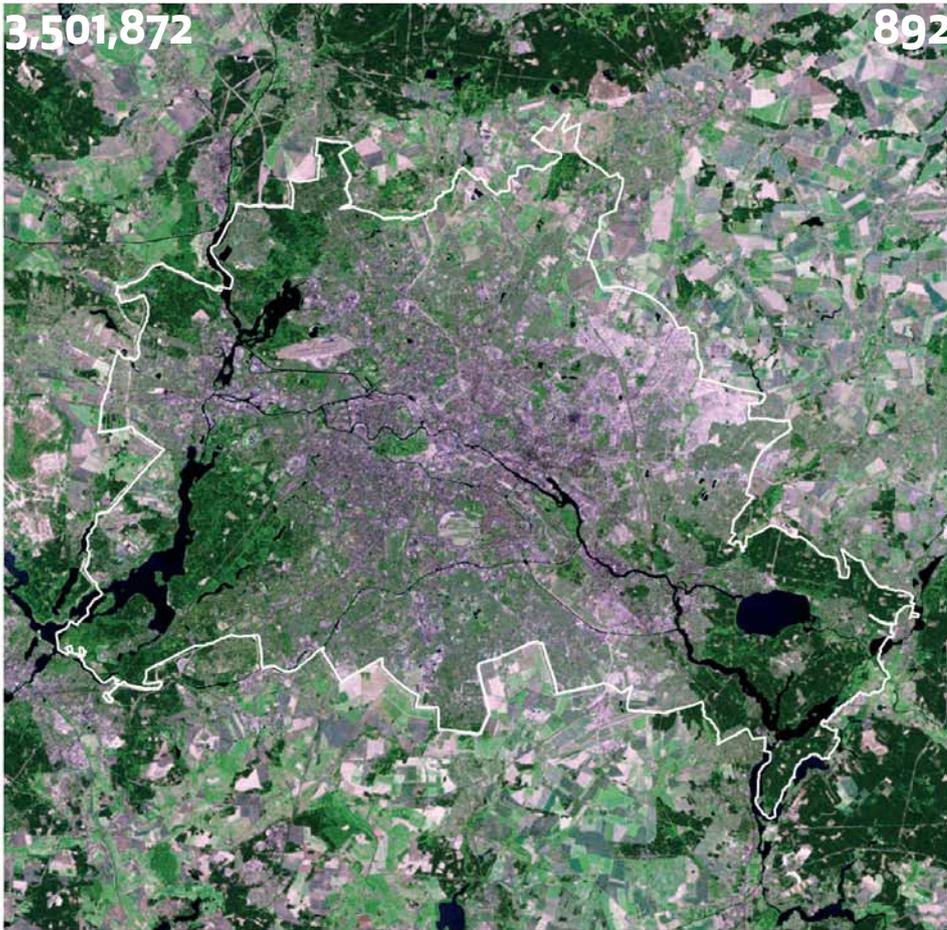
BERLIN   SOURCE
                                                       Eurostat

74%

**IN 2013, 74% OF THE
POPULATION IN EUROPE
IS CONCENTRATED IN
URBAN AREAS.**

SOURCE
The World Bank Database

53%

**IN 2013, 53% OF THE
WORLD POPULATION
IS CONCENTRATED IN
URBAN AREAS.**

SOURCE
The World Bank Database

537,412   **85**

LISBON   SOURCE
                     Eurostat

3,233,527   **606**
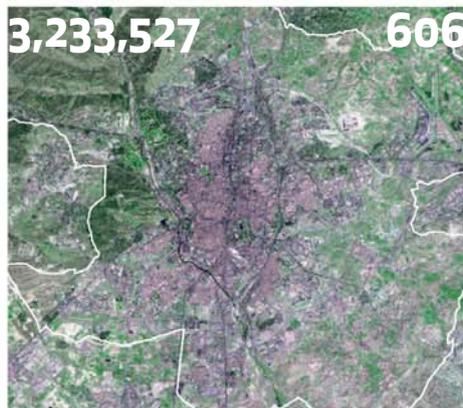
MADRID   SOURCE
                     Eurostat

1,262,101   **182**

MILAN   SOURCE
                     Eurostat

2,249,977   **105**

PARIS   SOURCE
                     Eurostat

Methodology

The cities' boundaries used at this stage of the research are representative of the extent of the political and administrative power of the city at the moment, they are all municipal boundaries except for Greater London. The limits of this methodology are mainly the wide range of population and areas of the cities chosen, and that in some cases discredit the analytic comparisons; the fact that a city can be in a transitional phase - and in the process of changing its administrative borders – as is the case of Paris. Nevertheless, the aim of this report is to give an immediate idea of the connections that exist among trends, geographies and factors representing and affecting ageing populations.

The analysis of micro-data and the mapping of demographic dimensions within the territories of the cities also required the selection of geographical units smaller than the municipal boundary. Since the 10 cities are located in 10 different states, the territorial units in which they are divided have different definitions. The choice from the different units available was based on size, in order to obtain comparable maps. For Berlin and Lisbon the study considered administrative units, respectively named Ortsteile and Freguesia; London and Dublin are mapped according to Wards, which are electoral units; while all the rest are statistical units, in some cases also used for administrative documents.

**statistical units**
625

average size | sq. km
2.6
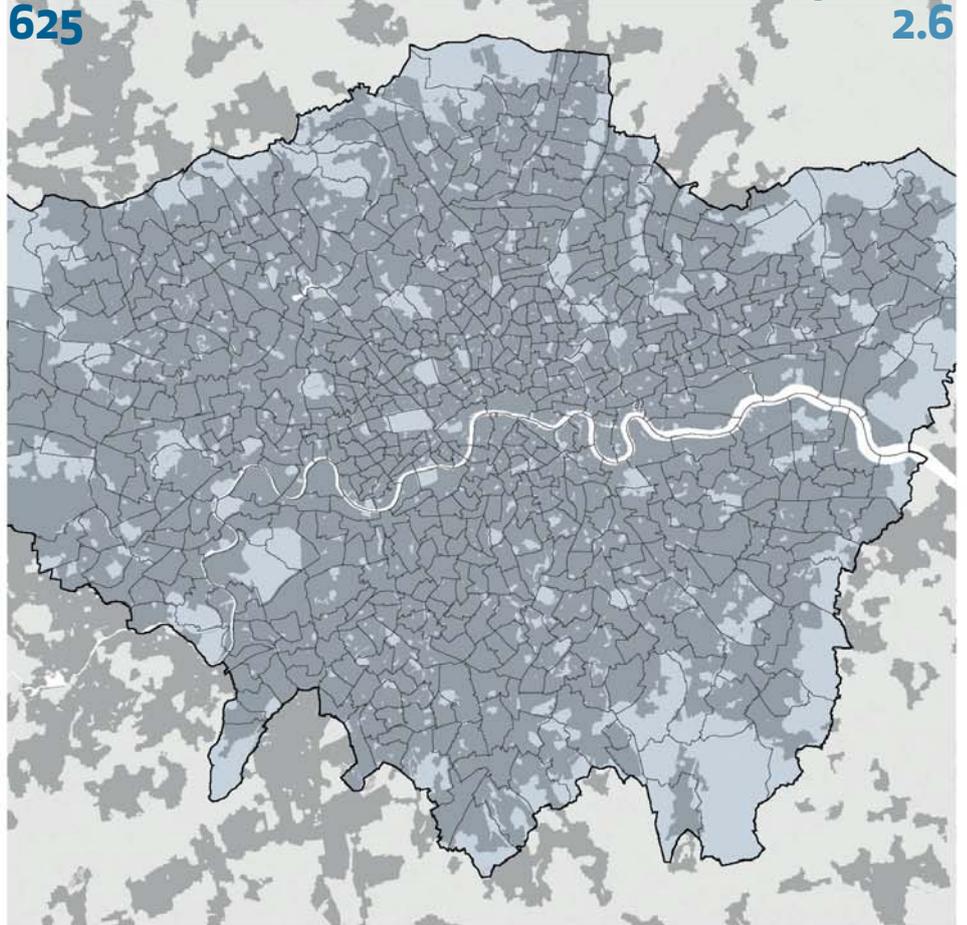
LONDON

DATA SOURCE
UK Data Service Census Support

97   **2.3**
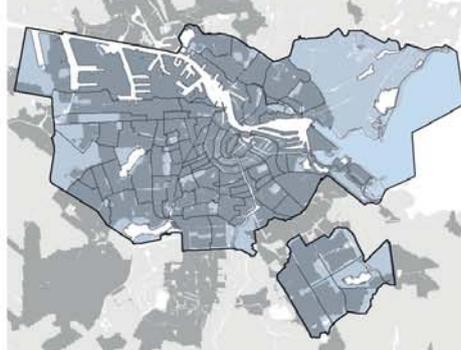
AMSTERDAM

DATA SOURCE
City of Amsterdam Open Geo Data

145   **1.1**

BRUSSELS

DATA SOURCE
IBSA, Monitoring des Quartiers

396   **0.2**
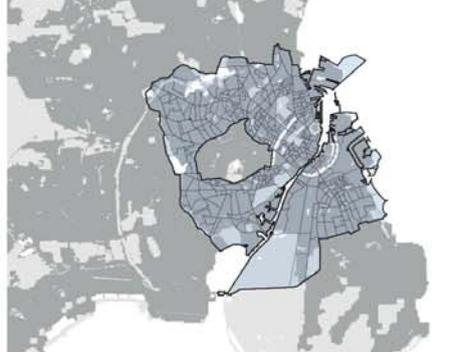
COPENHAGEN

DATA SOURCE
Copenhagen Data

162   **0.7**

DUBLIN

DATA SOURCE
Central Statistics Office

96 **9.3**
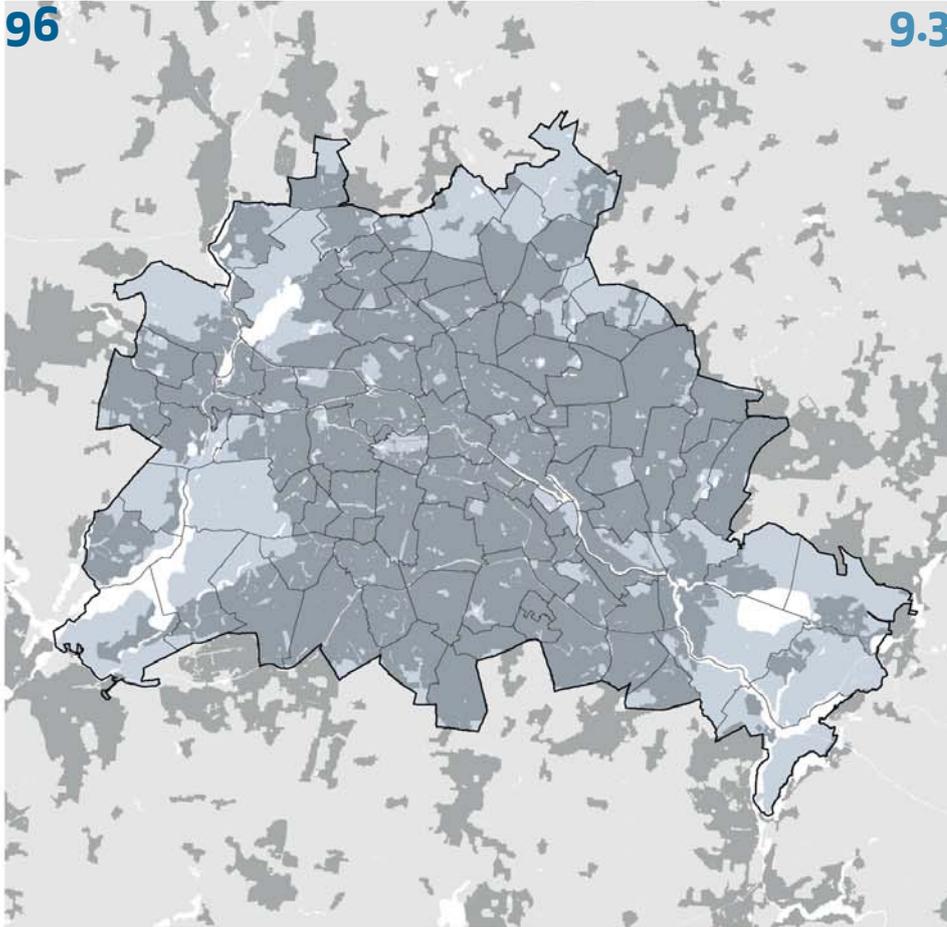
BERLIN

DATA SOURCE
Berlin Open Data

1,870

AMONG STATISTICAL, ADMINISTRATIVE OR ELECORAL UNITS ANALYSED ON FOR A COMPARATIVE STUDY ABOUT 10 CITIES.

53 **1.6**

LISBON

DATA SOURCE
Instituto Nacional de Estatística

128 **4.7**
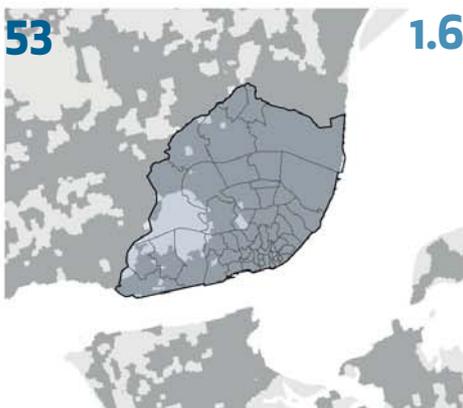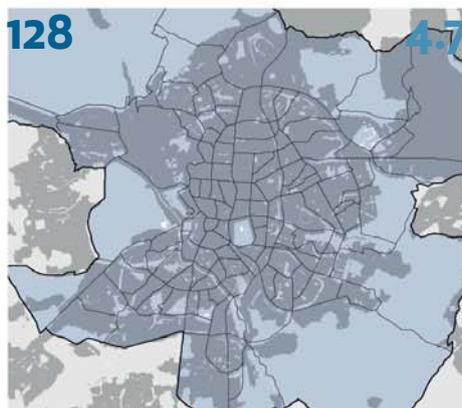
MADRID

DATA SOURCE
Comunidad de Madrid, Instituto de Estadística

88 **2.1**

MILAN

DATA SOURCE
Dati Comune Milano

80 **1.3**
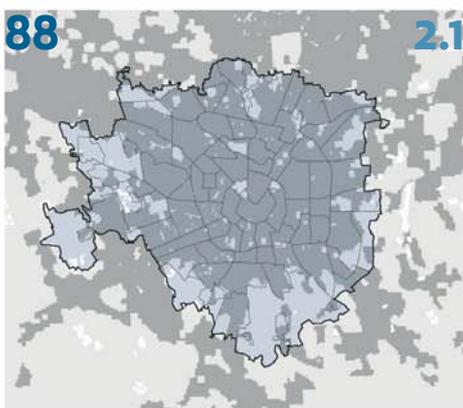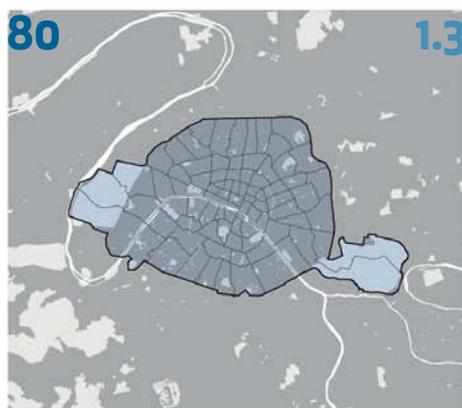
PARIS

DATA SOURCE
Apur

Maps of ageing

Older population distribution reflects specific geographies in cities. Cities assume various shapes according to the concentration of older people in certain areas or equally their dissemination across the urban territory. This geography, visible in the maps showing the cities divided into micro-areas, suggests the existence of a complex set of causes that generated them.

Undoubtedly, comprehending the maps of the distribution of the older population requires a wider analysis of the cities for example in terms of population density, accessibility, etc. In this study, mapping the concentration of inhabitants aged over 65 is the basis to investigate the fundamental relationships that exist between older people and the urban reality, in terms of society, mobility, built and digital environment.

The patterns of the 10 European cities selected show a correlation among the overall percentage of over 65 year olds in the city and their distribution within it. The older the city is overall, the more widely spread and scattered the older population appears.

Lisbon, Milan and Madrid register the highest percentages of older people with values that range from approximately 27% to 20% of the population. Mapping the percentages in micro areas, the distribution is almost homogeneous with few variations: while in Lisbon there are peaks also in the centre of the city, in Milan and Madrid the centres are slightly younger. In Berlin, Brussels and Dublin, where the overall percentage of the old age group goes from 20% to 13%, the suburbs are generally older than the centres of the city. In Dublin and Brussels, there is a visible ring around the centre, whilst in Dublin the concentrations areas are located in the northern suburbs.

Throughout the last 20 years, in Amsterdam, London and Copenhagen the older population registered decline as a percentage of the total; with only approximately 12-10% of the population older people, they are the youngest cities. The maps of Amsterdam and London show the highest percentages in the suburbs, but also concentrations in the centres. Copenhagen has only a few spots with percentages higher than 20%. Paris is a different case because the area chosen, correspondent to the municipal area, is smaller than the metropolitan area. The map shows concentrations in the centre and in the Southwest.

The overlap of these maps with city systems, such as green spaces, public transport networks and Wi-Fi infrastructure, together with an analysis of social, spatial, transport and environmental data gives a general understanding of the living conditions of older people in these cities. Through a closer look at the neighbourhoods where concentrations of older people are located, this study provides an opportunity to further reflect and suggest the need of multiple scales and perspectives of analysis.

peak 65+ | Riverside
42%

peak 80+ | Riverside
19%

zoom
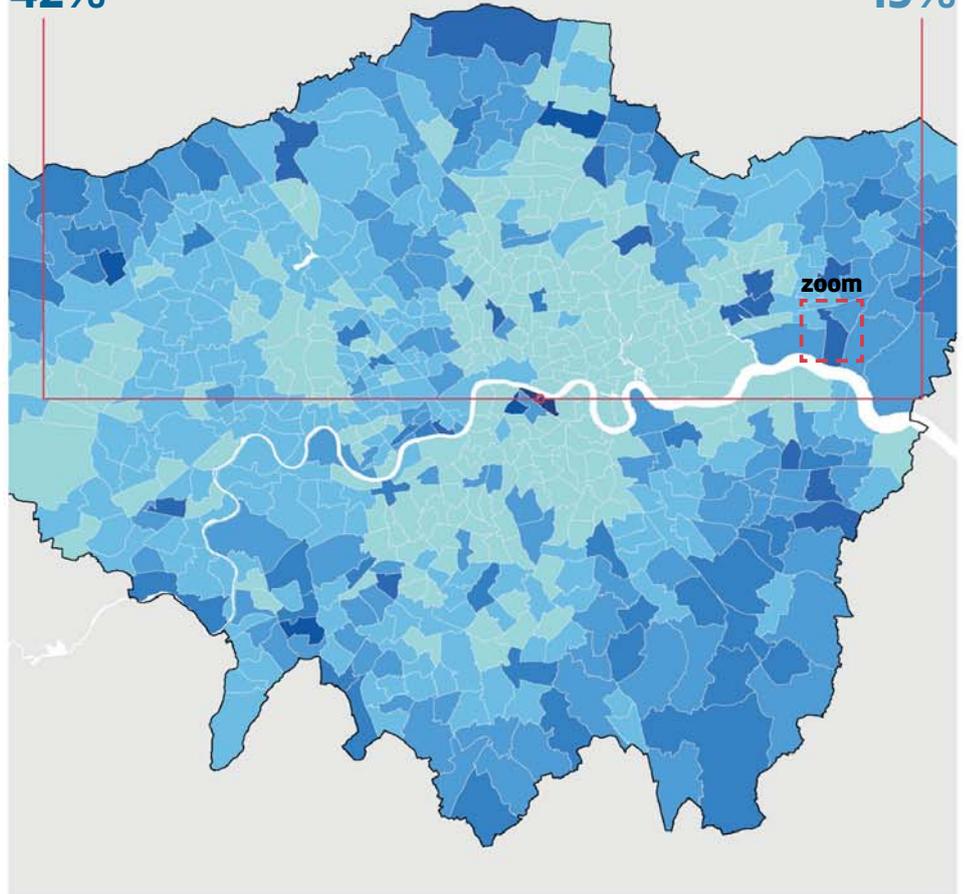
LONDON

DATA SOURCE
ONS, London Datastore, 2012

Buitenveldert-Oost
33%

Buitenveldert-Oost
15%

Villas de Ganshoren
26%

Scherdemael
9%
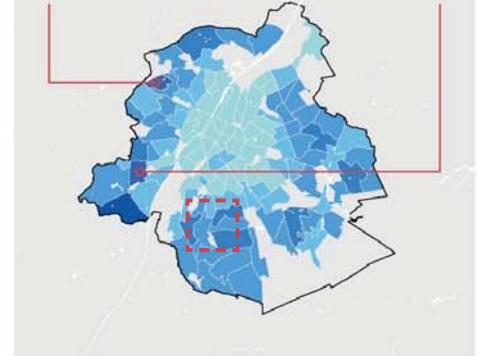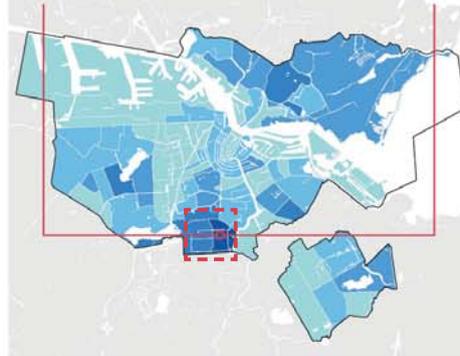
AMSTERDAM

DATA SOURCE
OS Amsterdam, 2012

BRUSSELS

DATA SOURCE
IBSA, Monitoring des Quartiers, 2012

Tåstrupvejs
32%

Tåstrupvejs
14%

Beaumont
32%

Ballygal
15%
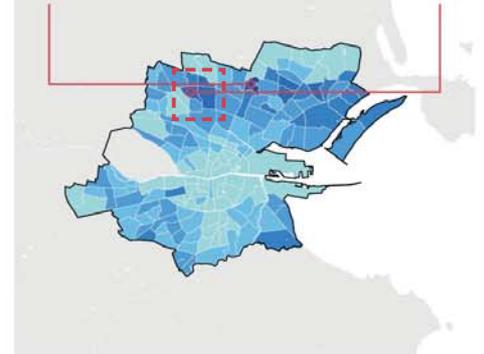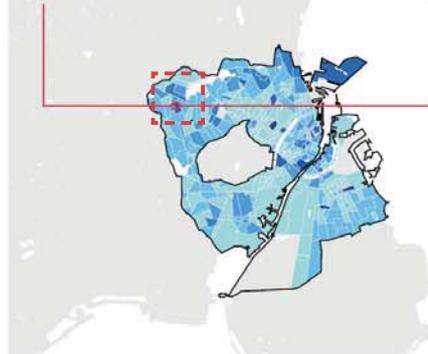
COPENHAGEN

DATA SOURCE
Statistics Denmark, 2012

DUBLIN

DATA SOURCE
Central Statistics Office, Census 2011

Stadtrandsiedlung Malchow
32%

Friedrichshagen
9%
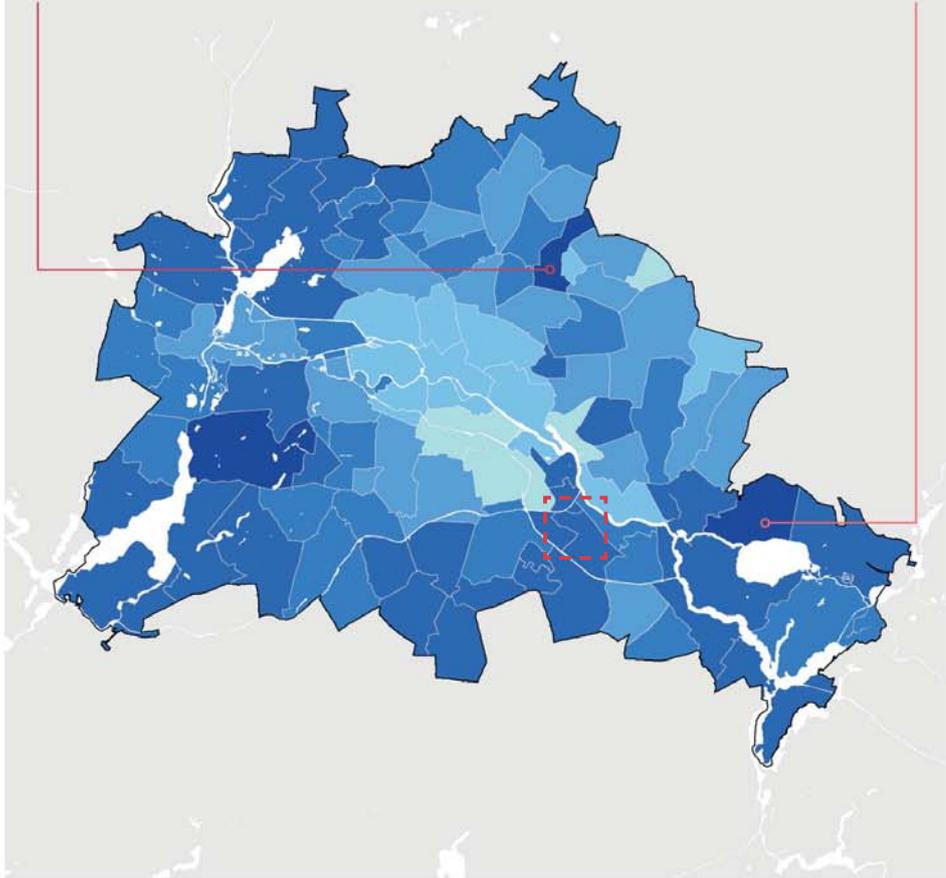
35%

IS THE PERCENTAGE OF ELDERLY PEOPLE IN ALVALADE (LISBON), HELLIN (MADRID AND GALLARATESE (MILAN).

LISBON

IS THE CITY WITH THE OLDEST CITY CENTRE AMONG THE 10 CITIES

BERLIN

DATA SOURCE
Statistik Berlin-Brandenburg, 2012

Alvalade
35%

Martirés
12%

Hellín
35%

Hispanoamérica
10%
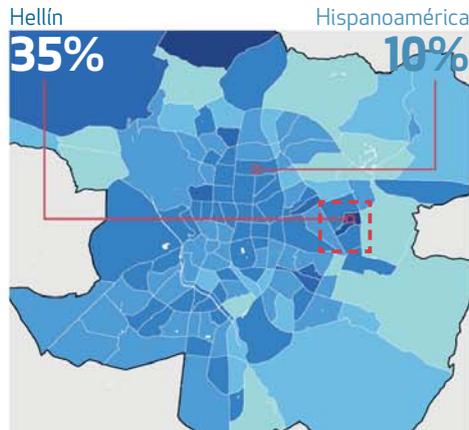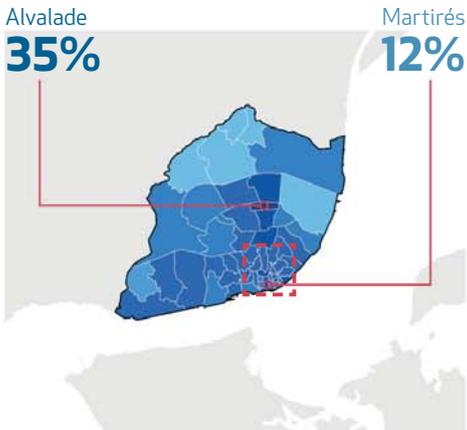
LISBON

DATA SOURCE
Instituto Nacional de Estatística, 2012

MADRID

DATA SOURCE
Munimadrid, 2012

Gallaratese
35%

Mecenate
12%

Saint-Thomas-d'Aquin
22%

Auteuil
9%
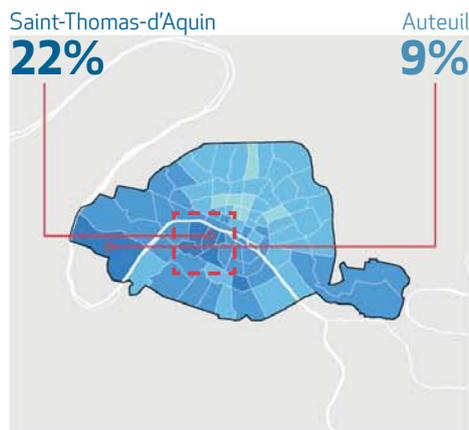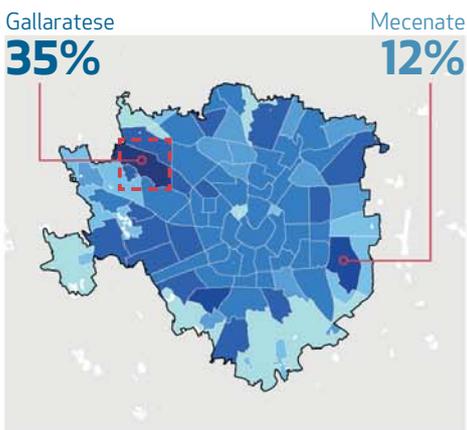
MILAN

DATA SOURCE
Dati Comune Milano, 2012

PARIS

DATA SOURCE
Insee, 2012

% population 65+

0   10   15   20   25   30   35   %
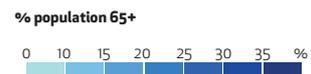
Ageing and built environment

According to 'Global Age-friendly Cities: A Guide' (WHO, 2007), green spaces are one of the most important features of an age-friendly environment. In general, green spaces contribute to improving people's lives in urban areas. They have a social, environmental and an economic value. More specifically, they contribute to an increase in social connectedness and provide spaces for sports and cultural activities. A park can improve air quality and air-cooling, it is an asset for water and flood management, it provides local habitats and ecosystems to maintain a degree of biodiversity in urban environments. Finally, a green space attracts new businesses, tourists, and in general generates economic vibrancy. All these positive elements have implications also for older people and their day to day lives.

The broader built environment also plays a role in promoting or inhibiting physical activity. As a public service, parks bring opportunities for older people to live active lives. Studies show that physical activities can extend healthy life expectancy and independent living, which contributes to the enjoyment of daily life.

For many oloder people, a green space is not only a place to exercise, but can also be a place to chat with other members of the community, to reunite or meet new friends. It enhances social interactions and encourages the creation of bonds. This is true both for intra-generational and inter-generational bonds: for instance, it is an occasion for older people to meet while providing care of their grandchildren.

Significantly, a green space are places to refresh during hot summers, to enjoy nature or practice gardening and horticulture, sometimes common activities for older people. They have a function in overcoming isolation, loneliness and inactivity.

The actual accessibility of green spaces requires a site-specific analysis, looking specifically at the design quality of these spaces. Nevertheless, at the urban scale, green areas, parks, fields and water (e.g. rivers and oceans) are also territorial natural amenities that urban planners can consider as structural elements of cities. For example, the percentage of green areas contributes to determining the living conditions and the quality of life in each city. In London green areas constitute 11.2% of the urban land, while in Milan they are only 6%.

max temperature (dry bulb) | °C

31°

min temperature (dry bulb) | °C

-6°

zoom
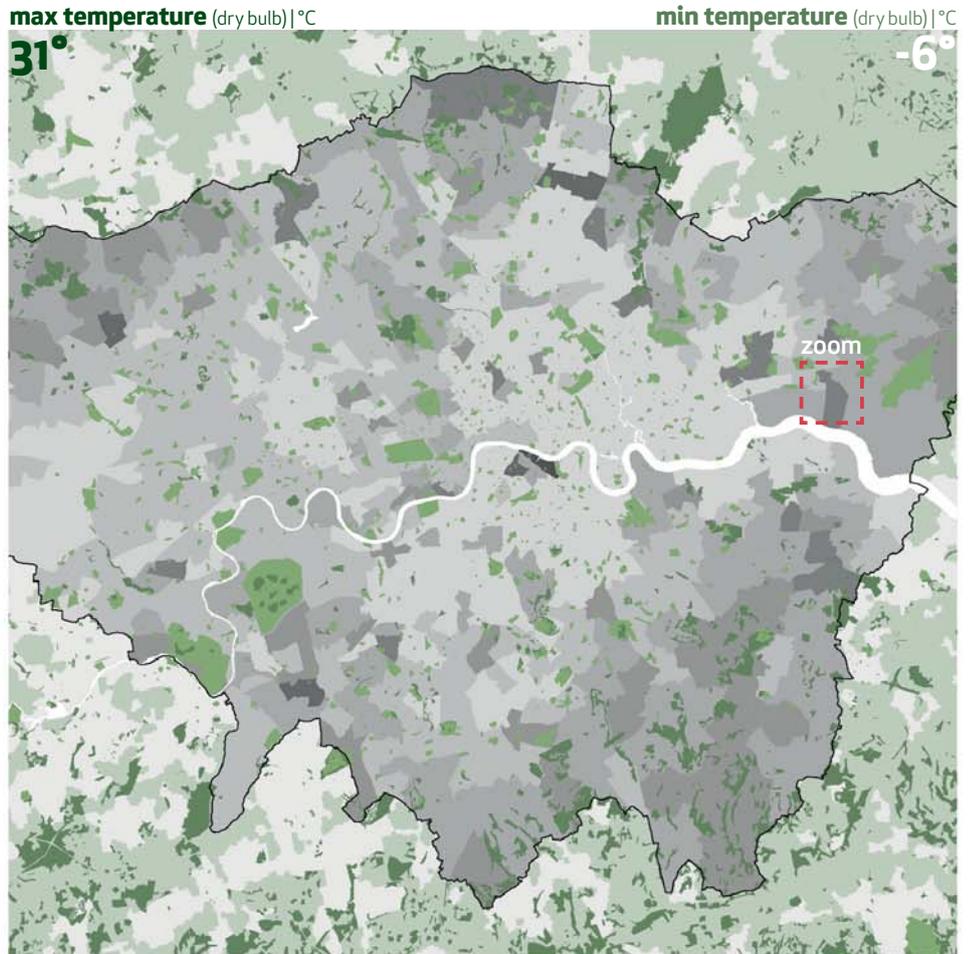
LONDON

DATA SOURCE
Energy Plus software

33° **-8°**
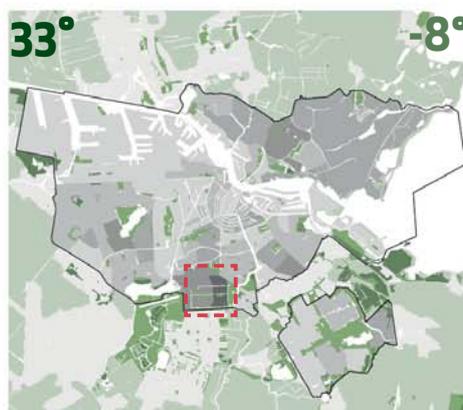
AMSTERDAM

DATA SOURCE
Energy Plus software

35° **-9°**
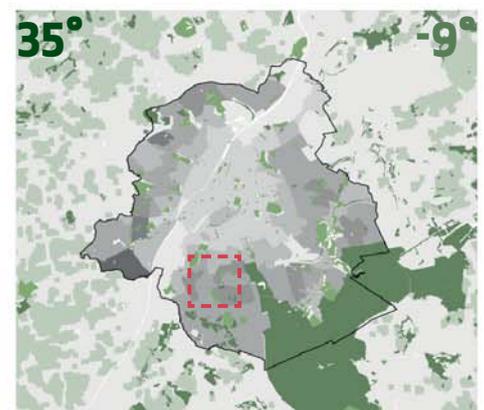
BRUSSELS

DATA SOURCE
Energy Plus software

27° **-10°**

COPENHAGEN

DATA SOURCE
Energy Plus software

24° **-4°**
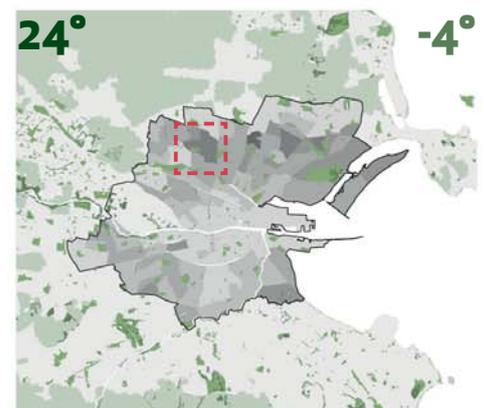
DUBLIN

DATA SOURCE
Energy Plus software

33°   -9°

BERLIN

257%

BY 2050, HEAT DEATHS WILL RISE 257% BECAUSE OF CLIMATE CHANGE. ELDERLY PEOPLE ARE MOST AT RISK.

2-8°

A GREEN AREA GIVE RISE TO 2-8° COOLER AIR TEMPERATURES AND A COOLING EFFECT THAT EXTENDS OUT IN THE SURROUNDING AREA.
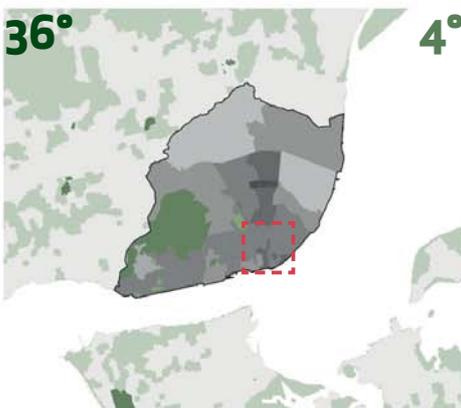
36°   4°

LISBON

36°   -1°

MADRID

33°   -11°

MILAN

30°   -6°

PARIS

% population 65+

0   10   15   20   25   30   35   %
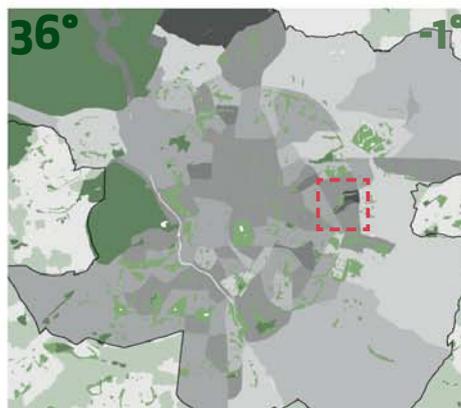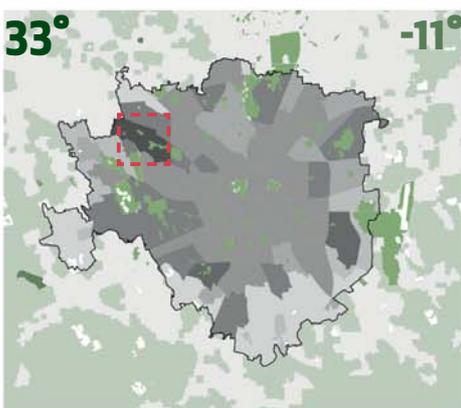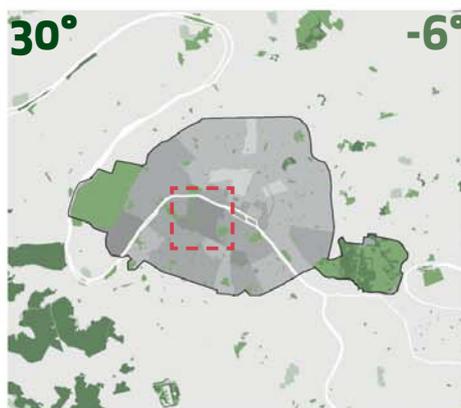
Built environment
umz
parks
forests
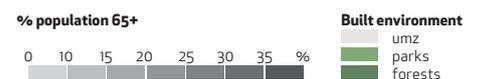
Ageing and mobility

Written by Systematica.

The urban road environment is a system with human presence on which the unprecedented phenomenon of population ageing is having and will have an effect. Ageing current trends' consequences on mobility will be diverse, ranging from the conceptual to the physical realm, and therefore affecting both mobility policies and street and transport design. Evaluating these consequences before their occurrence means developing a holistic view entailing on the one hand the understanding of existing and changing policy framework and, on the other hand, the analysis of older people's travel patterns as well as the study of the most crucial environment where said movements will occur: cities.

Mobility is a key-aspect of quality of life for older people. Age-related physical and cognitive impairment can restrict mobility, meaning that related structures and services should be planned and delivered bearing in mind that older people require supportive and enabling living environments to compensate for the physical and social changes associated with ageing.

An aeffective definition of age-friendly mobility would ensure the social inclusion of older people and its process-making should be based on the two following assumptions:

1. Making cities more age-friendly is a necessary and logical response to promote the well-being and social involvement of older urban residents, keeping cities thriving, and;
2. Active ageing is a lifelong process and an age-friendly city is not just "elderly-friendly": barrier-free buildings and streets enhance the mobility and independence of young as well as old.

Older people's mobility is characterised by some recurring features: older people travel less than younger people, considering all modes of travel; the main reason consists of retirement from formal work and the related absence of need to travel for work or for education; older people replace driving a private car by increasing walking or the use of public transport, but these options hardly ever appear to be able to fully satisfy mobility needs; walking speed reduces, and the likelihood of falling increases; the distance that can be walked comfortably becomes less, and the effort required becomes greater.

Although these general aspects and the fact that active rates and modal choice follow broadly similar patterns amongst older people, it cannot be stated that this social group is homogeneous; at the contrary, large differences exist due to gender, ethnicity, cultural norms, as well as individual's health and skills. In addition, a new level of heterogeneity is currently being introduced with these new age cohorts having grown used to very different lifestyles, characterised for example by a higher labour force participation, than earlier generations.

65+ subscription price reduction public transport
100%

congestion index %
34
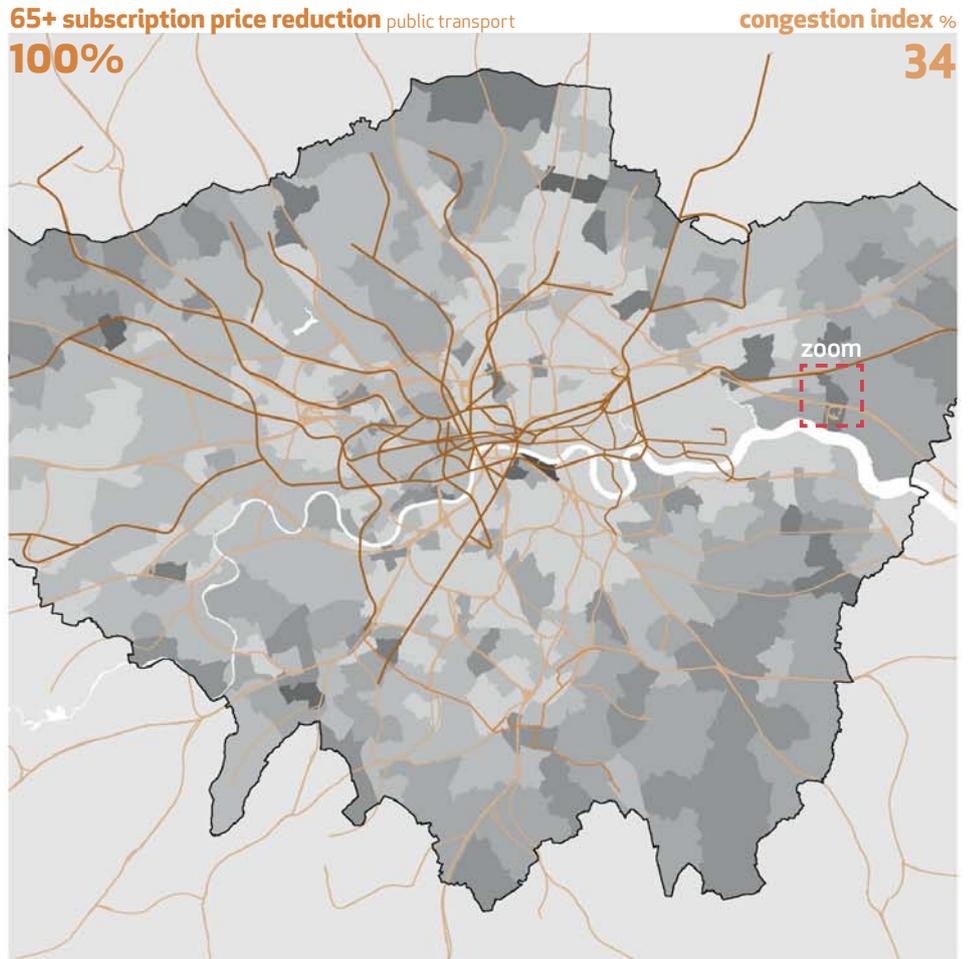
LONDON

SOURCE
OpenStreetMap - local transport agencies/Tom Tom Traffic Index

66% 19
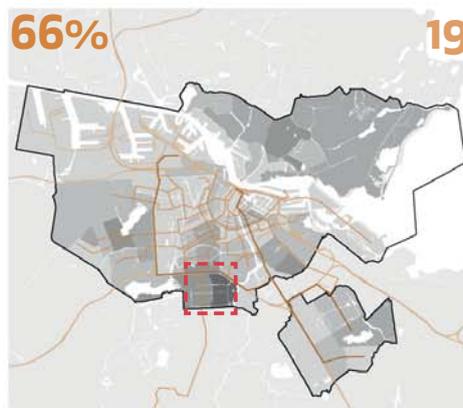
AMSTERDAM
DATA SOURCE:
OSM - Ita/Tom Tom Traffic Index

100% 34
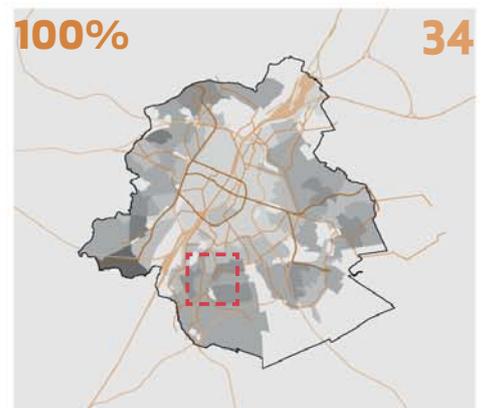
BRUSSELS
DATA SOURCE:
OSM - Ita/Tom Tom Traffic Index

0% 19
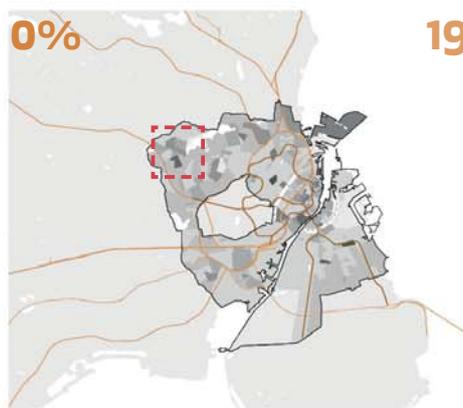
COPENHAGEN
DATA SOURCE:
OSM - Ita/Tom Tom Traffic Index

100% 35

DUBLIN
DATA SOURCE:
OSM - Ita/Tom Tom Traffic Index

42%   **27**

BERLIN

LESS

OLDER PEOPLE DRIVE LESS: THEY REPLACE DRIVING WITH WALKING AND PUBLIC TRANSPORT

FREE

LONDON AND DUBLIN OFFER PUBLIC TRANSPORT FREE YEARLY SUBSCRIPTIONS FOR 65+ PEOPLE
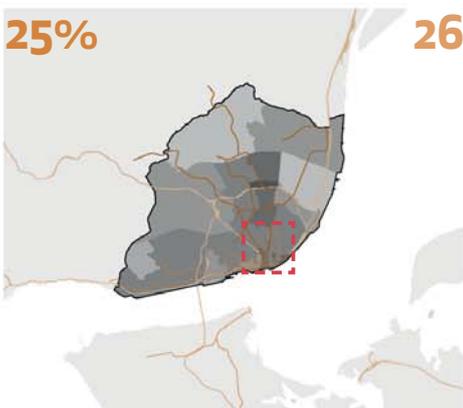
25%   **26**

LISBON

77%   **20**
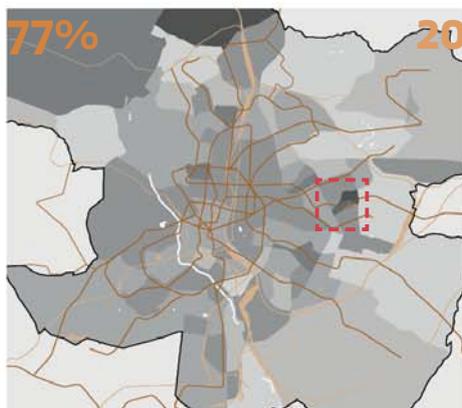
MADRID

There is a real change in older people's mobility experience, expectations and requirements and as technology adapts to the needs of people and improves, there will be new challenges and opportunities for ageing and mobility. Meanwhile interventions can be made to contribute to the improvement of older people's mobility, considering the variety of their lived experiences. Indeed interventions can be active or passive, requiring (or not) older population initiatives; top-down, with an authority taking responsibility and imposing a solution, or bottom-up, with individual citizens taking the lead. In all cases, they are always related to the main components of mobility: policy, to be intended as the soft component, and space, the hard component.
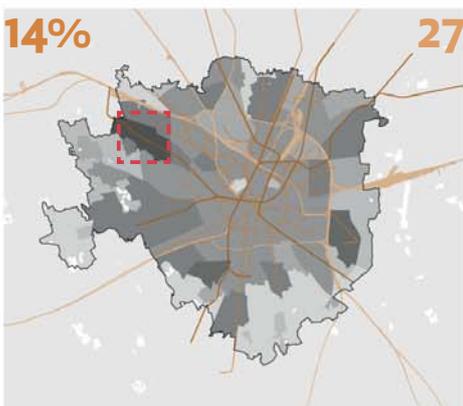
14%   **27**

MILAN

78%   **53**

PARIS

% population 65+

0 10 15 20 25 30 35 %

Mobility

underground line
tram line
railway line
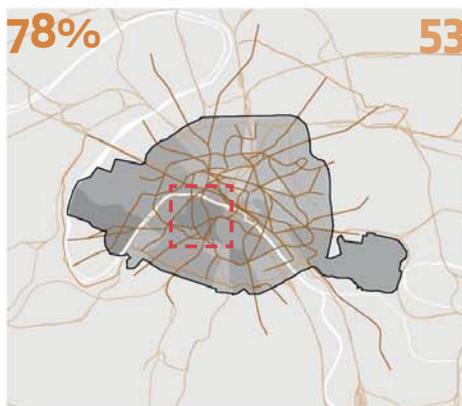
Ageing and digital environment

Written by Intel.

As described in the previous chapter, the WHO Age Friendly Cities program creates a useful framework for thinking about the opportunities and challenges of urban living for older people and for reflecting upon the role of established, emerging and future technologies, and the data they create, in often rapidly changing towns and cities. A general trend away from the provision of residential or institutional care for older people towards 'hybrid' models of public and private care and various solutions for long term independent living or 'ageing-in-place' has direct implications for how cities, communities and citizens of all ages have to think about the later part of the life course.

The concept 'Ageing-in-place' is often taken to refer to people being able to continue to live within the bricks and mortar of their own homes. Technology discussions in this field often focus on important issues such as, for example, how telecare systems allow for rapid reporting and response, how sensors might detect falls among older people living alone or identify temperature drops in the houses of those living in fuel poverty and substandard housing conditions. However, it is of equal importance that we think of 'place' more broadly in relation to the communities, neighbourhoods, spaces and networks in which we work, play and live. According to the Age UK Evidence Review in 2010, 7% of people aged 65+ in the United Kingdom always or often feel lonely and between 11% and 17% are socially isolated. There are literally millions of older people in European cities who rarely or never leave their homes for social, emotional, financial or mobility reasons.

When designing around 'ageing-in-place' we have to consider the routines, abilities, and practices of the older person and their relationship to their wider networks and communities of geography, interest and practice. A city may pride itself on the extent of its transport links and infrastructure, but 'kneeling' buses that arrive regularly every 15 minutes are still inaccessible for those unable to get to the bus stop or bring themselves to overcome fears of an unsafe street. Urban planners, service providers and technologists need to go further and creatively seek solutions about how they can help people, when needed, get door to door, arm-to-arm assistance to get to their destinations, navigate the high street or supermarket aisle or provide intelligent pedestrian crossings that allow adequate time to cross the road.

Advancements in emerging technologies, such as robotics, biotechnologies, artificial intelligence and machine learning techniques, could in the near future be utilised to improve the life and independence of older people in our cities. Autonomous vehicles that provide tailored and safe transport across and outside the city, therapeutic solutions that maximise impact at a personal level while reducing side

Wi-Fi public hotspots per sq. km

1*

Wi-Fi public hotspots per 100,000 inhab.

22*

zoom
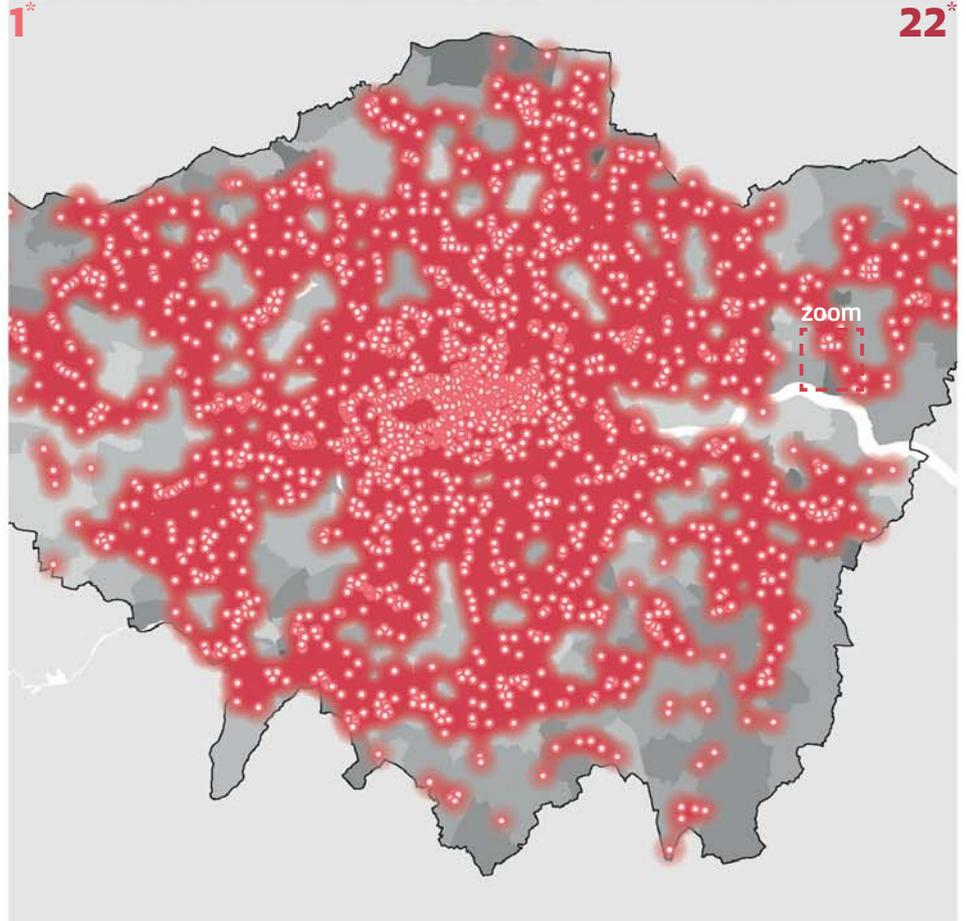
LONDON

DATA SOURCE
The Cloud | *indicative data

1 11
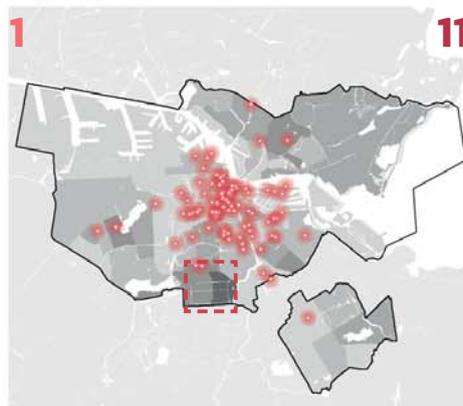
AMSTERDAM

DATA SOURCE
Amsterdam Smart City

1 9
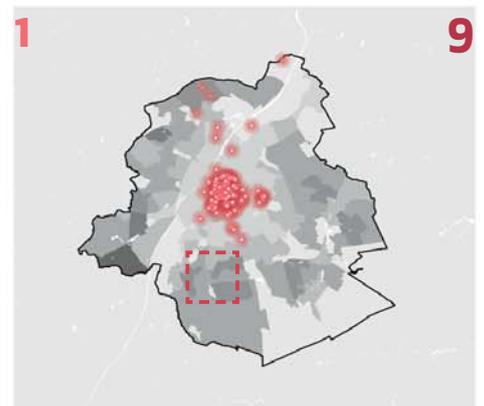
BRUSSELS

DATA SOURCE
City of Brussels Open Data

1 15
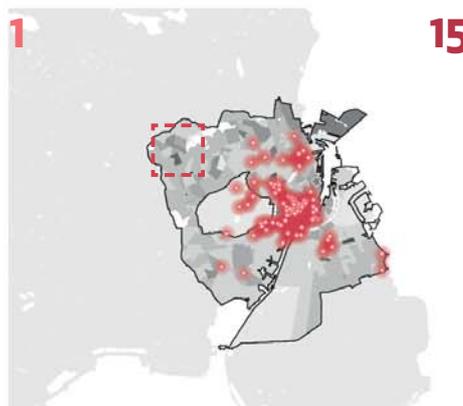
COPENHAGEN

DATA SOURCE
City of Copenhagen

0 4
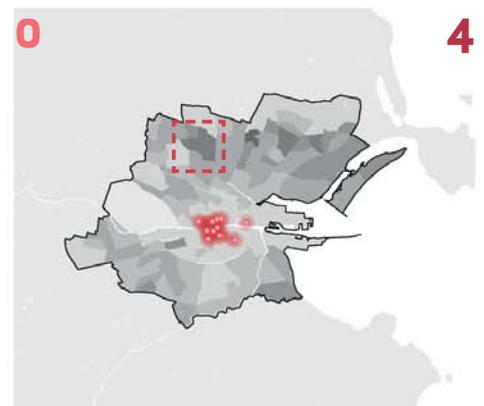
DUBLIN

DATA SOURCE
Dublin City Council

0 **11**
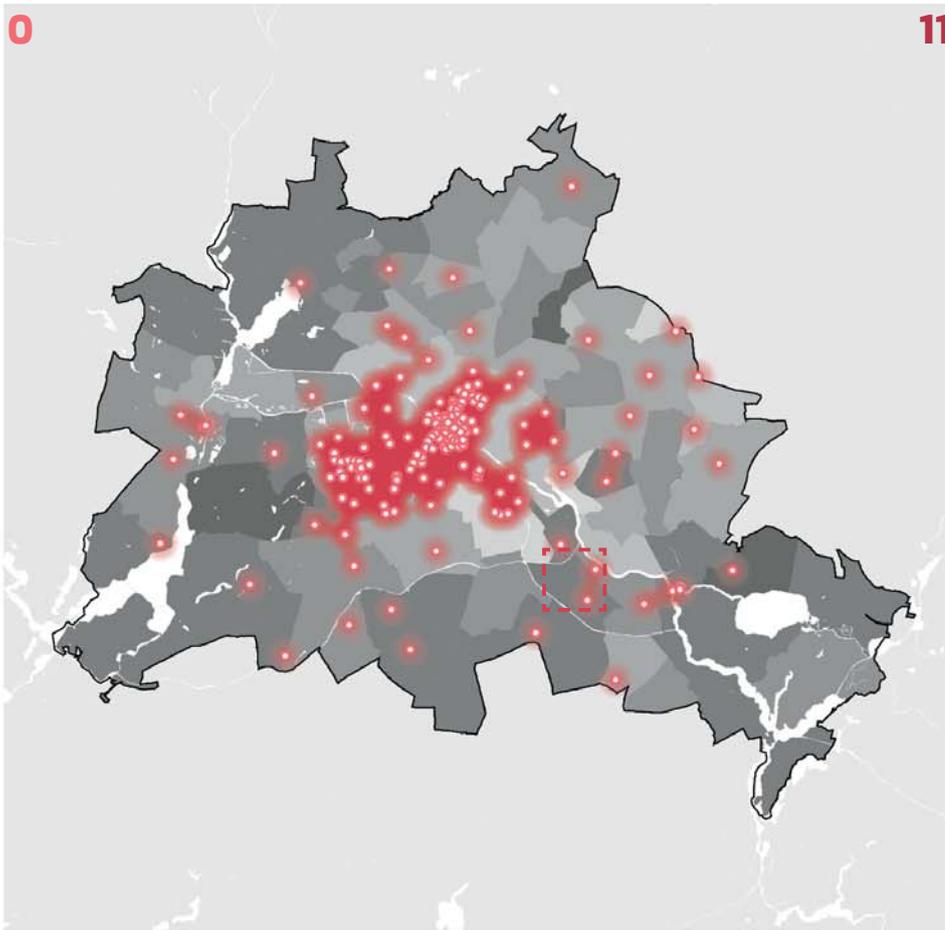
BERLIN

DATA SOURCE
Berlin Business Location Center

1 **12**

LISBON

DATA SOURCE
Free WiFi Cafe Spots

1 **10**

MADRID

DATA SOURCE
Gowex

3 **41**

MILAN

DATA SOURCE
Comune di Milano

3 **12**
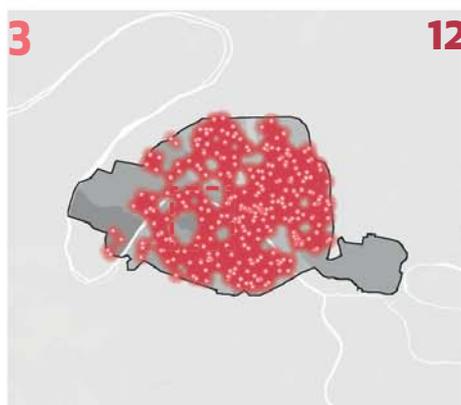
PARIS

DATA SOURCE
Mairie de Paris

7%

OF PEOPLE AGED 65+ IN THE UNITED KINGDOM ALWAYS OR OFTEN FEEL LONELY AND BETWEEN 11 AND 17% ARE SOCIALLY ISOLATED

SOURCE:
Green, M. and Rossall, P., 2013. Digital Inclusion Evidence Report.
AgeUK

70%

A SURVEY REVEALED THAT 70% OF PEOPLE OVER-65 NEVER USED THE INTERNET

SOURCE:
Green, M. and Rossall, P., 2013. Digital Inclusion Evidence Report.
AgeUK

effects, and mechanised home support that helps people with daily tasks or even contributes to forms of companionship, are all currently researched and tested for real life usage.

Emerging, disruptive and established technologies, however, have to be seen as one component, an 'ingredient', of much larger solutions that take into account older persons' skills, needs and desires, as well as the constraints under which care delivery systems increasingly operate. Future design needs to consider how to augment rather than replace existing social interaction and to empower rather than disempower at the levels of both personal and civic participation.

The combination of a well-informed environment and age-friendly digital solutions is the key to creating prosperous and smart urban environments. 'Old age' and 'technology' are very complex concepts that are sometimes used as simple categories. To design successful technologies for the later part of the life course and support independent living in the urban space, we have to be mindful of the nuances of daily life and focus on the contributions as well as needs of the older segments of our populations.

% population 65+

Digital environment

0 10 15 20 25 30 35 %

Wi-Fi hotspot
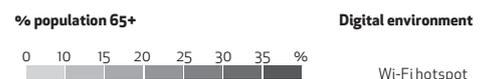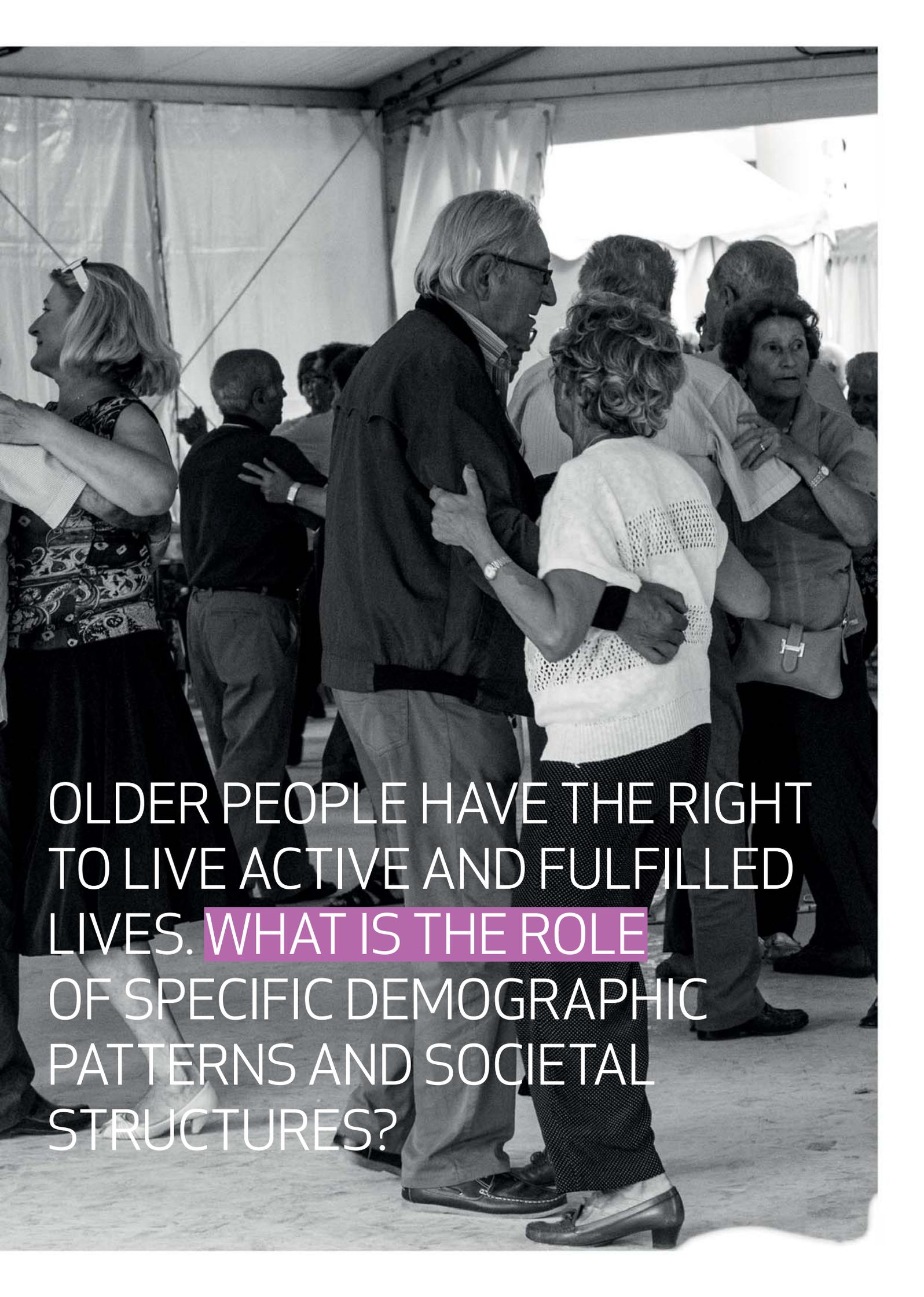
SOCIETY

OLDER PEOPLE HAVE THE RIGHT
TO LIVE ACTIVE AND FULFILLED
LIVES. WHAT IS THE ROLE
OF SPECIFIC DEMOGRAPHIC
PATTERNS AND SOCIETAL
STRUCTURES?

Demography

Written by Arup.

Europe overall is getting older, and its age pyramid shows declining birth rates and a dominance of growth due to immigration, despite life expectancy being generally high in all the countries. Healthy life expectancy, meaning the years enjoyed without specific health problems, is higher in northern countries, especially Denmark, United Kingdom and Belgium.

Berlin and Madrid mirror the European situation, with an average age that goes from 41 to 43 years old. The most striking age pyramids are two: Lisbon, which is almost overturned, and Milan which shows the result of a contained migratory movement for the 34-44 age group. London, along with Amsterdam, Copenhagen and Paris, are clearly attractive cities for young people. Dublin has the youngest median age, 33 years old, due to a combination of causes: the Irish emigration phenomenon (late 1980s), a more recent immigration (1990s) from foreign countries and the internal migration from other Irish towns, especially after the recession of 2009. It is worth noting that the oldest cities are located in countries where healthy life expectancy is shorter.

% population 65+ (2012)   **median age** (2011)

11%   ♀ ♂   **36**

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12
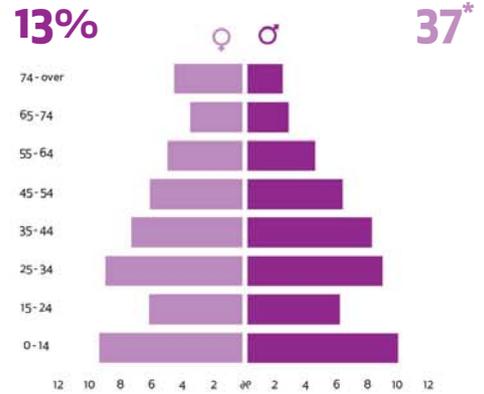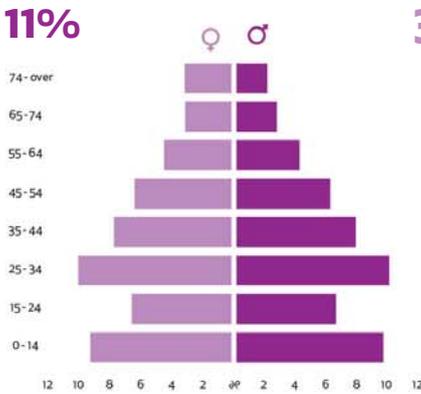
LONDON   DATA SOURCE Eurostat | *ONS, London Data Store

11%   ♀ ♂   **37***

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12

AMSTERDAM   DATA SOURCE Eurostat | OS Amsterdam *2014

13%   ♀ ♂   **37***

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12

BRUSSELS   DATA SOURCE Eurostat | BISA *2014
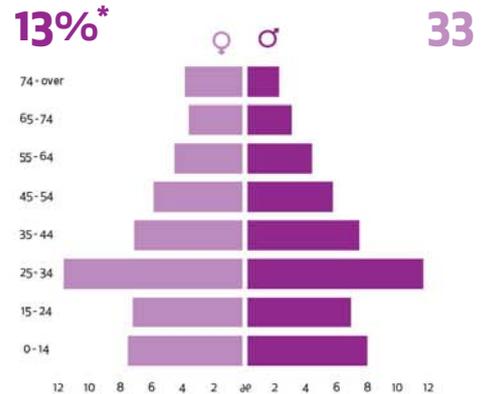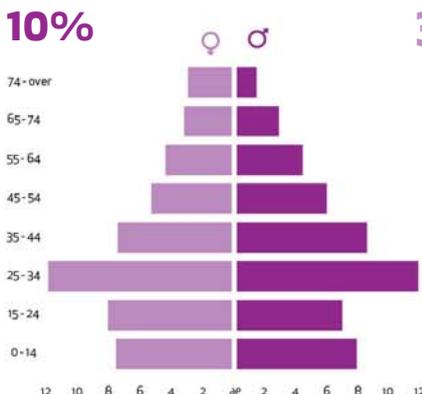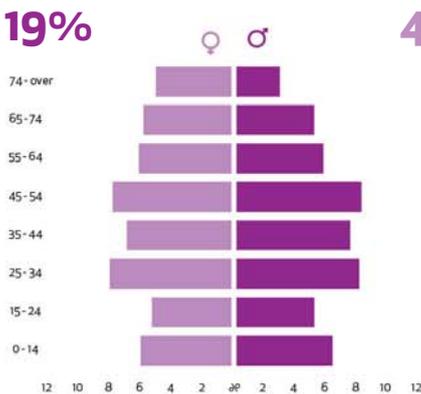
19%   ♀ ♂   **43***

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12

BERLIN   DATA SOURCE Eurostat | *data available 2012

10%   ♀ ♂   **36**

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12

COPENHAGEN   DATA SOURCE Eurostat

13%*   ♀ ♂   **33**

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 æ 2 4 6 8 10 12

DUBLIN   DATA SOURCE Eurostat | *data available 2011

♀ ♂

20   10   years   10   20

EU AVERAGE

UNITED KINGDOM

NETHERLANDS

BELGIUM

GERMANY

DENMARK

IRELAND

PORTUGAL

SPAIN

ITALY

FRANCE

life expectancy   healthy life   healthy life   life expectancy

LIFE EXPECTANCY OVER 65

DATA SOURCE
OECD (2012)
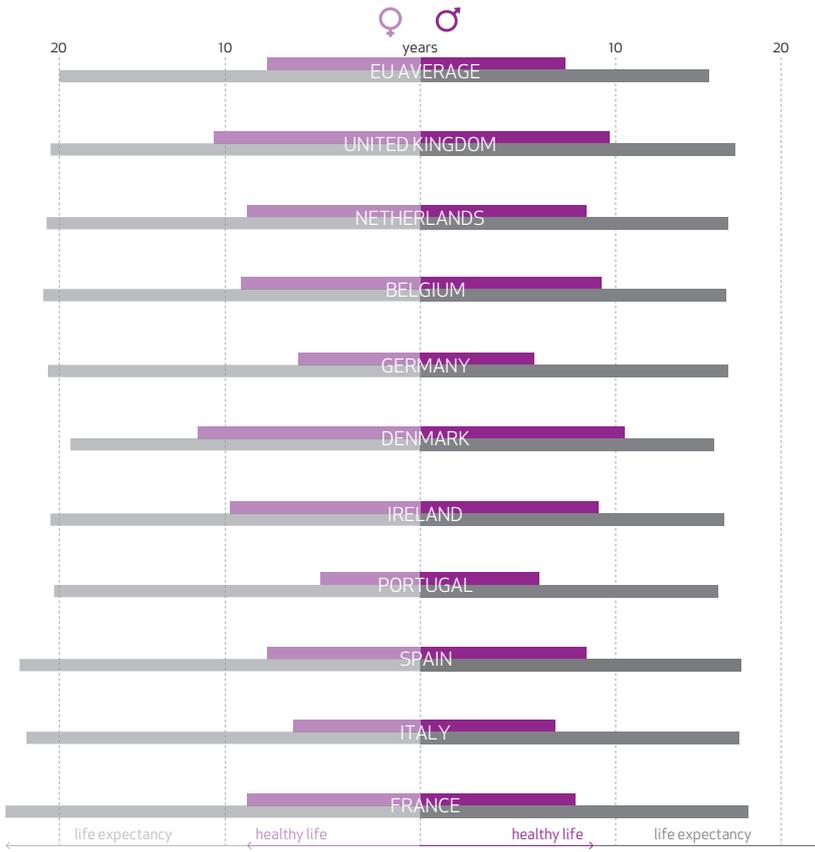
13
YEARS IS THE DIFFERENCE BETWEEN THE MEDIAN AGE OF DUBLIN AND LISBON.

♀**75+**

IN LISBON AND MILAN WOMEN 75+ IS ALREADY THE DOMINANT GROUP AMONG ALL THE AGE GROUPS.

27%   ♀ ♂   46

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12

LISBON   DATA SOURCE
Eurostat

19%   ♀ ♂   41

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12

MADRID   DATA SOURCE
Eurostat

♀ ♂   42

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12
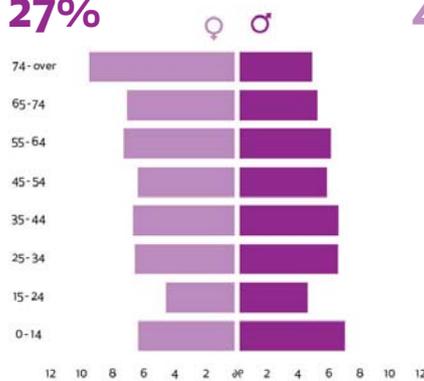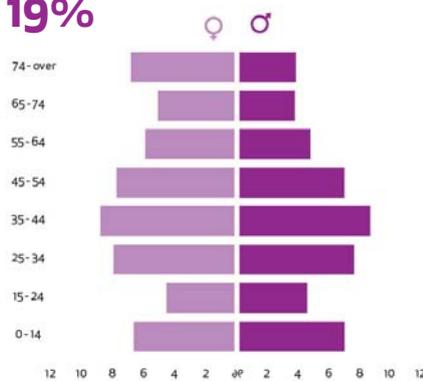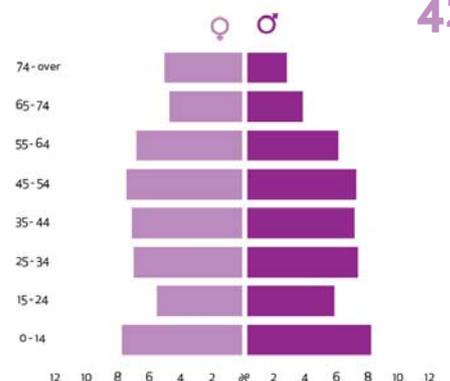
EUROPE   DATA SOURCE
UN | Eurostat

25%   ♀ ♂   45
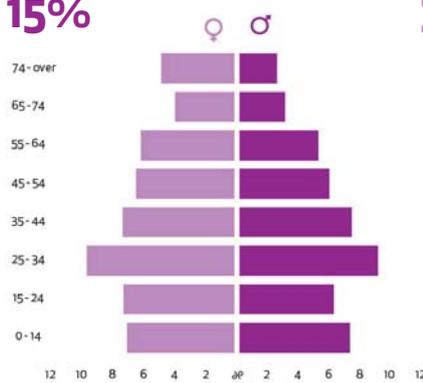
74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12

MILAN   DATA SOURCE
Eurostat | ISTAT

15%   ♀ ♂   37

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12

PARIS   DATA SOURCE
Eurostat

♀ ♂   28

74 - over
65 - 74
55 - 64
45 - 54
35 - 44
25 - 34
15 - 24
0 - 14

12 10 8 6 4 2 ♀♂ 2 4 6 8 10 12
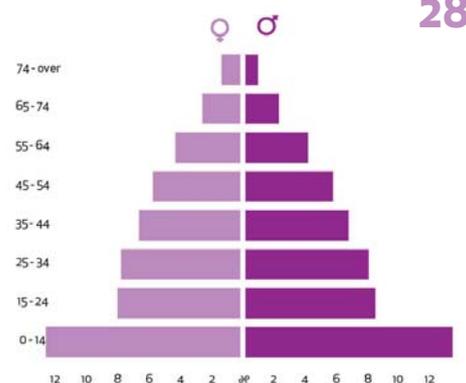
WORLD   DATA SOURCE
UN, World Population Prospects, 2012

Living conditions

Older people have the right to live active and fulfilled lives. To guarantee this right city governments have to deal with the economic living conditions of this age group, which means their level of participation in the labour market and their overall wealth. They also have to deal with national policies regarding social pensions. The old age dependency rate of each city –the percentage of over 65's compared to the more economically active population– defines the dimension of the issue to be tackled. As a value of reference, in Europe as a whole, there are 4 more economically active people for every person over 65 years old.

Lisbon, Milan, Madrid and Berlin have an old dependency ratio, which is higher than the European average. To look closer, for example Milan and Madrid have a low employment rate of people aged 55-64, 33% and 37% respectively. It means that individuals often leave the labour market before receiving a social pension. However, the net pension wealth is relatively high both in both Italy (10.2) and Spain (11.7) compared to a medium-high cost of living (consumer price plus rent index in the diagrams). It means a very low level of inclusion and participation in the labour market, leaving individuals depending mainly on national social pensions.

♀

| | 60 | 62 | 64 | 66 years old |
official retirement age

Country	average	official
UNITED KINGDOM	61	63
NETHERLANDS	62	65
BELGIUM	59	65
GERMANY	62	65
DENMARK	62	65
IRELAND	63	66
PORTUGAL	65	66
SPAIN	63	65
ITALY	60	62
FRANCE	60	65

average retirement age

♂

| | 60 | 62 | 64 | 66 years old |
official retirement age

Country	average	official
UNITED KINGDOM	64	65
NETHERLANDS	63	65
BELGIUM	60	65
GERMANY	62	65
DENMARK	63	65
IRELAND	65	66
PORTUGAL	65	68
SPAIN	62	65
ITALY	61	66
FRANCE	60	65

average retirement age

RETIREMENT AGE

DATA SOURCE
OECD (2007-2012)

employment rate 55-64[1] (2011)

net pension wealth (2012)

cost of living index (2014)

LONDON
49%   5.2   94

population aged 20-64 for every person aged 65+[4] 2012 : 6

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

AMSTERDAM
67%   13.1   67

6

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

BRUSSELS
35%   6.5   66

5

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

BERLIN
56%   7.3   52

3

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

COPENHAGEN
56%   9.4   80

7

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

DUBLIN
46%   7.4   71

5

DATA SOURCE
[1-4] Eurostat | [2] OECD | [3] Numbeo

	0	9%	18%

EU 28 COUNTRIES AVERAGE — 14

UNITED KINGDOM — 16.3

NETHERLANDS — 7

BELGIUM — 17.3

GERMANY — 16.9

DENMARK — 9.3

IRELAND — 12.1

PORTUGAL — 15.5

SPAIN — 18.3

ITALY — 15.2

FRANCE — 9

% 65+ AT RISK OF POVERTY

DATA SOURCE
Eurostat (2012)

18.3
IN 2012, ELDERLY PEOPLE AT RISK OF POVERTY IN SPAIN WERE 18.3%.

2
IN MILAN AND LISBON THERE ARE 2 PERSONS IN THEIR ACTIVE AGE EVERY OVER-65 YEARS OLD CITIZEN.

49%   **7.9**   **41**

2

LISBON   DATA SOURCE
¹⁻⁴Eurostat | ²OECD | ³Numbeo

37%   **11.7**   **51**

3

MADRID   DATA SOURCE
¹⁻⁴Eurostat | ²OECD | ³Numbeo

4

EUROPE   DATA SOURCE
¹⁻⁴Eurostat | ²OECD | ³Numbeo

33%*   **10.2**   **64**

2

MILAN   DATA SOURCE
¹Istat (Province) | ²OECD | ³Numbeo | ⁴Eurostat

61%   **9.1**   **78**

4

PARIS   DATA SOURCE
¹⁻⁴Eurostat | ²OECD | ³Numbeo

7

WORLD   DATA SOURCE
UN, World Population Prospects, 2012

BUILT ENVIRONMENT

THE URBAN GRAIN IS THE FIRST ELEMENT TO DESCRIBE THE BUILT ENVIRONMENT. HOW DOES IT HAVE AN INFLUENCE ON THE LIVES OF OLDER PEOPLE?

Aged neighborhoods

At the urban scale, the framework of routes, green spaces and other elements of connectivity is a relational grain that defines the liaisons among open spaces and developments. The grain highlights the morphology of the city: patterns of streets, settlements, layout of building blocks and development plots, dimensions and densities of these elements and their frequency, etc. Definitely, the urban grain is the first element to define urban forms of the built environment.

The selected areas – represented in maps of 2 sq. km – are where ageing population concentrates in order to analyse their urban grain. Except for Alfama in Lisbon and the 7e Arrondissement in Paris, all the other areas are suburban neighbourhoods, with mainly residential functions. Often they are alongside extended green areas, such as in Dagenham (London), or they have a high density of smaller green areas, Uccle (Brussels) is an example. Travel distances, the availability of green spaces, the general level of connectivity, streets, building and public spaces typologies, and the urban grain all influence the lives of older people in their neighbourhoods.

quality of living index
world city's ranking position[1]

unsafety perception
in city's neighbourhoods[2]

40th · 9%

LONDON | DAGENHAM

11th · 6%

AMSTERDAM | BUITENVELDERT

14th · 4%

BERLIN | JOANNISTHAL

9th · 3%

COPENHAGEN | HUSUM

% population 65+

0 10 15 20 25 30 35 %
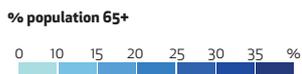
DATA SOURCE
[1]Mercer, 2015
[2]Eurostat, 2015
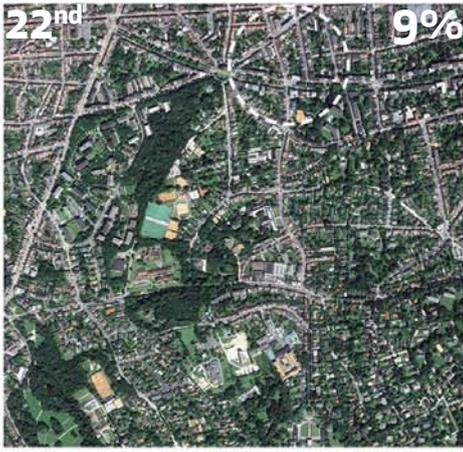
22nd   9%

BRUSSELS | UCCLE

41st   7%

LISBON | ALFAMA

51st   10%

MADRID | HELLÍN

34th   5%

DUBLIN | GLASNEVIN

41st   nd

MILAN | GALLARATESE

27th   9%
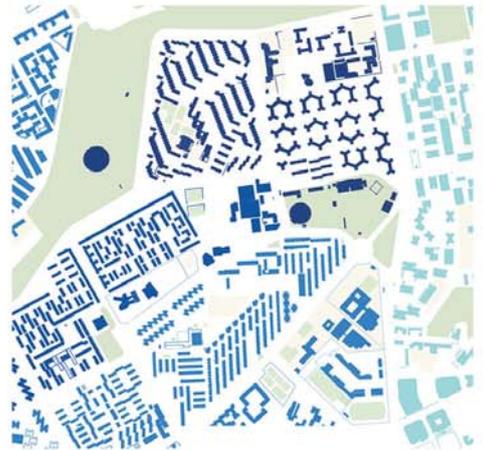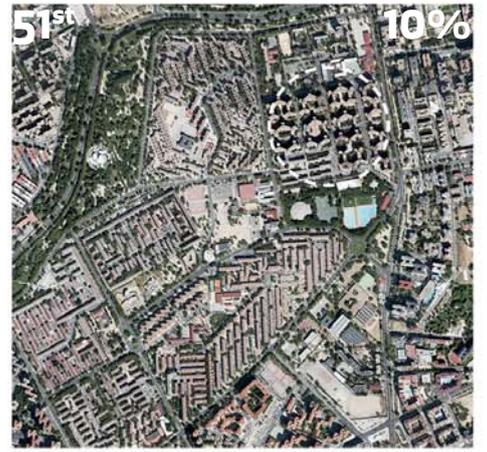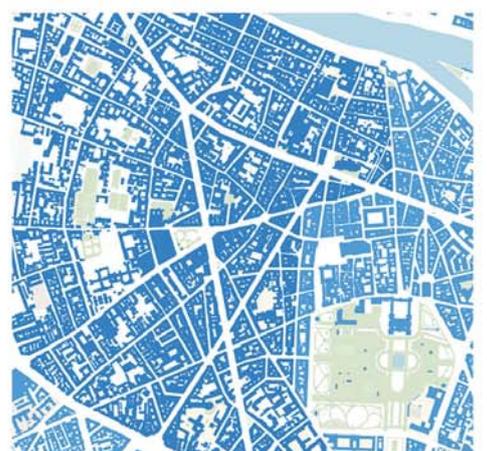
PARIS | 7e ARRONDISSEMENT

Aged housing types

Housing blocks are fundamental basic units of the urban grain. Their massing, volume, heights and arrangement – is an element of understanding of the relationships that the housing blocks establish with the surrounding city; for example they influence the daily paths that people take when crossing the threshold of their homes, or the availability and typologies of green areas they have (e.g. public, semi-public, private). Similarly, the facades define street fronts and contribute to street life. In-door life is affected by the shape of housing blocks.

The cases studied refer mainly to 4 typologies. Alfama (Lisbon) is the historic city, with narrow but lively streets. Uccle and 7e Arrondissement (Paris) have the shape of courtyards, Uccle being more green the 7e Ar. being denser. Buitenveldert (Amsterdam), Joannisthal (Berlin) and Dagehnham (London) are 2-4 floor linear buildings, immersed in green areas but often with inactive street fronts. Finally, Hellin (Madrid) and Gallaratese (Milan) are typified by high-rise building blocks -often towers- and the street front, when legible, is inactive.

Housing typology design changes considerably in-door and out-door daily life for older people. The accessibility of buildings, their flexibility to change over the years, the open spaces that they design and the relation that they configure with the street can facilitate or impede older people's lives.

terraced houses | **5/10x10 m**
building type | building size

building height | 2-3 floors
open spaces | private green spaces
street front | inactive

LONDON | DAGENHAM

medium-rise blocks | **70x10 m**
building type | building size

building height | 4 floors
open spaces | semi-public green spaces
street front | 20% commercial

AMSTERDAM | BUITENVELDERT

medium-rise blocks | **90x10 m**
building type | building size

building height | 4 floors
open spaces | private green spaces
street front | inactive

BERLIN | JOANNISTHAL

low-rise blocks | **70x20 m**
building type | building size

building height | 2 floors
open spaces | semi-public green spaces
street front | 5% commercial

COPENHAGEN | HUSUM

courtyards
building type

20x10 m
building size

building height | 3 to 8 floors
open spaces | private green spaces
street front | 50% commercial

BRUSSELS | UCCLE

historic settlement
building type

5/10x10 m
building size

building height | 3-4 floors
open spaces | narrow streets
street front | 10% commercial

LISBON | ALFAMA

high-rise blocks
building type

80x65 m
building size
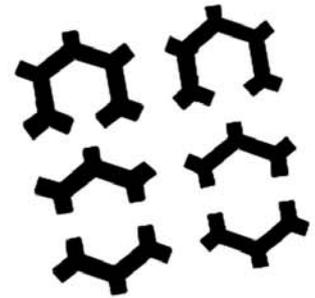
building height | 11 floors
open spaces | semi-public squares
street front | inactive

MADRID | HELLÍN

terraced houses
building type

35x10 m
building size
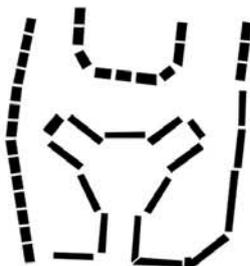
building height | 2 floors
open spaces | private green spaces
street front | inactive

DUBLIN | GLASNEVIN

high-rise and tower blocks
building type

100x10 m/20x20 m
building size
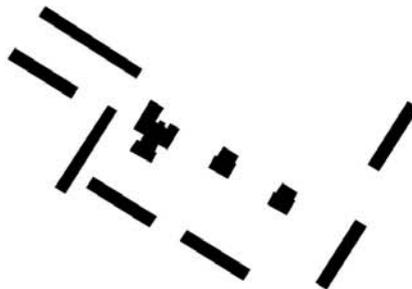
building height | 8 to 15 floors
open spaces | private green spaces
street front | inactive

MILAN | GALLARATESE

high-rise urban blocks
building type

15x10 m
building size
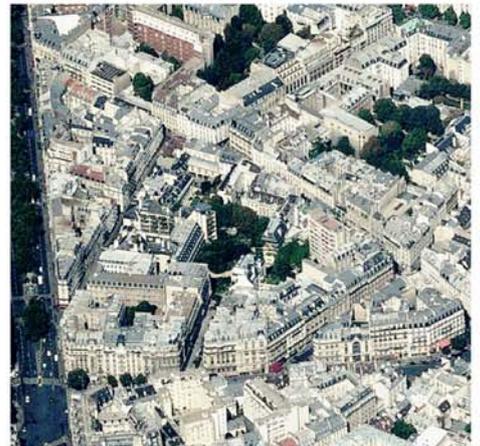
building height | 4-5 floors
open spaces | private courtyards
street front | 90% commercial

PARIS | 7e ARRONDISSEMENT

MOBILITY

MOBILITY IS A KEY ASPECT
OF THE QUALITY OF LIFE OF
OLDER PEOPLE. HOW CAN AN
AGE FRIENDLY DEFINITION OF
MOBILITY ENSURE SOCIAL
INCLUSION OF OLDER PEOPLE?

Modes of transport

Written by Systematica.

The charts below represent the modal share of all the ten cities analysed. Modal share is one of the fundamental aspects of mobility analyses, useful for understanding how trips are distributed among the available modes of transport.

For this research five main categories of modes were individuated:

1. Public Transport;
2. Private Cars;
3. Bicycle;
4. On foot;
5. Other modes.

The results show that Dublin and London are the cities where public transport is the most popular mode of transport, whereas Copenhagen and Amsterdam are the most cycle-friendly cities. Paris is the only city where more than the half of trips occur on foot, while Lisbon, Brussels and Madrid are the cities where cars are the most used mode. When interpolated with the over 65 population data, public transport and walking resulted to be the most used transportation mode, with respectively 44% and 27% of the total modal share, confirming hence some past and recent studies stating how older people tend to replace car driving by preferring the use of public transport and walking.

The Time/Distance chart aims at illustrating the overall walkability patterns of older people in comparison with average urban population, and clearly indicates both potentials and constraints of walking as a preferred mobility mode to access transport points and other urban functions.

The research looks at average pedestrian speeds and the appropriate walking time and distance for different age categories, based on UK guidance and studies (specifically the Department of Transports research paper on the mobility of older people), clearly illustrating the reduced average walking distance deemed reasonable for older people.

From mobility and transport planning perspectives, this illustrates an important aspect to consider when designing public transport systems; and ensuring they are suitable and accessible for all user categories, with proper stations/stops distribution and resulting densities, also in relation to the location of main urban functions relevant categoriesdestinations and facilities relevant to older people (parks, local services, hospitals, health-care centres and other public functions in general).
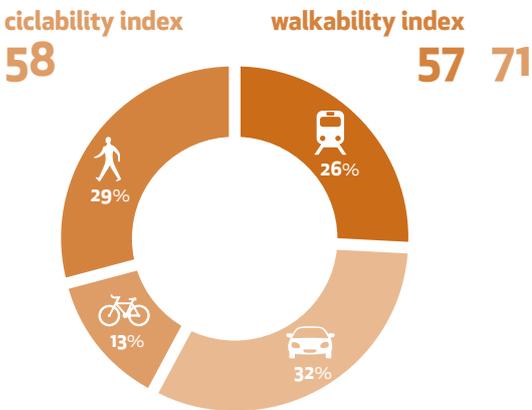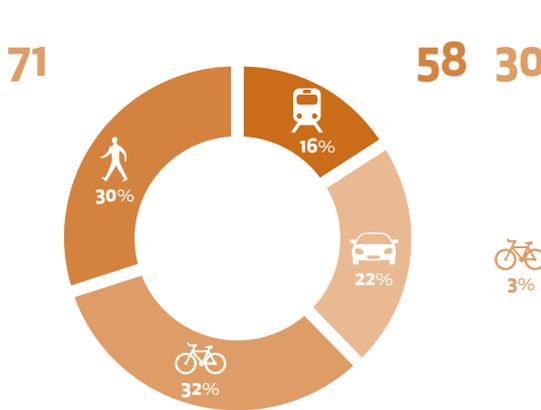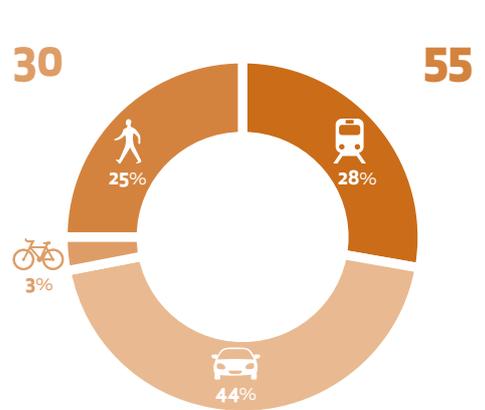
2.0 km/h

3.0 km/h

4.8 km/h

WALKING SPEED

DATA SOURCE
Systematica

ciclability index
58

walkability index
57

BERLIN

DATA SOURCE
Systematica

Public transport 26%
Private cars 32%
Bicycle 13%
On foot 29%

71

58

AMSTERDAM

DATA SOURCE
Systematica

Public transport 16%
Private cars 22%
Bicycle 32%
On foot 30%

30

55

BRUSSELS

DATA SOURCE
Systematica

Public transport 28%
Private cars 44%
Bicycle 3%
On foot 25%

54

53

LONDON

DATA SOURCE
Systematica

Public transport 44%
Private cars 33%
Bicycle 2%
On foot 21%

60

37

COPENHAGEN

DATA SOURCE
Systematica

Public transport 28%
Private cars 29%
Bicycle 36%
On foot 7%

42

40
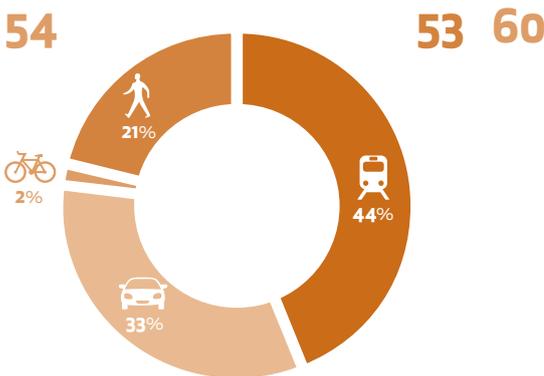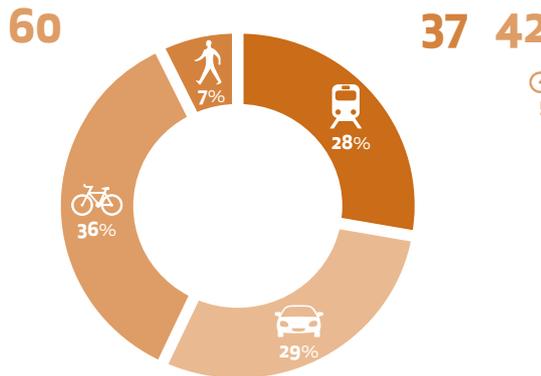
DUBLIN

DATA SOURCE
Systematica

Public transport 48%
Private cars 36%
Bicycle 5%
On foot 9%
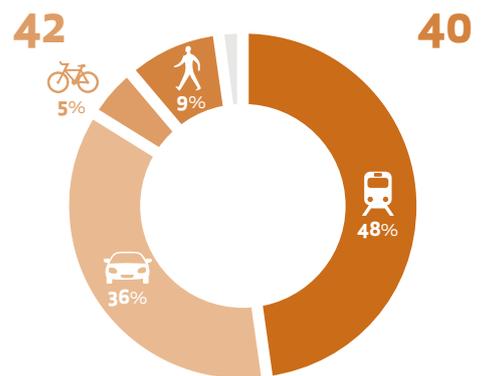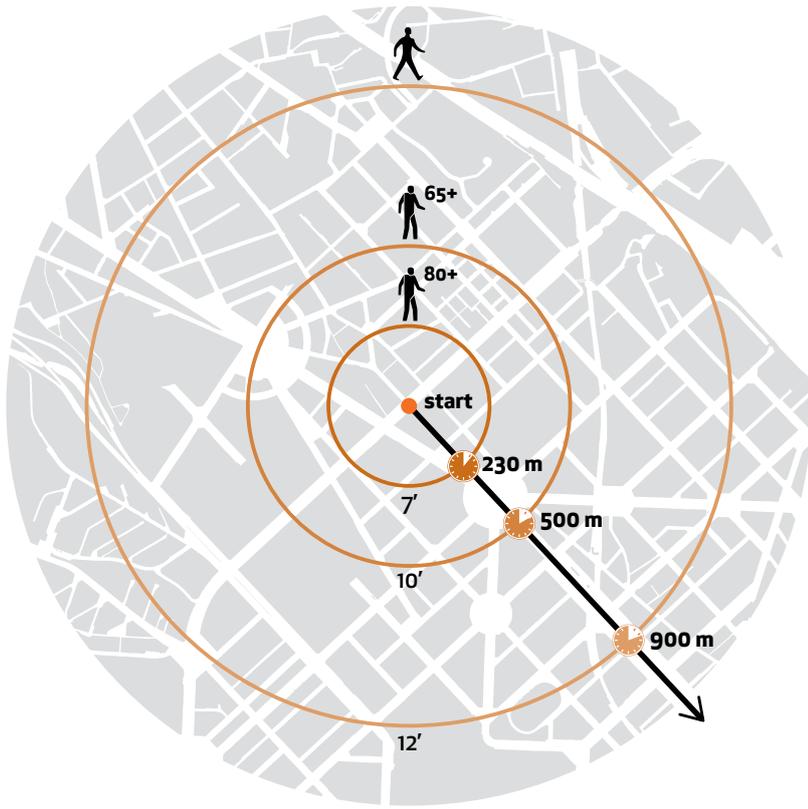
3 KM/H
IS THE AVERAGE WALKING SPEED OF 65+ PEOPLE (ALL AVERAGE WALKING SPEED IS 4.8 KM/H).

44%
OF DAILY TRIPS DONE BY 65+ PEOPLE OCCUR BY PUBLIC TRANSPORT

start
230 m
7'
500 m
10'
900 m
12'

WALKING TIME AND DISTANCE

DATA SOURCE
Systematica
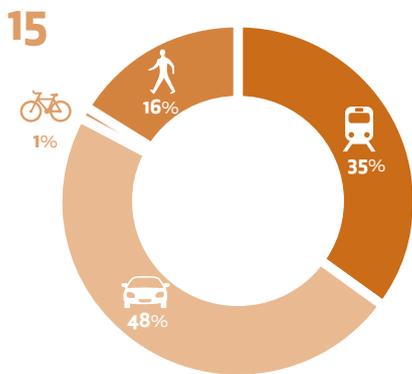
15   **49**
1%
16%
35%
48%

LISBON
DATA SOURCE
Systematica

40   **58**
30%
1%
32%
37%

MADRID
DATA SOURCE
Systematica

58
23%
6%
38%
33%
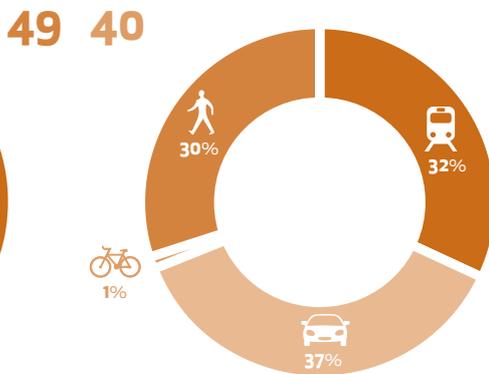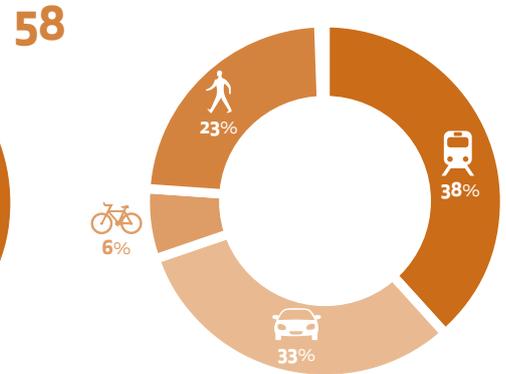
10 CITIES
DATA SOURCE
Systematica

44   **50**
17%
6%
41%
30%

MILAN
DATA SOURCE
Systematica

58   **66**
53%
32%
10%
2%

PARIS
DATA SOURCE
Systematica

65+
27%
4%
44%
25%
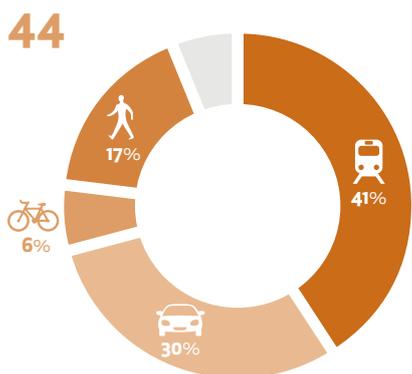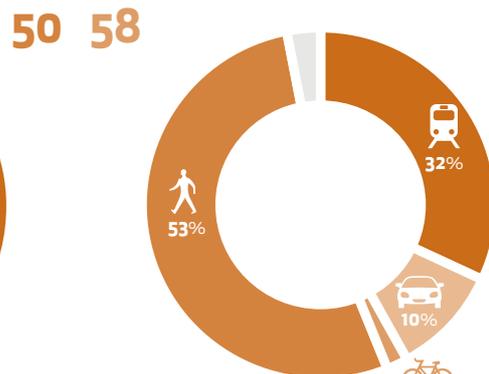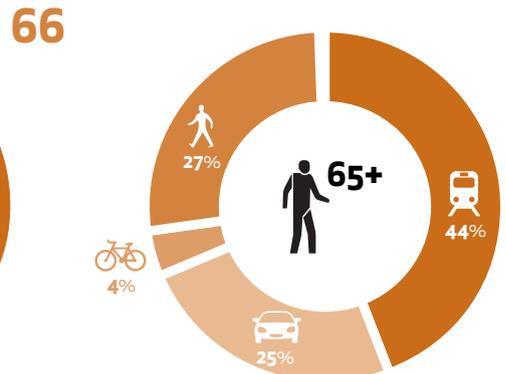
OVER 65
DATA SOURCE
Systematica

Accessibility

The proposed set of maps illustrates, for each selected urban district, information regarding accessibility and mobility at the local level: the structure of the road grid, its density and the isochronal accessibility provided by public transport stops across the urban space.

The level of integration of the road network and an adequate density and permeability of public transport facilities ensure a reduction of walking distances and thus greater accessibility for all categories of older people. In urban districts with higher densities of older residents, the urban environment has to be age-friendly, safe, free from physical obstructions; roads need to be well-designed, regular, well equipped with specific physical structures as islands, and tailored traffic signals, to ensure safe pedestrian crossings.

The design and the location of stops represent key factors influencing accessibility and active ageing. Distance and distribution, in relation to specific key points of interests (healthcare centers, community and recreational centres, shops, hospitals, public offices, etc.), shelters, benches, and clear real-time information systems represent just a few elements to consider to enhance the attractiveness of public transport services with regard to an ageing population.

bus stops density
number in the map

tube stops density
number in the map

76   2

40   4

LONDON | DAGENHAM

AMSTERDAM | BUITENVELDERT

41   0

60   1
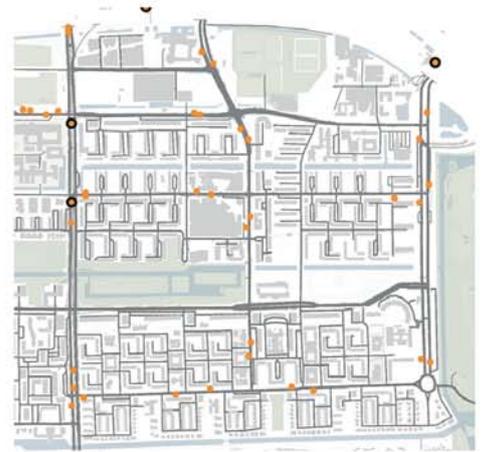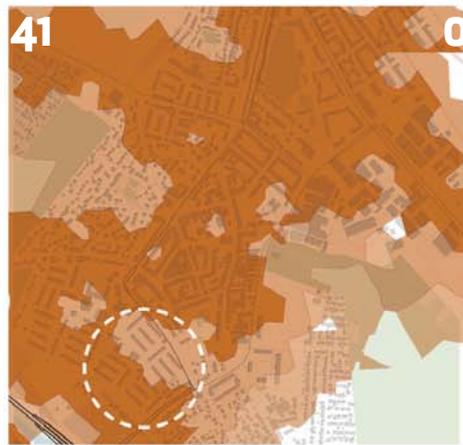
BERLIN | JOANNISTHAL

COPENHAGEN | HUSUM

Isochrone maps
Areas accessible on foot within:
- 4 minutes
- 8 minutes
- 12 minutes

Public transport stops
- Underground & rail
- Other PT
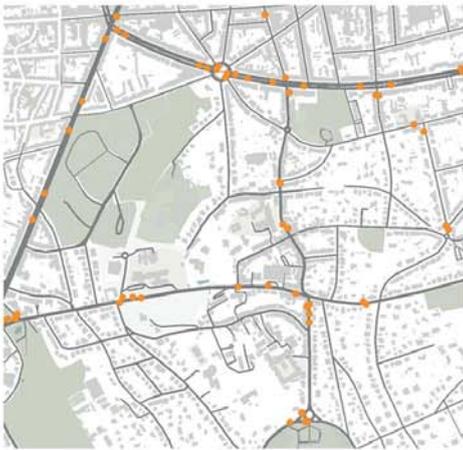
70   0

BRUSSELS | UCCLE

84   8

LISBON | ALFAMA

69   4

MADRID | HELLIN

84   0

DUBLIN | GLASNEVIN

78   3

MILAN | GALLARATESE

98   22
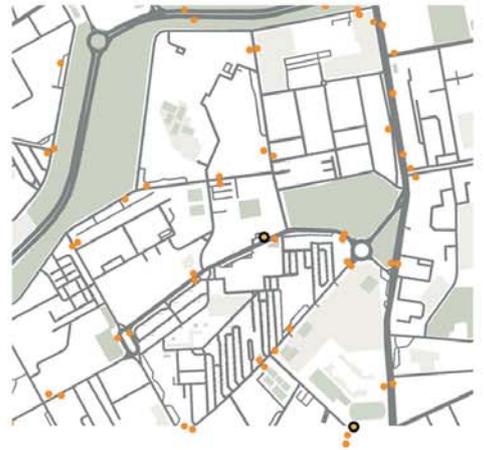
PARIS | 7e ARRONDISSEMENT

TECHNOLOGY

CAN WE INCREASE SOCIAL INCLUSION FOR OLDER AND RETIRED MEMBERS OF THE COMMUNITY THROUGH CITIES' DIGITAL ENVIRONMENTS?

Ageing, internet and smartphones

Written by Intel.

Smartphone usage and access to high-speed internet has generated new opportunities for civic participation, employment, and pathways to information and social engagement. Older and retired members of the community can engage actively in service and content utilisation, creation and production, delivering a wide range of peer-to-peer and inter-generational support. Increasingly, basic public services are accessed and managed through digital means, with great benefits in terms of personalization.

Connected health data can support the tailoring of interventions that more precisely meet the needs of an individual. Technology can support the delivery of care at the point of the patient rather than the professional, and enable health care provision that includes many different stakeholders from professionals, formal and informal caregivers, family members to volunteers and the wider community by enhancing communication and coordination.

Many services currently go underutilized, as there is a lack of awareness about their existence. Digital technologies can help identify these and improve the possibility and ease of uptake. However, it is vital to also recognize that digital exclusion does exist and access to community support services can be in jeopardy without appropriate digital skills or support.

65-74 who are regular internet user **38%**
2005-2014
EU AVERAGE
53% 65-74 who have never used the internet

UNITED KINGDOM

NETHERLANDS

BELGIUM

GERMANY

DENMARK **12%** — **76%**

IRELAND

PORTUGAL

SPAIN

ITALY **19%** — **75%**

FRANCE
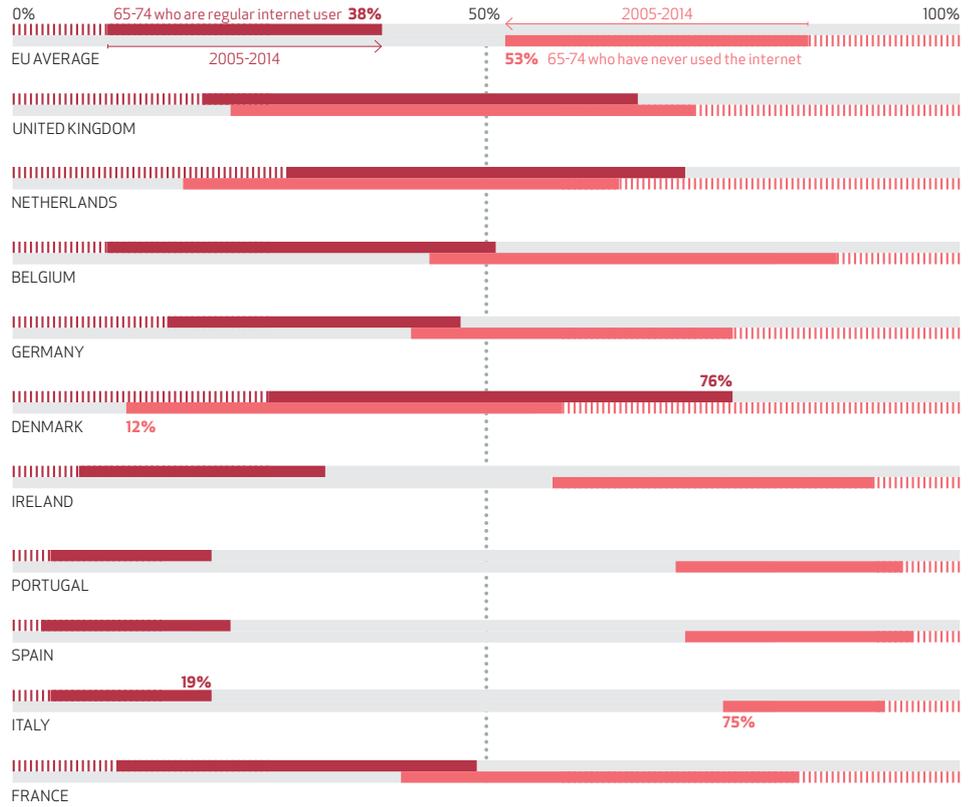
INTERNET PENETRATION 65-74

DATA SOURCE
EU, Digital Agenda for Europe, 2005-2014
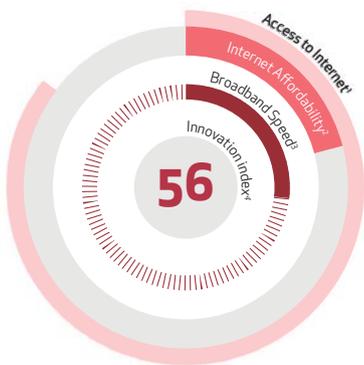
LONDON   56

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

Access to Internet[1]
Internet Affordability[2]
Broadband Speed[3]
Innovation Index[4]

AMSTERDAM   55

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

BRUSSELS   50

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

BERLIN   54

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

COPENHAGEN   55

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

DUBLIN   45

DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

75%   55+ men who own a smartphone **36%** ♂   50%   75%

♀ **25%** 55+ women who own a smartphone

UNITED KINGDOM

NETHERLANDS

BELGIUM

GERMANY

DENMARK

IRELAND

PORTUGAL

SPAIN

ITALY

55+
ALL

FRANCE

SMARTPHONE PENETRATION OVER 55
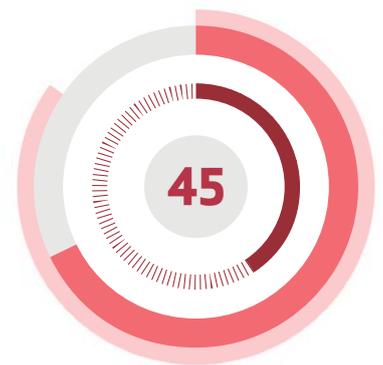
DATA SOURCE
Our Mobile Planet Smartphone Research, 2013
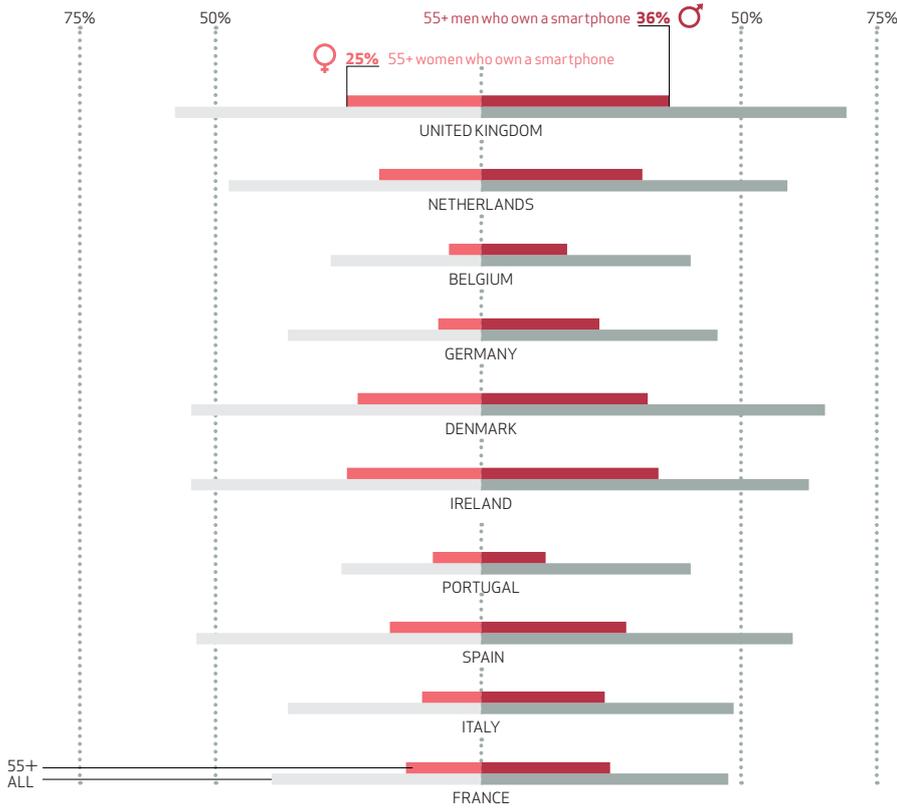
75%

IN ITALY, 75% OF THE POPULATION AGED 65-74 HAVE NEVER USED THE INTERNET

76%

IN DENMARK, 76% OF THE POPULATION AGED 65-74 USE THE INTERNET AT LEAST ONCE A WEEK

44

46
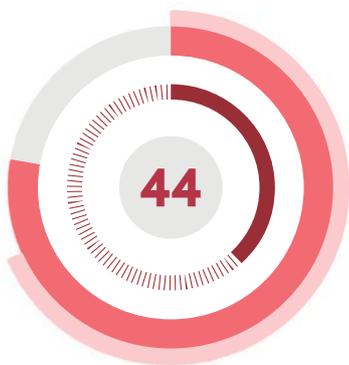
LISBON   DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

MADRID   DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

48

56
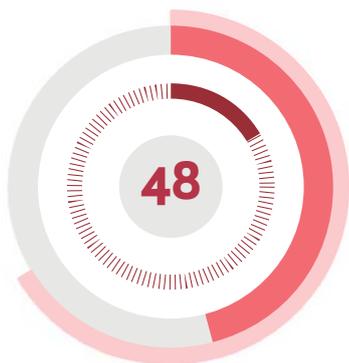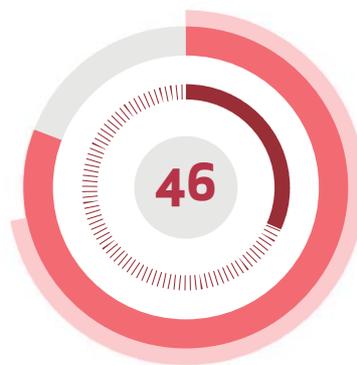
MILAN   DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

PARIS   DATA SOURCE
[1]EU | [2]WEF | [3]OOKLA | [4]2thinknow

Ageing and social networks

Written by Arup.

Social media, such as e-mails, social networking sites and videoconferencing, can be a matter of inclusion or exclusion for older people. It is undeniable that the rapid diffusion of social media in the last years has created a digital divide between generations. Nowadays, a consistent part of our social reality occurs on-line, through social media. Digital literacy is indispensable in order not to suffer from digital exclusion, especially in urban areas, where often social media represents a quicker connection to urban social life. For older people, the effort needed to have the know-how to be involved in such activities is consistently higher than younger people. However, it is also true that overcoming that obstacle could be revolutionary in the life of older people in cities.

There are primarily two ways, in which social media could be beneficial for older people in an urban environment. Firstly, it can help combat the loneliness and isolation that many older people experience. They have the potential to help them stay in contact with their relatives, friends and in general with people that share their interests. The social networks and interactions lost once retired are difficult to re-build through occasional encounters, especially if reduced physical functioning affects the ability to leave home. The structure of on-line social networks allows a more flexible and less demanding social interaction work.

A second interesting factor is the impact that on-line interaction activities could have on real life encounters. In an urban environment, where distances between people are closer, online encounters could increase the opportunities of real social interactions. In fact, on the one hand, social media can keep their users up-dated with the social and cultural events that the city offers. On the other hand, they can facilitate a process of organization of out-door activities; encouraging physical activities.

The level of social media use by older people is a potentially important indicator to monitor the current situation and to generate ad hoc services to fill the gaps. Unfortunately, now, it is not easy to find publicly owned data that illustrates this issue. The maps in the following pages show the usage of twitter in cities, according to the number of tweets posted.
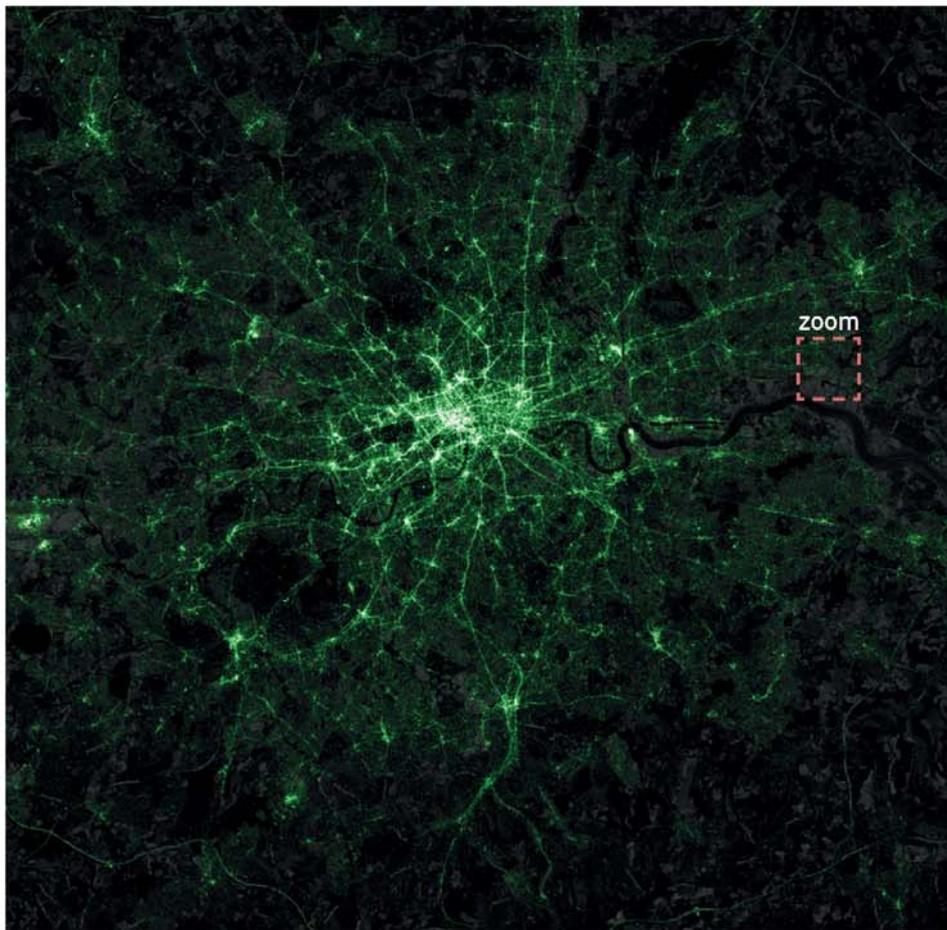
LONDON

SOURCE
© Mapbox © OpenStreetMap
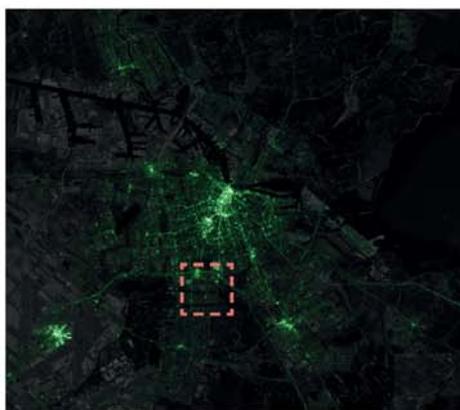
AMSTERDAM

SOURCE
© Mapbox © OpenStreetMap

BRUSSELS

SOURCE
© Mapbox © OpenStreetMap
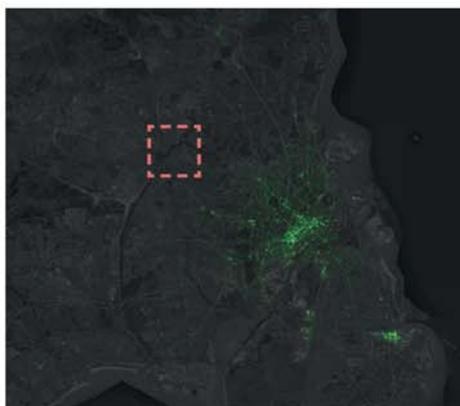
COPENHAGEN

SOURCE
© Mapbox © OpenStreetMap
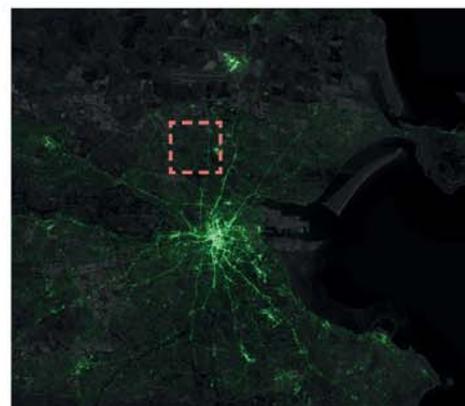
DUBLIN

SOURCE
© Mapbox © OpenStreetMap

BERLIN

10%
OF PEOPLE AGED 60-69 -AND 17% OF PEOPLE AGED OVER-70 - HAVE ACCESS TO THE INTERNET BUT DO NOT USE IT.

8%
ONLY 8% OF ADULTS AGED 55-PLUS IN THE UK HAVE A SOCIAL NETWORKING PROFILE (COMPARED TO 25% OF ALL ADULTS).
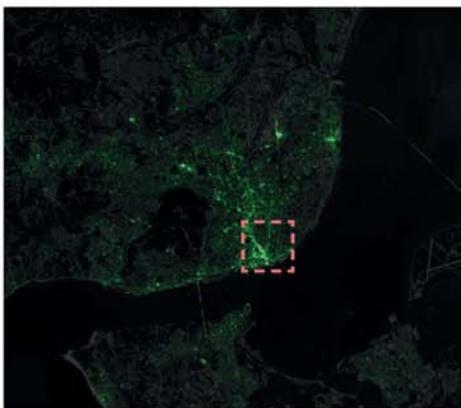
LISBON

MADRID
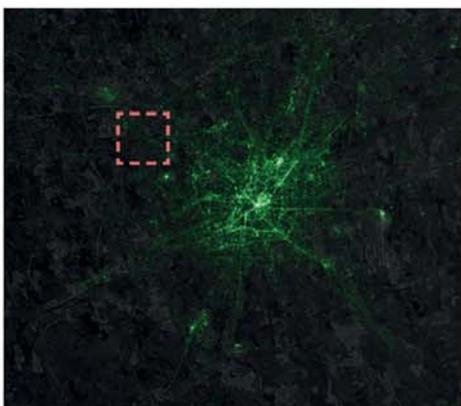
MILAN

PARIS
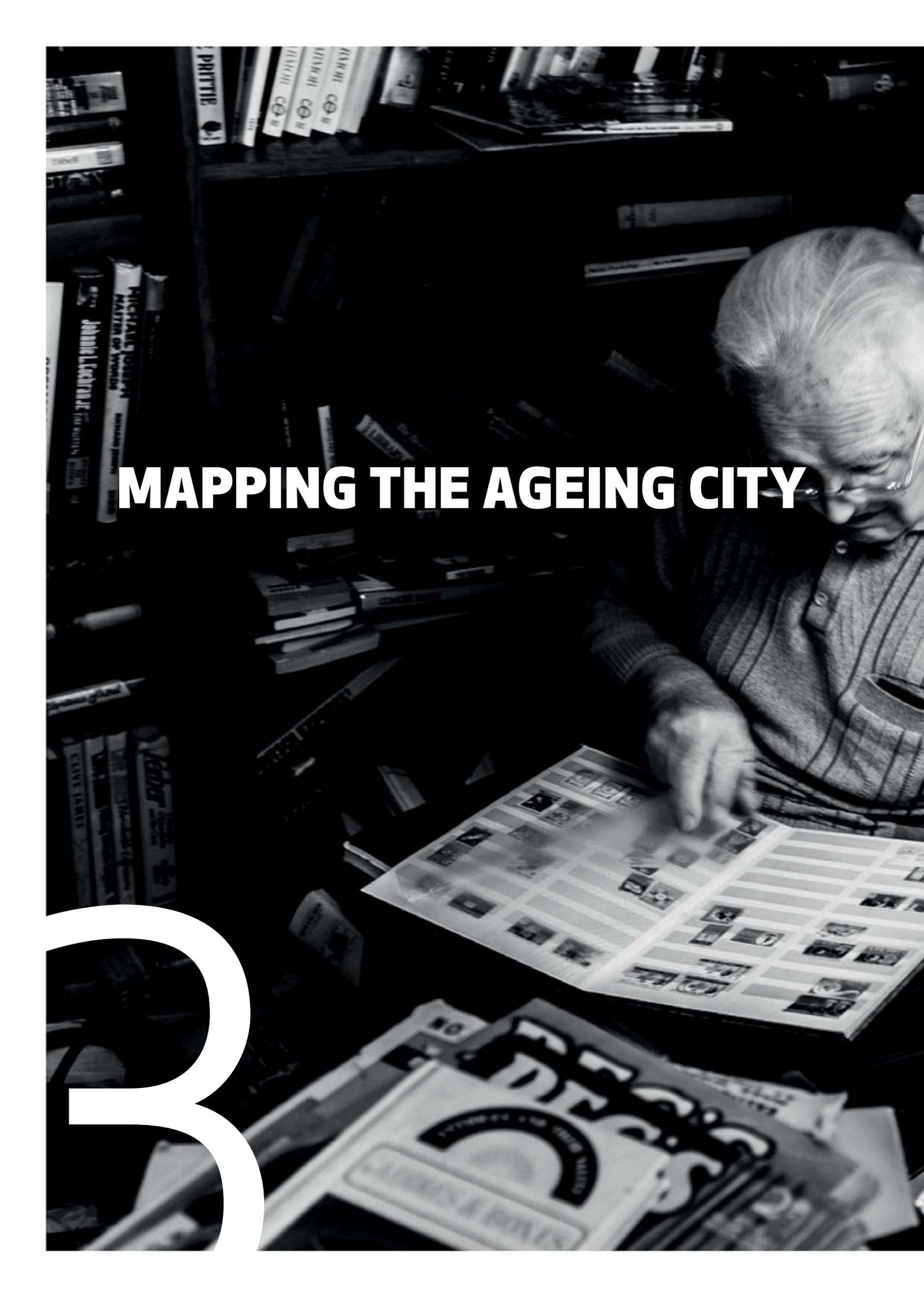
MAPPING THE AGEING CITY

3
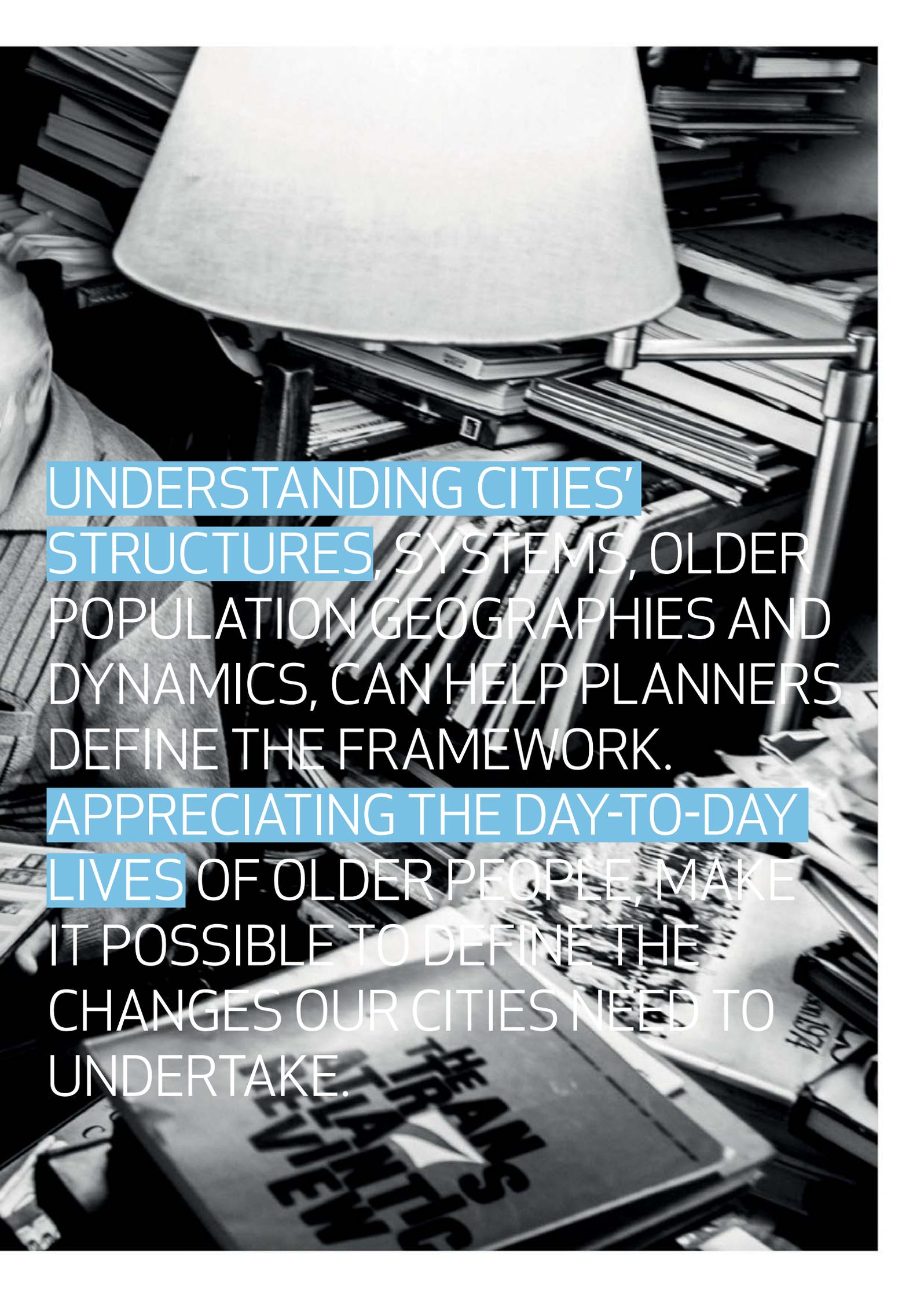
UNDERSTANDING CITIES' STRUCTURES, SYSTEMS, OLDER POPULATION GEOGRAPHIES AND DYNAMICS, CAN HELP PLANNERS DEFINE THE FRAMEWORK. APPRECIATING THE DAY-TO-DAY LIVES OF OLDER PEOPLE, MAKE IT POSSIBLE TO DEFINE THE CHANGES OUR CITIES NEED TO UNDERTAKE.
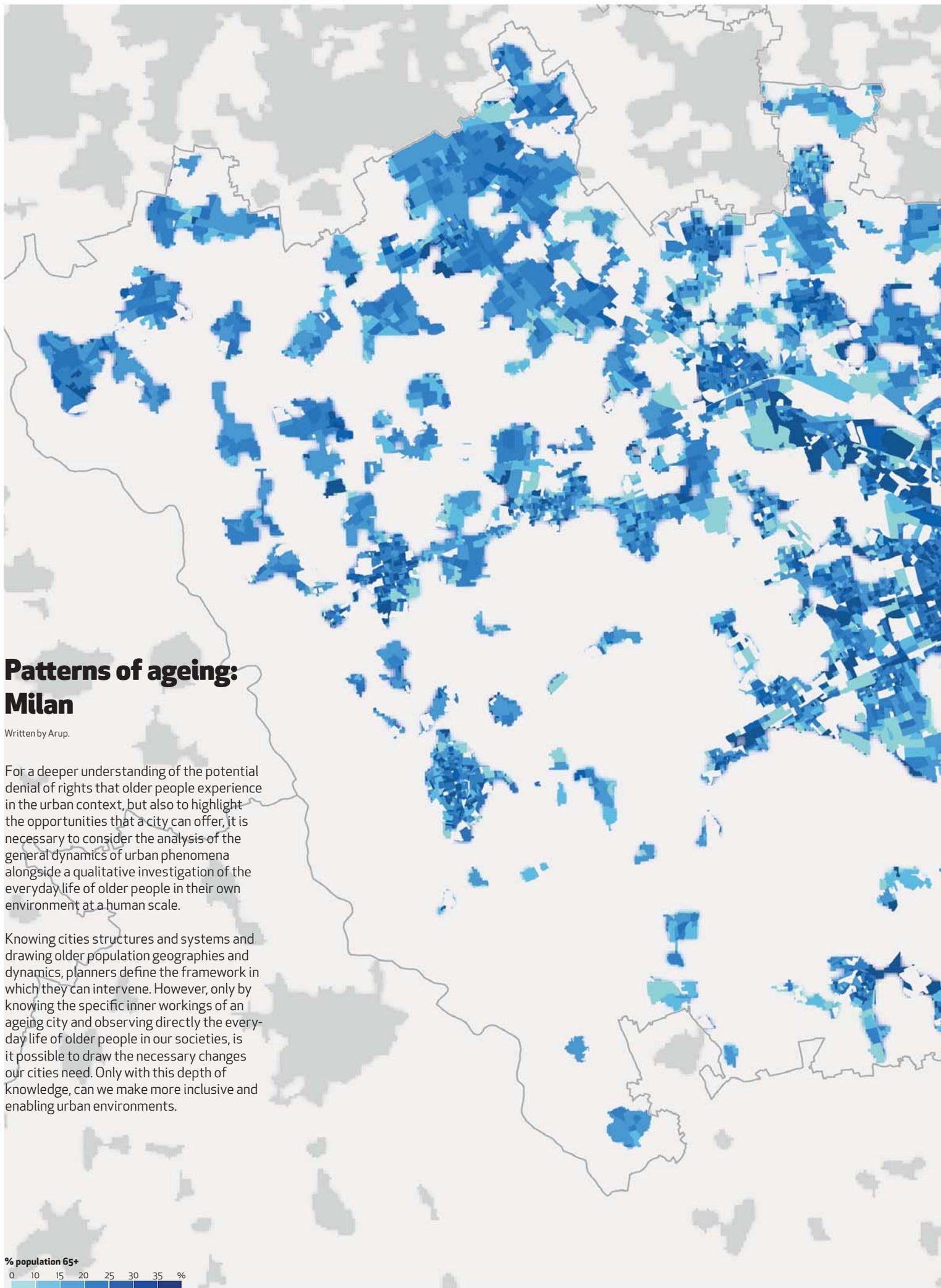
Patterns of ageing:
Milan

Written by Arup.

For a deeper understanding of the potential denial of rights that older people experience in the urban context, but also to highlight the opportunities that a city can offer, it is necessary to consider the analysis of the general dynamics of urban phenomena alongside a qualitative investigation of the everyday life of older people in their own environment at a human scale.

Knowing cities structures and systems and drawing older population geographies and dynamics, planners define the framework in which they can intervene. However, only by knowing the specific inner workings of an ageing city and observing directly the every-day life of older people in our societies, is it possible to draw the necessary changes our cities need. Only with this depth of knowledge, can we make more inclusive and enabling urban environments.

% population 65+

0   10   15   20   25   30   35   %
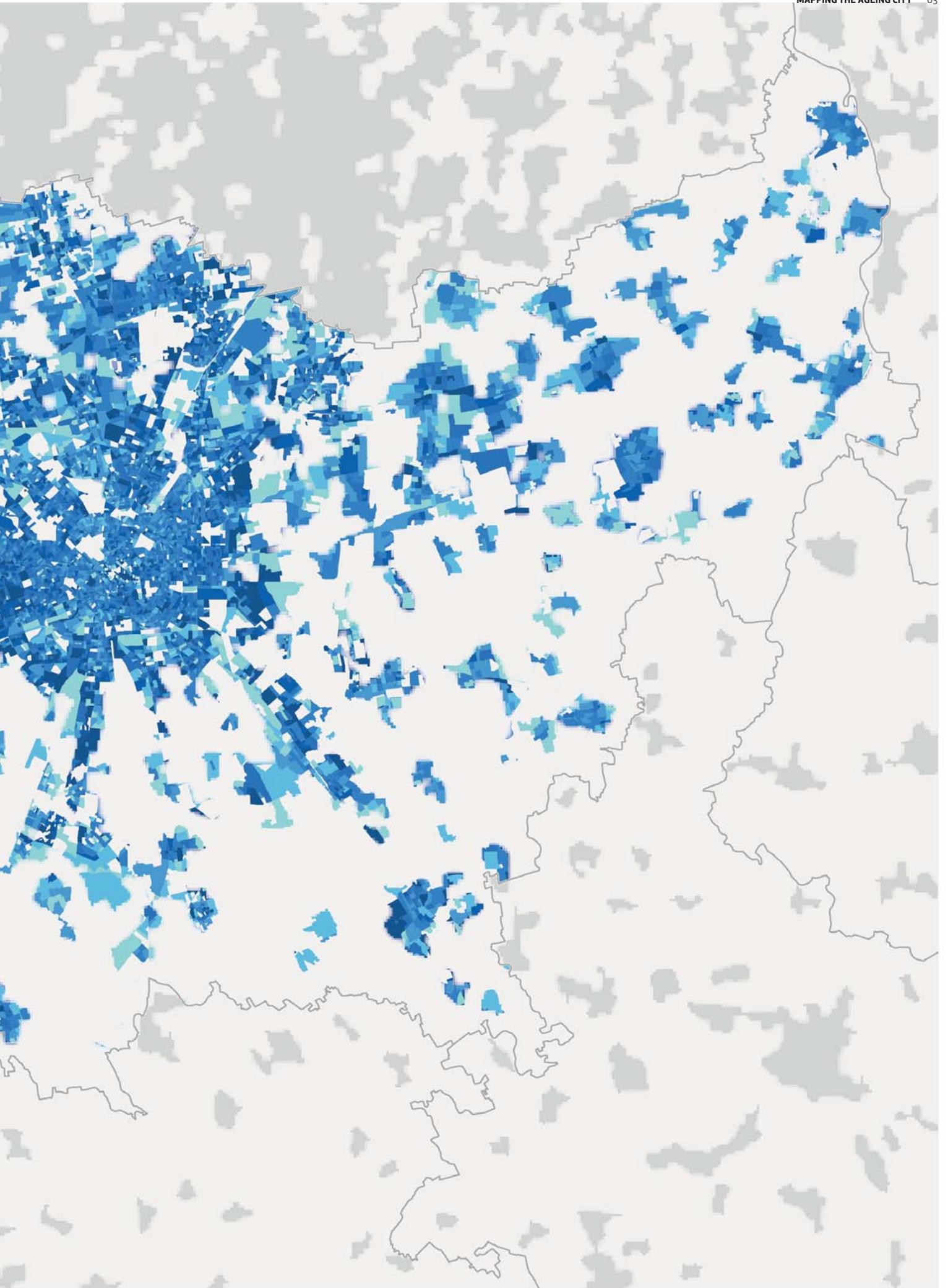
Demographics

Nowadays, Geographic Information Systems (GIS) and the abundant data available on European cities allow a detailed macro analysis of how the data is distributed physically on the urban territory. Looking at the maps that show the concentration of older people (over 65 years old) in the electoral units of Milan, a majority are concentrated in areas located in the external ring of the city, especially in neighbourhoods that can be identified as Greco, Città Studi, Porta Romana, Gratosoglio, Navigli, Bande Nere, Piazza Firenze and Gallaratese. Considering the people aged over 75, the patterns are similar, with the highest concentrations in Greco, Gratosoglio, Viale Certosa and Gallaratese.

For a purpose of a qualitative analysis, one of the 88 Local Identity Nuclei (NIL) in which the city is divided in the municipal urban plan (Piano di Governo del Territorio, PGT), was chosen. The reason for the choice is that, NIL areas have an administrative relevance. Gallaratese is clearly the area with the highest concentration of over-65 years old people. Moreover, similarly to several neighbourhoods in the western part of the city, Gallaratese is also one of the NIL that is ageing at a faster pace.
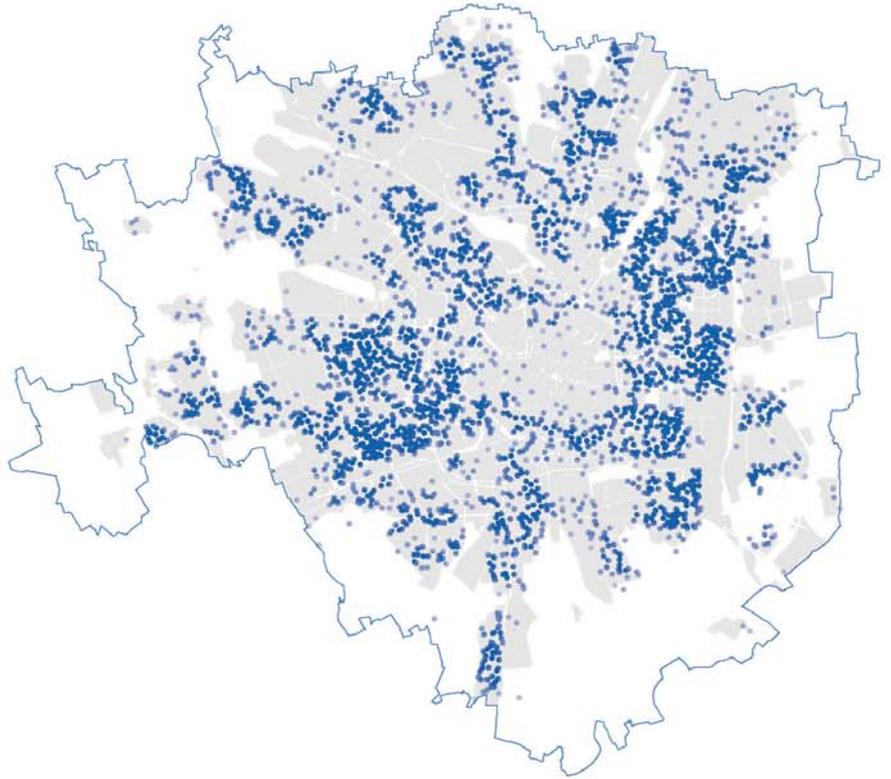
65+ DENSITY | 1 DOT = 100 x 65+

DATA SOURCE
SiSI Comune di Milano
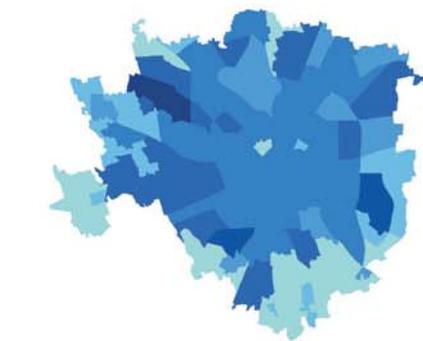
% population 65+

0   10   15   20   25   30   35   %

65+ NIL

DATA SOURCE
SiSI Comune di Milano
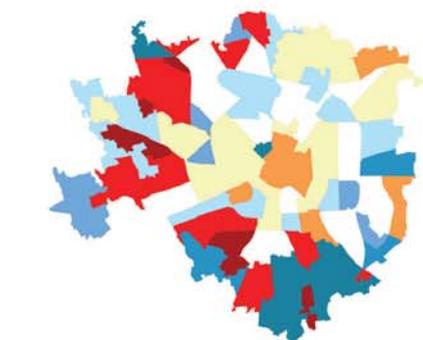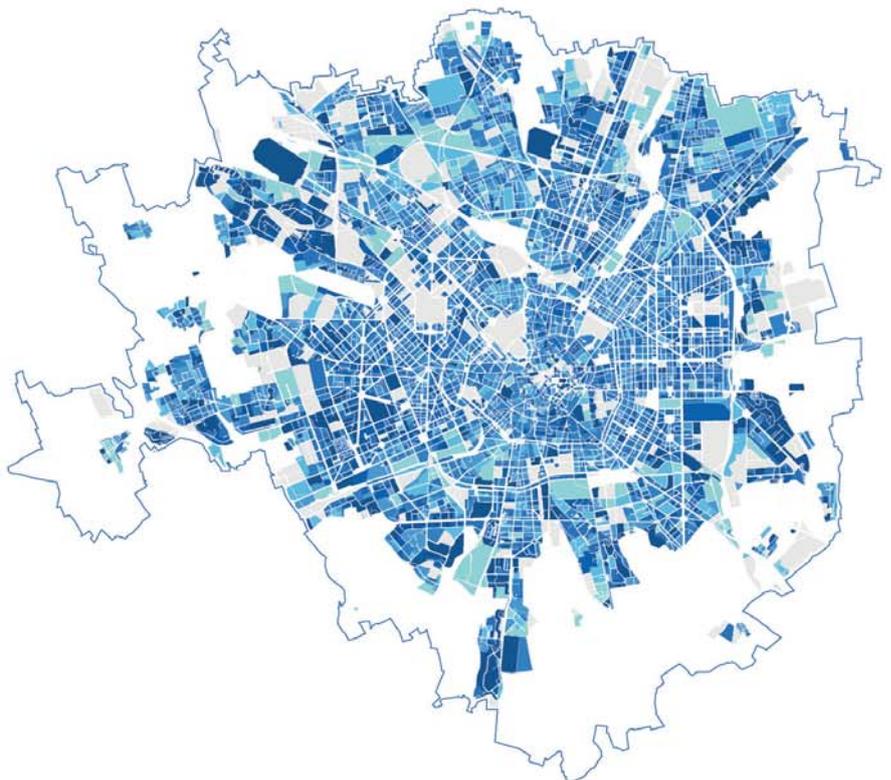
65+ population change

-100 -50 -25 -15 -5   +5 +15 +25 +50 %

65+ 2000-2013

DATA SOURCE
SiSI Comune di Milano

% POPULATION 65+ | MILAN

DATA SOURCE
SiSI Comune di Milano
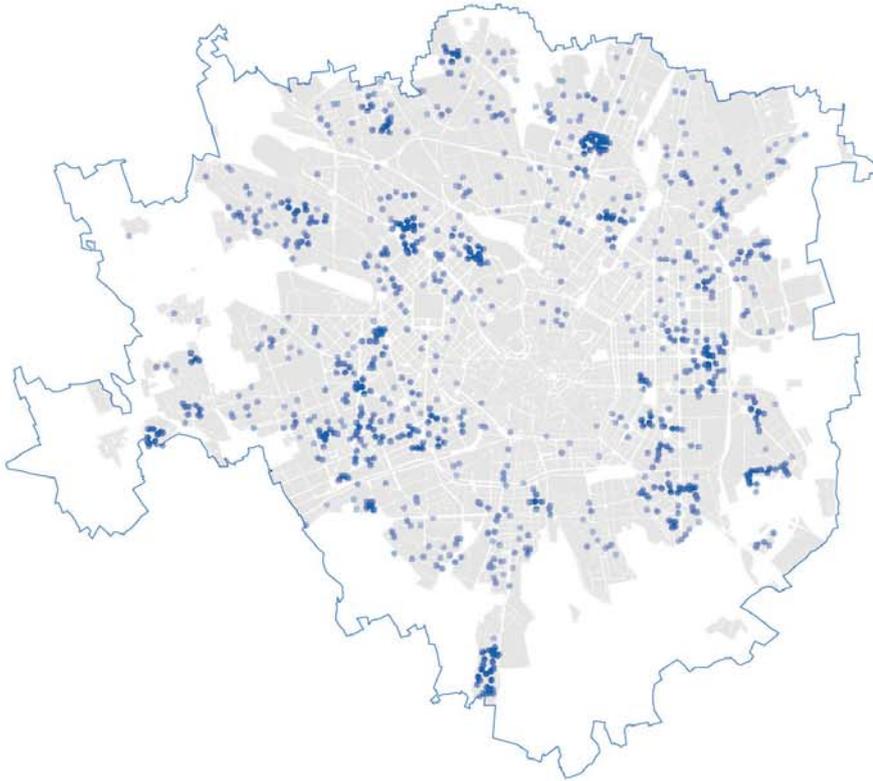
+197%

SINCE 1951, THE POPULATION AGED OVER 65 IN MILAN HAS INCREASED BY 197%

+496%

SINCE 1951, THE POPULATION AGED OVER 75 IN MILAN HAS INCREASED BY 496%

75+ DENSITY | 1 DOT = 100 x 75+

DATA SOURCE
SiSI Comune di Milano
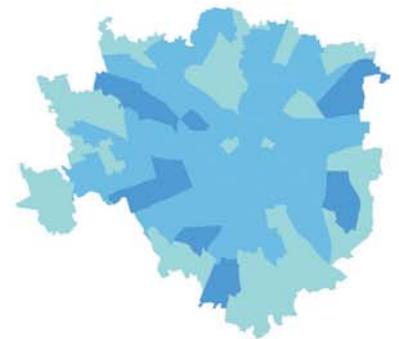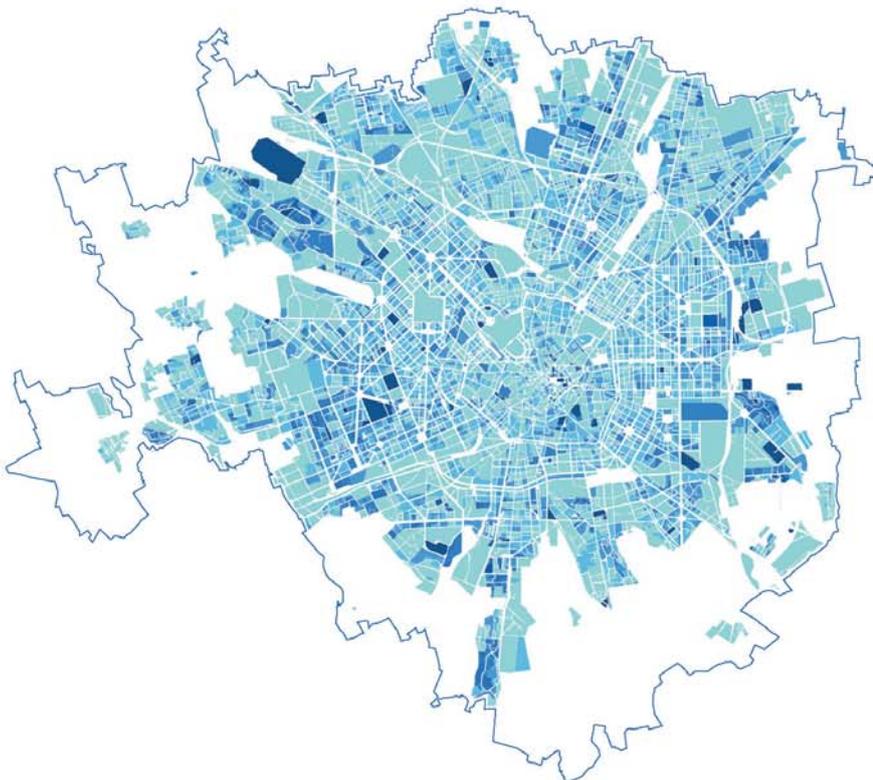
% population 75+

0   10   15   20   25   30   35   %

75+ NIL

DATA SOURCE
SiSI Comune di Milano

75+ population change

-100 -50 -25 -15 -5   +5 +15 +25 +50   %

% POPULATION 75+ | MILAN

DATA SOURCE
SiSI Comune di Milano

75+ 2000-2013

DATA SOURCE
SiSI Comune di Milano

NIL   NEIGHBOURHOOD

% population 65+

0   10   15   20   25   30   35   %
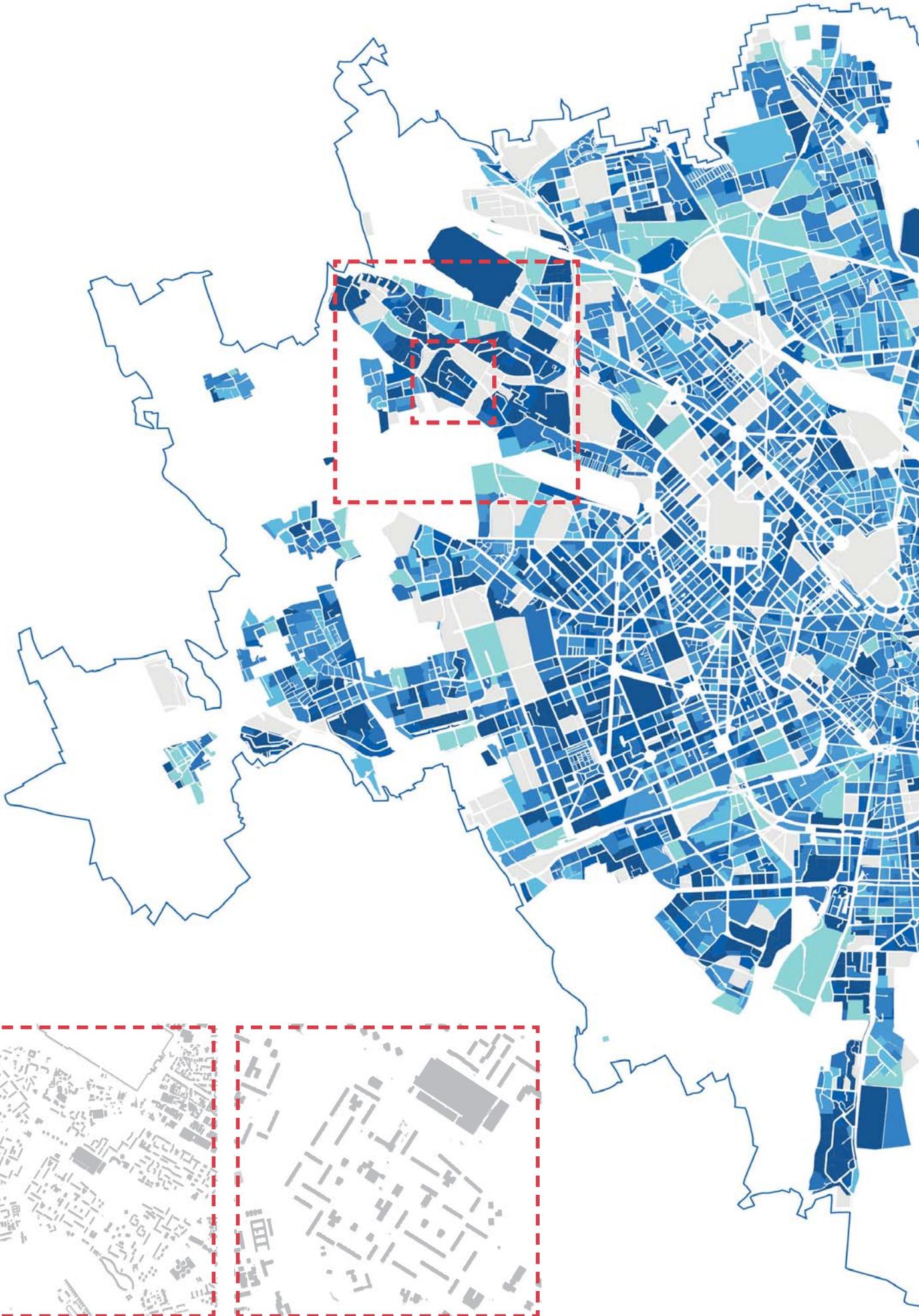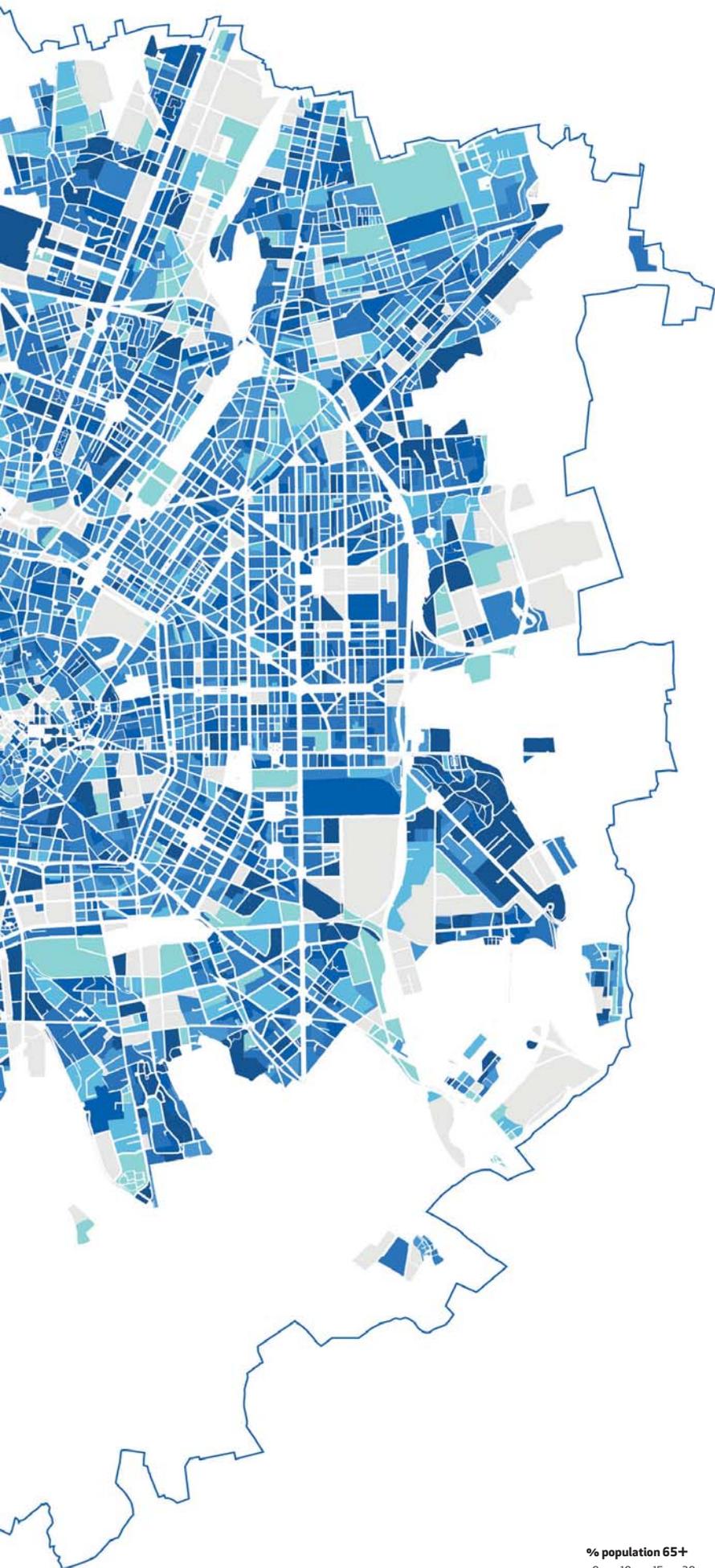
42%

IN GALLARATESE (MILAN) 42% OF THE POPULATION AGED OVER-80 YEARS LIVES ALONE.

1.4

IN GALLARATESE, FOR EVERY PERSON AGED OVER 65 THERE IS ONLY 1.4 ECONOMICALLY ACTIVE PERSON (20-64 YEARS OLD).

Urban structure and ageing blocks

Written by Arup.

Throug an analysis of the data concerning ageing society applied to city blocks, it is possible to have a detailed representation of the structure of the ageing city.

As an example, Gallaratese, the neighbourhood analysed in the following pages, has a population of 32,975 inhabitants, of which 35% is over 65 years old and 10% over 80; it is the oldest in Milan and one of the oldest neighbourhoods in Europe. Located in the North-west of the city, around 7.5 km from the central Piazza Duomo, it is a concentration of public housing estates built between the 1960s and the 1980s.

The analysis, based on two days of direct observation and on a semi-structured informal workshop with a group of inhabitants, shows a gap between the infrastructures and the services that the city offers, and the accessibility guaranteed to older people. Loredana, Enrica, (70 years old), Tecla, Rosetta and Donato (80 years old), helped the researchers to find the causes of this gap.

Society

Gallaratese is mainly a residential neighbourhood, where the population by day (30,800) is lower than the population by night (33,600). According to the municipal urban plan, a shopping mall is the main centrality.

The provision of services and facilities available in the area is studied through maps that highlight the influence of the services and facilities on the surrounding territory according to an established scale of attractiveness. While the functions that guarantee security are well distributed across the territory, social facilities are concentrated mainly in the northern part and health services in the centre.

During the workshop, a disconnection between old residents and the offer of services and facilities that the public sector and NGOs run in the neighbourhood emerged, which resulted in the low accessibility of these services. The disconnection is linked mainly to three factors: a tower creates an introverted community; older people generally suffer from loneliness and feel that they lack real scope to live active lives. How can cities solve this disconnection, partly caused by the distribution of services and facilities, partly by the offer of activities and partly by features that are common to the social group?

UN-SAFE GREEN AREA

THE WORKERS SOCIAL CLUB IS CLOSING

THE MALL BECAME A MEETING POINT

THE CHURCH ORGANIZES COURSES AND SOCIAL ACTIVITIES

THE FORMER NURSERY SCHOOL IS NOW UNUSED

THE TOWER IS AN INTROVERTED COMMUNITY

HEALTH SERVICES TO BE REACHED BY CAR
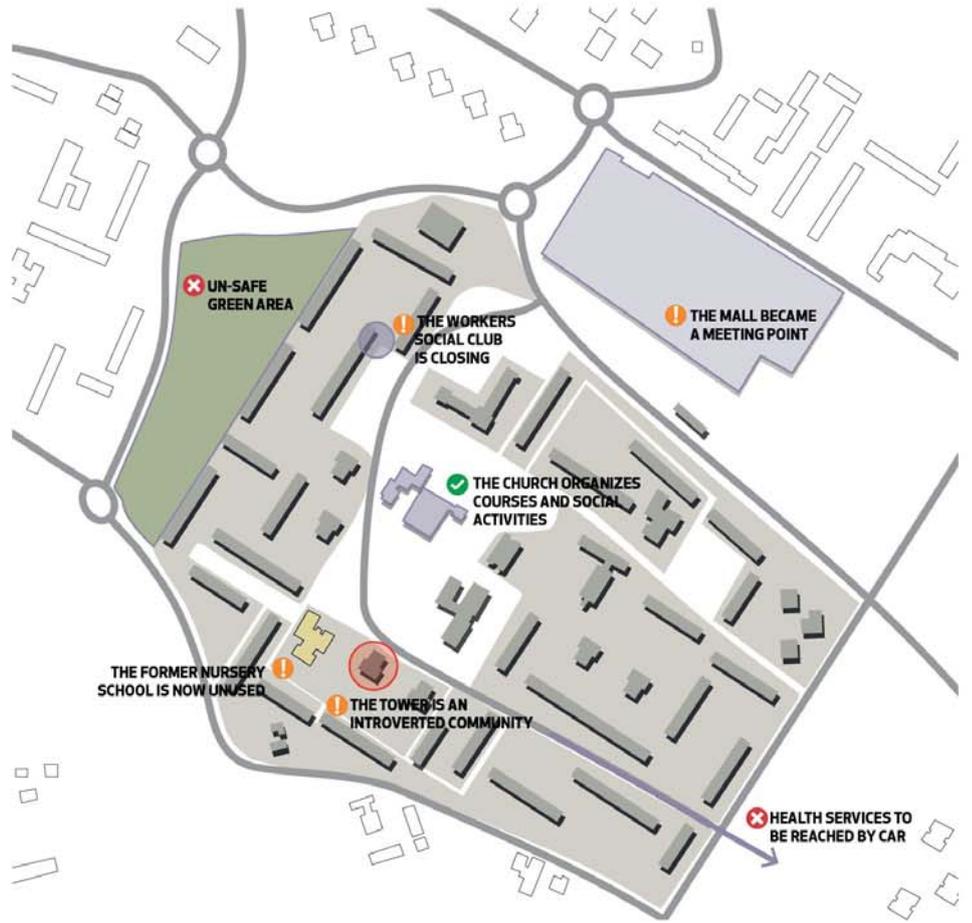
INTERPRETATIVE MAP
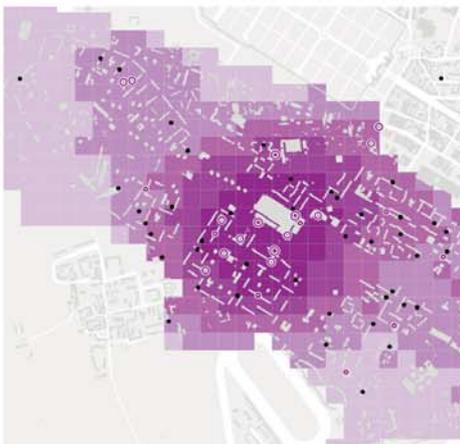
HEALTH
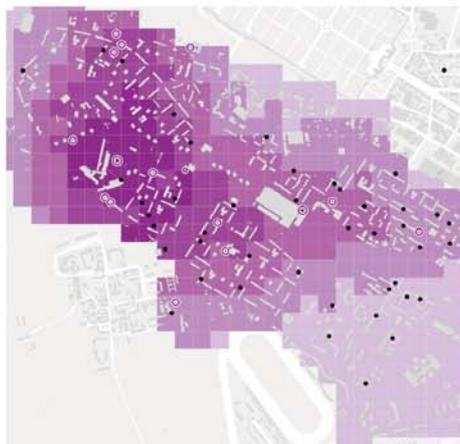
SOCIAL SERVICES

SECURITY

PUBLIC OPEN SPACES

"ARE YOU IN TOUCH WITH ALL THE PEOPLE THAT LIVE IN THE TOWER?"

"WE HELPED EACH OTHER A LOT THROUGHOUT THE YEARS"

ROSETTA, 80

"DO YOU STILL SEE EACH OTHER SO OFTEN?"

"WE LOST THE HABIT"
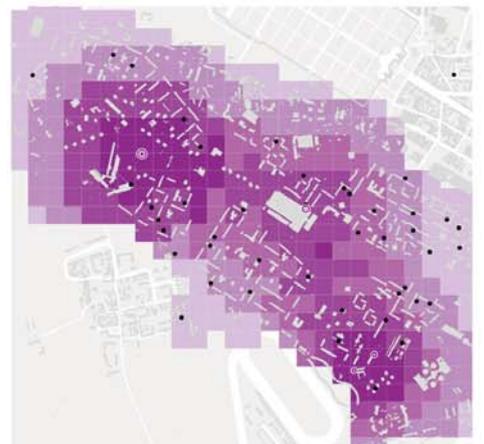
DONATO, 80

Introverted community. Tecla and Donato receive their interviewers at home after lunch; with them, there is a group of residents from the same building. Tecla baked an exquisite cake and makes coffee. It is an intimate, almost familiar environment. In the tower, there are 56 families, of which only 4 are under 65 years old. They all came at the same time 50 years ago, to live in public housing estates of which later on they became owners. Interviewer: "Are you in touch with all the people that live in the tower?" Rosetta: "Yes we are, we helped each other a lot..." Loredana: "We used to go daily with the children at the park, and often to have dinner together." Rosetta: "If we have an emergency, we knock on our neighbours' door!" The tower is seen as a fundamental certainty to the point that, even if they are aware that the expenses they pay are overpriced, they would not sell and buy another apartment. There is a shared memory of the community of the tower, made of places they live together, such as the park, the church, Lulli's flat, which was "always open for everyone". However, they rarely have social connections with other neighbours who live in other buildings in the surroundings.

Loneliness. Interviewer: "Do you still see each other often?" Donato: "We lost the habit." Despite being aware of the fact that they can still count on each other for basic help, they feel lonely. Loneliness is one of the most known problems older people have to face. A growing body of research in the field shows that social isolation can make people more vulnerable to illness and disease. Among the people interviewed, within the introverted community of the tower, loneliness has a specific meaning. Interviewer: "What do you do in your free time?" Rosetta: "We watch the TV! Who should I go out with?" Donato: "Since I cannot go out, I like to walk on my tapis-roulant watching out of the window guys playing football". Loredana: "What I don't like of an old neighbourhood, is that you can't see anyone in the streets." Instead of being perceived as a problem for safety and security, loneliness is a barrier to the out-door and social life of the neighbourhood.

Lack of activities. Another issue that is raised as an obstacle to an active out-door life is the lack of activities. Interviewer: "Why don't you go out?" Loredana: "Because we are lazy, it's laziness." Rosetta: "With whom should I go to the park? And to do what?" The reasons to go out are a few: to do the grocery shop, to exercise in a gym, to go to the religious functions at the church and to take care of grandchildren. However, they complain about the inadequate offer of activities in the area, where there is only one centre for older people which is considered far, and a mall, whilst other smaller shops and spaces - such as a former recreational club for workers- are closing.

"WHAT DO YOU DO IN YOUR FREE TIME?"

"WE WATCH THE TV!"

"WHY DON'T YOU GO OUT?"

"WITH WHOM? AND TO DO WHAT?"

ROSETTA, 80

"WHAT I DON'T LIKE OF AN OLD NEIGHBOURHOOD, IS THAT YOU CAN'T SEE ANYONE IN THE STREETS."

LOREDANA, 70

Built environment

Only a few housing estates in Gallaratese, built by the public sector 1960s to the 1980s, are still publicly owned; the rest were sold to the residents. The buildings - big housing blocks and high-rise buildings - are well maintained, but poorly designed. The housing typology has repercussions on the offer of green spaces and commercial facilities; it has an effect on the overall out-door life. The percentage of green spaces is high, but the effective accessibility of green spaces depends on their design. On the other hand, the commercial offer (e.g. retail, street markets and shopping mall) is concentrated in two areas.

The group of older residents confirmed the inadequacy of the residential buildings because of a difficulty in adapting to their needs. Despite appreciating the parks of the area, they find them inaccessible and suggest the need of closer and smaller gardens. They lamented the absence of small retail shops, as an alternative to the mall, but underlined the smartness of the few shop keepers, market sellers and of the mall in offering ad-hoc services for older people. How can they adapt buildings to their new users and think of them in a more flexible and resilient manner? How can they increase out-door life in the area starting from the existing green legacy and microeconomic environment?
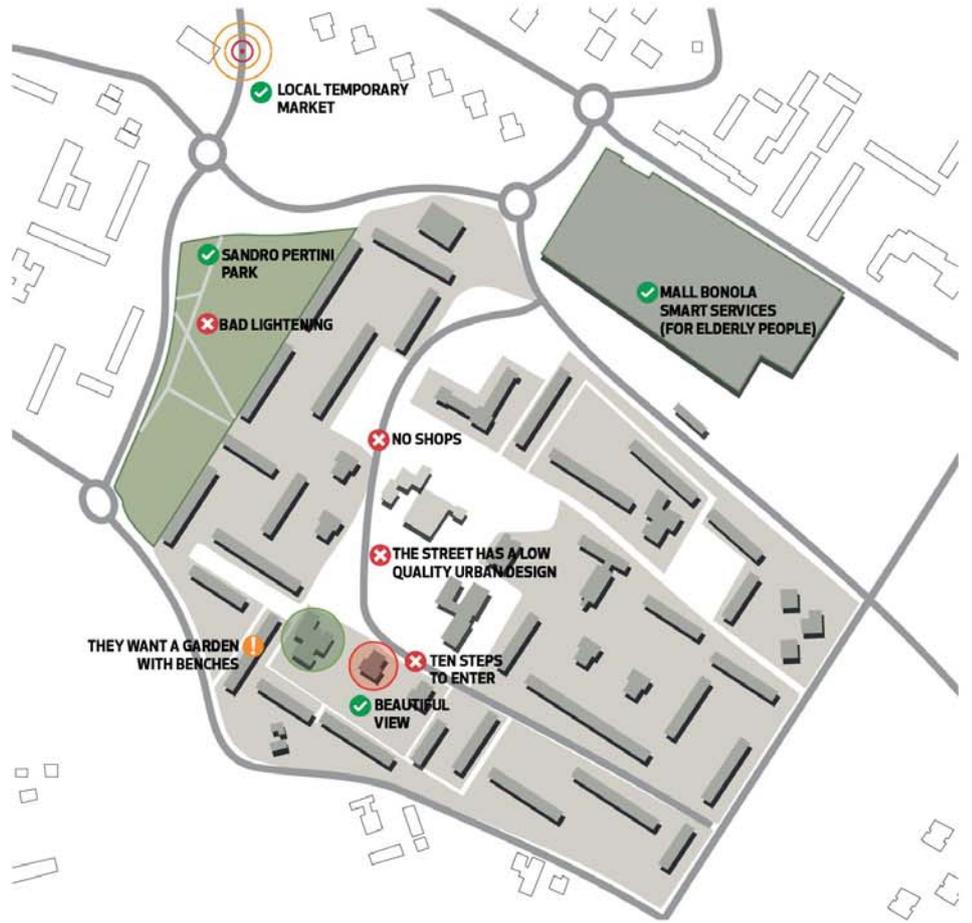
- LOCAL TEMPORARY MARKET
- SANDRO PERTINI PARK
- BAD LIGHTENING
- MALL BONOLA SMART SERVICES (FOR ELDERLY PEOPLE)
- NO SHOPS
- THE STREET HAS A LOW QUALITY URBAN DESIGN
- THEY WANT A GARDEN WITH BENCHES
- TEN STEPS TO ENTER
- BEAUTIFUL VIEW

INTERPRETATIVE MAP
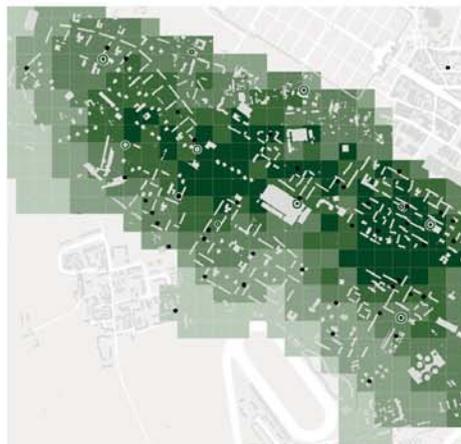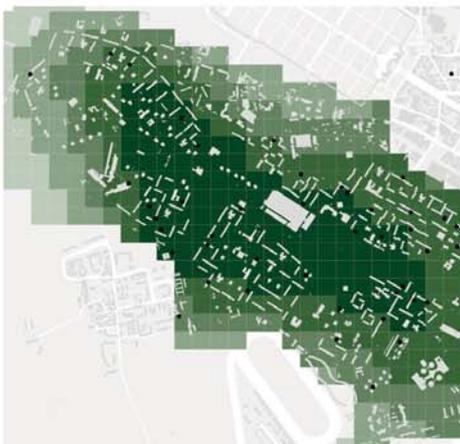
PARKS

FOOD

HOUSING

GREEN AREAS

"THIS PLACE DOESN'T OFFER A LOT…IF YOUNG PEOPLE COME BACK TO LIVE HERE, IT'S BECAUSE THEY NEED THE HELP OF THEIR GRANNIES OR ALSO BECAUSE IT IS A GREEN AREA"

LOREDANA, 70

"IT WOULD BE NICE IF THEY COULD TRANSFORM IT IN A GREEN AREA WITH BENCHES, WHERE WE COULD GO AND CHAT".

LOREDANA, 70

Inaccessible green areas. The group of residents appreciates the current provision of green spaces. Loredana: "This place hasn't got a lot, that's also why young people went away and don't come back to live here…if they do, it's because they need the help of their grannies or also because it is a green area". Certainly, the group underlines that green spaces influence the attractivenness of the area. Furthermore, the Trenno Park, unanimously chosen as the most representative place of the neighbourhood, also forms part of the shared memories they have. Nevertheless, parks are not used because they are not accessible. There are many reasons, from loneliness and the lack of activities, to the physical barriers such as the distance or the absence of public toilets and of proper lightening. In fact, the older residents expressed a desire for more accessible gardens to be located in front of their tower block. At the moment, there is a nursery school in front of the tower - which is closed because the number of children in the area plummeted - Loredana: "It would be nice if they could transform it into a green area with benches, where we could go and chat".

Few but pro-active food sources. Interv.: "Where do you do your grocery shop?" Tecla: "We go to the mall. There were many different small shops, but since the Bonola (the mall) has been built , one after another they all closed". Bonola is a shopping mall that opened in 1988, and was integrated with other public functions such as the library. Nowadays, it is one of the last food sources and commercial buildings in the area. As a result, the in-door spaces of this big shopping centre, and the tables of its international food chains, are used by the older population as the streets and the piazzas of public open spaces. Rosetta: "We also go to the local food market twice a week, because it costs less…and it is also an incentive to see other people and to chat". Both food sources, the market and the mall, in an informal or in a more formal way, developed specific services for older people to help them carry the shop bags.

Inappropriate housing. Tecla and Donato are pleased to show their two-bedroom flat with a kitchen, a bathroom and a living room; their children grew up here, everything in the house has a story to tell. Loredana: "If it's a sunny day you can see all the Alps and the Monte Rosa, the mountain with beautiful shades of pink". Despite the sentimental attachment to the house, they highline some problems. The dimension of the spaces, such as the bathroom and the lifts, are not designed to be flexible to adapt to eventual disabilities or to a reduced physical capacity of the members of the families. Loredana: "The worst part is the access to the building, the ramp is dangerous and the stairs can be an obstacle!" During the workshop, the group also mentions that a common room for all the inhabitants of the tower would be useful.

""WHERE DO YOU DO YOUR GROCERY SHOP?"

"WE GO TO THE MALL. THERE WERE MANY SMALL SHOPS, BUT SINCE THE MALL HAS BEEN BUILT THEY ALL CLOSED"

TECLA, 80

"HOW IS THIS BUILDING DESIGNED?"

"THE WORST PART IS THE ACCESS TO THE BUILDING."

LOREDANA, 70

Mobility

The area is well-served by public transport links, both by buses and by an underground metro line which has its stop in Bonola, in front of the mall. The availability of parking spaces suggests also a high percentage of private transport use in the modal share. Finally, the street environment for walking lacks important features: in fact, the streets are too wide to be crossed, and they lack pedestrian traffic lights; there are few benches along sidewalks, and the sidewalk pavement is uneven. The absence of shopping streets and the scarcity of active fronts suggest long distances to reach points of interest.

The interviews revealed that mobility for an older person shapes the city in a completely different way. The older people interviewed, go to the centre of the city only once or twice a year. Their maximum walking distance is 500 m, a distance that is covered in 15-20 min. As a result, the presence of a tube station is almost useless, because of the difficulty in reaching the train once in the station, in addition to the difficulty of reaching the station in the first place. For longer distances, they use cars. In fact, few buses and bus stops are well-designed for people with reduced physical capacities.How to design a more accessible neighbourhood? How let older people access a wider area of the city, for example, providing them access to what the city centre can offer?

LONG ROUTE TO LOCAL MARKET

LONG ROUTE TO GROCERY STORES

CHURCH IS TOO FAR

PERTINI PARK IS TOO FAR

UNEVEN AND RUTTY SIDEWALKS

NO TRAFFIC LIGHTS TO CROSS TO TE STREET

HEALTH SERVICES TO BE REACHED BY CAR

INTERPRETATIVE MAP

DATA SOURCE
Interview

car/pedestrian interference point

car/pedestrian interference point

kerb	P_{BUS}	↓	↑	P	kerb

	3 m	10 m	2,5 m
	3,8"	12,5"	3,1"
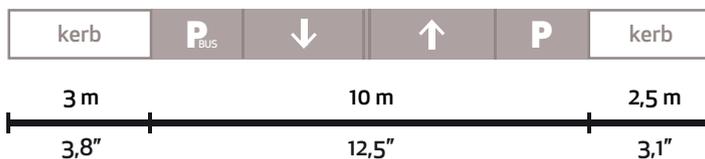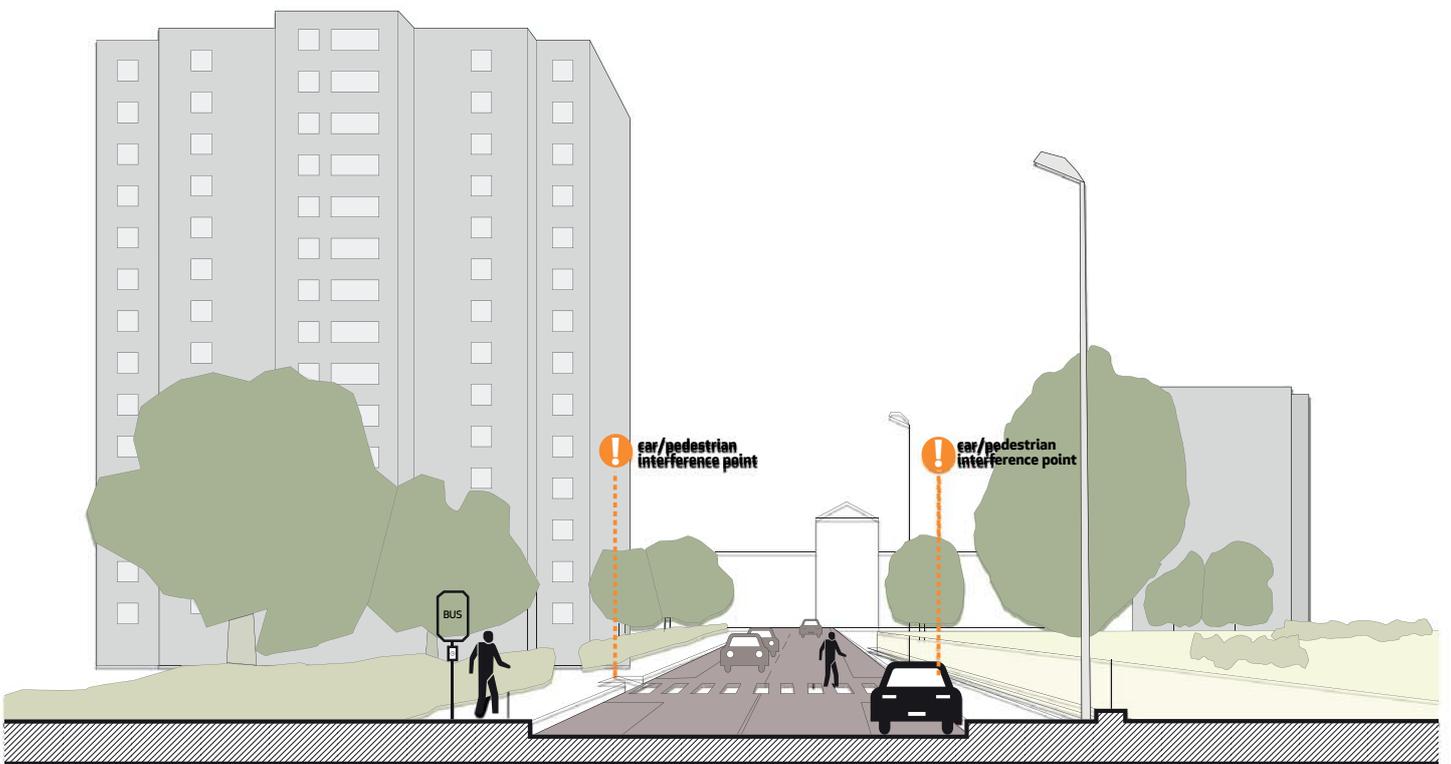
TYPICAL ROAD SECTION

SIDEWALKS

"HOW OFTEN DO YOU GO TO THE CITY CENTRE, LET'S SAY PIAZZA DUOMO?"

"I WOULD SAY ONCE A YEAR"

TECLA, 80

"NOW IT IS BETTER, WITH SMALL RAMPS AT THE CORNER OF SIDEWALKS, BUT I HAD TO COMPLAIN BECAUSE THEY FORGOT AN ENTIRE PART OF THE STREET"

ENRICA, 70

The accessible neighbourhood. Interviewer: "Where would you trace the border of your neighbourhood? What is the area to which you can walk? And where do you go every day?" Rosetta: "Bonola, to the shopping mall!" Tecla: "Yes, that is the farthest place where I go, the gym, which is in San Leonardo, is already in another neighbourhood". Interviewer: "How often do you go to the city centre, let's say Piazza Duomo?" Tecla: "I would say once a year" Loredana: "Maybe twice". Rosetta: "It has been more than a year since the last time I went there". According to the group, the dimension of the neighbourhood is approximately defined by a 200 m distance they can walk from door to door. In addition, this is also the same urban area lived: in fact, whereas they consider the city in its complexity, their city has a considerably smaller dimension. As a result, the facilities they can benefit from are limited to this area, whose detailed design is fundamental.

Streets and safety. Undoubtedly, older people are vulnerable to the risks of walking in an urban environment; having often reduced physical functions and a walking speed far slower than the human average, they are exposed to multiple challenges. The group discussed the issue in depth, as they perceive the streets and sidewalks of their neighbourhoods as unfriendly. Tecla was hit by a car while crossing the street in front of the tower. Rosetta: "The street doesn't have traffic lights to cross it, that's why it is dangerous…and the sidewalks are uneven and rutty…there are no benches along the street". Enrica: "Now it is better because there are ramps at the corner of sidewalks, but I had to complain because they forgot an entire part of the street". Also lighting plays an important role in guaranteeing safety and security and a more pleasant and welcoming environment. Loredana: "They designed led lamps for some paths, but since there are green buffers between buildings and the sidewalks, the LED lamps leave dark areas, which I perceive as unsafe". Similarly, the street lightning provides light only to the vehicular section of the street, leaving the sidewalks unlit.

Transport modes Among five people interviewed, two of them, aged around 80 years old have reduced physical functions, while the other three do not. Only one of them uses public transport modes. Rosetta: "It is difficult to get on the bus with those high steps". Loredana: "When my grandchildren are with me, how can I use the bus?" Generally, at least one person per household can drive, and there are enough parking spaces in the area. On the other hand, they are all aware of the fact that the area is very well connected to the urban networks, thanks to a metro station and to all the bus lines.

"WHERE WOULD YOU TRACE THE BORDER OF YOUR NEIGHBOURHOOD? "

"BONOLA, THE SHOPPING MALL!"

ROSETTA, 80

"IT IS DIFFICULT TO GET ON THE BUS WITH THOSE HIGH STEPS"

ROSETTA, 80

Digital environment

Considering the digital environment, Gallaratese has largely the same facilities as the rest of the city. Open-WiFi, the Wi-Fi network of the city, has around 10 hot-spots in the area, and it is the only one public digital infrastructure. During the workshop, except for one member of the group, all the others declared their digital illiteracy: they do not use computers and smart phones. But, once solicited, through brief explanations of the possible uses they showed interest. How can we educate older people on the digital environment and use it to shape age-friendly cities and neighbourhoods?

✅ THE CHURCH ORGANIZES COMPUTER COURSES

⚠️ THEY COULD USE THE CROWD-FUNDING FOR THE GARDEN

❌ THEY WANT A VIDEODOOR

❌ THEY WANT A COMPUTER COURSE AT HOME

INTERPRETATIVE MAP

DATA SOURCE
Interview

INTERNET

"I use internet when I don't know a word"
Loredana

"I'm afraid of the internet"
Enrica

MOBILEPHONE | SMS

"I can't digit text messages"
Tecla

SOCIAL

"I use social networks with my grand children"
Loredana

COMPUTER

"I want someone that teach me at home"
Donato

TECLA, 80 **DONATO,** 80 **ROSETTA,** 80 **LOREDANA,** 70 **ENRICA,** 70

SMARTPHONE | APP

"I enjoy taking pictures and modifying them"
Loredana

VIDEO ENTRY-PHONE

"I want a video entry-phone to be safer"
Tecla

CROWDFUNDING

"That's interesting"
All

eHEALTH

"I knock on the door of my neighbour"
Rosetta

TECHONOLOGY PENETRATION

DATA SOURCE
Interview

THE PARISH ORGANISES TRAINING COURSES

"IF YOU ARE IN AN EMERGENCY WHAT DO YOU DO?"

"I KNOCK ON MY NEIGHBOURS' DOORS! …OR I CAN USE THE PHONE"

ROSETTA, 80

"WHERE DO YOU GO IF YOU WANT TO COMPLAIN ABOUT A PROBLEM IN THE NEIGHBOURHOOD?"

"TO THE COUNCIL Z8! "

TECLA, 80

Information, social connections and digital environment. Older people are generally late adopters to the world of technologies. Loredana, the youngest person in the group, is the only one who is engaged with technologies: she navigates around the web, she has a Facebook account. Donato: "I nominated her our technology, computer and digital camera teacher!" Loredana:"I enjoy taking pictures and modifying them…I use the internet to look for a word or a grammar rule…I learnt at work". In general, the other members of the group use just phones or mobile phones to communicate, typing text messages is considered an advanced level. Being used to live without it, digital technologies are not perceived as a necessity, but they arise curiosity. Donato:"If there was somebody who could teach me at home…" Accessibility to the digital environment could combat loneliness, be a motivation for new social connections. Interviewer: "Wouldn't you go to a place other than your home for using tutoring services?" Donato: "Yes, I think I would".

Safety, security and digital environment. Health appliances are one of the first digital industries responding to the market of older people. Sensors, smart appliances, and other kinds of monitoring and communication technologies could help older people to remain at home safely. However, during the workshop, the group do not express this as a necessity, but instead they seemed to be proud they could rely on a social network of help they built throughout the years among the inhabitants of the tower. Interviewer: "If you are in an emergency what do you do?" Rosetta: "I knock on the door of my neighbour! …or I can use the phone". Nevertheless, an issue concerning security is raised, after a couple of thefts during the day, they realised they probably need a video entry-phone.

Civic engagement and digital environment. Interviewer: "Where do you go if you need to complain about a problem in the neighbourhood?" Tecla: "To the administrative council of the zone! " Loredana: "I go there quite often!" Enrica: "I asked for the sidewalk ramps to be implemented!" The group demonstrates awareness of the democratic systems of participation. Civic engagement is an activity that can introduce a greater scope to the life of older people, and is a resource for the entire society. Considering the diffuse use of social networks, online forums and online crowd-funding initiatives, the scarce level of accessibility to it is a limit. Interviewer: "Would you use crowd funding? Let's say for example for the garden you would like to have in the area?" Enrica:"How does it work? What do you mean?" And, after a brief explanation… "yes sure that's interesting!"

"WOULD YOU USE CROWD FUNDING?"

"HOW DOES IT WORK? WHAT DO YOU MEAN?"

… AFTER A BRIEF EXPLANATION…

"YES SURE THAT'S INTERESTING!"

ENRICA, 70

"I NOMINATED LOREDANA OUR TECHNOLOGY, COMPUTER AND DIGITAL CAMERA TEACHER!"

DONATO, 80

SHAPING THE AGEING CITY

4

WHAT ARE THE MAIN ISSUES WE HAVE TO INVESTIGATE TO BETTER SHAPE OUR AGEING CITIES?

SOCIETY

Written by Sion Jones, HelpAge International.

Urbanisation on a scale not seen since the industrial revolution is rapidly changing and challenging social relations and structures in towns and cities across the world. In Europe, whilst relatively urbanised and already with an older population than most regions in the world, these dynamics are coupled with economic and cultural trends and norms that mean an increasing number of us are growing older in urban environments.

Whilst technology, the built environment and mobility are all issues that interact with ageing populations in interesting and unexpected ways that can reduce the discrimination we face in older age - the role of society around us and our participation within it, is also key to delivering social justice and sustainable cities. As we grow old and change, and the cities around us grow and change, the policies and processes that need to be in place to ensure the fulfilment of our rights also need to change.

Engagement and participation

Social engagement and participation through our lives can take many forms. This engagement and participation is influenced by a number of factors, including our age. Often in older age we are marginalised and excluded from processes and decision making, which reduces our influence and creates systems and power imbalances that reinforce discrimination against us. Towns and cities provide unique environments and opportunities to ensure our voices in older age are listened to and acted upon.

A strengthened civil society representing our voices and perspectives in older age plays an important part in ensuring our effective participation and engagement in decision making processes and systems that will impact our experience of living in the city.

As cities globally increasingly become sites of environmental and climate change driven disasters and emergencies, our contingency planning and resilience building activities must be inclusive and recognise our changing vulnerabilities throughout our lives and into older age.

Creating positive and inclusive public and open spaces requires a social dimension to encourage public ownership and develop cross community and intergenerational linkages. In the current context of fiscal austerity across much of Europe, the impact of investing in social infrastructure such as community centres and groups, libraries and leisure centres, in creating inclusive and prosperous urban environments, cannot be underestimated.

Ensuring we have secure and adequate incomes in our older age is also key to ensuring we live in inclusive and prospering urban environments. Opportunities to earn a living should not discriminate based on older age whilst pension coverage, quality and adequacy should take into consideration the costs of living in urban environments that are often in a state of flux.

CREATING POSITIVE AND INCLUSIVE PUBLIC AND OPEN SPACES REQUIRES A SOCIAL DIMENSION TO ENCOURAGE PUBLIC OWNERSHIP AND DEVELOP CROSS COMMUNITY AND INTERGENERATIONAL LINKAGES.

HOW CAN CITIES CHALLENGE DISCRIMINATION?

CHALLENGING DISCRIMINATION

How can we ensure that the policies and systems that construct the world around us are designed to fulfil our rights without discrimination throughout our lives and into our older age?

ACTIVE CIVIL SOCIETY

How can a strong and active civil society give us a clearer and more effective voice with which to challenge the systems and processes and deliver the benefits and opportunities that living in an increasingly urban world can provide?

ENGAGEMENT AND PARTICIPATION

How can we ensure that our engagement and participation in processes and decision making leads to change and systems that fulfil our rights?

STRONG COMMUNITIES

How can we encourage strong linkages and relationships across established and new communities to build sustainable, prosperous and inclusive urban environments?

INCLUSIVE SPACES

How can we make well designed and accessible physical environments and spaces, equally inclusive in terms of our social interaction within our communities and across generations?

RESILIENT COMMUNITIES FOR ALL

How can our resilience strategies to mitigate against flooding, heat waves and other environmental and climate changed driven disasters be inclusive and meet our changing vulnerabilities throughout our lives?

INVESTMENT IN SOCIAL INFRASTRUCTURE

How can we ensure the role of community social infrastructure such as community centres and groups, libraries and leisure centres, in building prosperous and inclusive cities, is not underestimated?
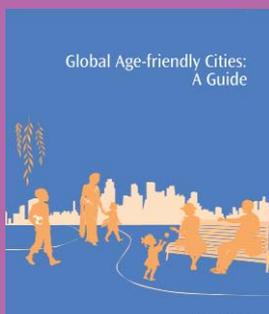
INTERVIEW WITH CURRENT AND PAST WHO OFFICERS

Alexandre Kalache, President, International Longevity Centre Brazil
Megumi Kano, Technical Officer, Urban Health Metrics, WHO
Louise Plouffe, Senior Technical Officer, Ageing and Life Course Programme, WHO
Lisa Warth , Co-ordinator, Global Network of Age-Friendly Cities and Communities, WHO

To support Governments in developing and strengthening health and social policies in an ageing world, the World Health Organization (WHO) released a Policy Framework on Active Ageing in 2002. Since the release of the Active Ageing Framework, it has been used by WHO as a basis for developing guidelines to make front-line primary health care services more "age-friendly" – that is, more accessible and responsive to the specific needs of older persons. WHO is now turning its attention to the environmental and social factors that contribute to active ageing in urban settings. The aim of the WHO Global Age-Friendly Cities project is to engage cities in several countries to make their communities more age-friendly.

The WHO published 'Global Age Friendly Cities: A Guide' in 2007 – what is an age-friendly city and how was the definition developed? How can cities use the framework successfully?

An age-friendly city is a fully accessible and inclusive urban setting that promotes active ageing by providing opportunities for health, participation, life-long learning and security for people as they age.   The WHO concept is different from some of the other elder-friendly initiatives in that it includes the social environment and community services as well as the built environment. The term 'age-friendly' was coined by Dr. Alexandre Kalache, then Director of the WHO Lifecourse and Ageing Department, to signify that an environment that is first friendly to older persons is also friendly to persons of all ages.

To support cities in using the framework locally, WHO developed a Global Network of Age Friendly Cities and Communities and a set of basic guidelines to engage in age-friendly urban development and join the network. These guidelines were based on the basic ideas of an age-friendly city developed by WHO, as well as by the experience of communities that had engaged early in the initiative and were having success. To be successful, a city would need to obtain engagement from the Mayor or City Council; to involve older persons as full partners throughout the process; establish a steering group including different sectors; consult with older persons and others in the community to determine the city's current assets and barriers in several areas; and create an action plan to address gaps and indicators to measure progress.

From the network of cities working towards a shared aim of age friendly communities, what examples of success and positive results have you seen? Which cities do you feel provide a strong model and benchmark for others?

Currently, over 250 cities and communities are engaged in the WHO Global Network of Age-friendly Cities and Communities, and many more are working to become more age-friendly. There are many examples of positive action in a variety of areas in several cities. Implementation evaluation studies have shown that the age-friendly initiative fosters effective-cross-sectoral leading to information-sharing, identifying service gaps and developing joint actions that would not have occurred had sectors continued to work in isolation. Another benefit in some cities is the mainstreaming of an aging/older persons perspective in municipal planning. Few studies are yet available on the impact of age-friendly interventions; however, a controlled study in Ireland showed that a peer volunteer visiting programme reduced loneliness among older persons more effectively than community services visits.

Age Friendly New York City is a strong model, in light of the scope and diversity of actions taken, both across the city, within local neighbourhoods and among employers and businesses. The initiative has disseminated a lot of information about the activities, which serve as a beacon for other cities.

An ageing population is often seen as a problem to solve. Through your experience of age friendly cities, what are the best ways for city level governments to reshape our cities to better challenge ageist discrimination and respect and support the fulfillment of rights in older age?

The best ways are to engage older persons as full partners along with other persons and groups in the city, in identifying problems and barriers, developing solutions that work to their benefit and to that of others and in being advocates for their implementation and continuation. Enhancing public and provider awareness about ageist biases in urban design (e.g., traffic light crossing times), and in services helps to change attitudes and behaviours. Having an aging/older persons perspective as an integral feature of municipal planning keeps a focus on age-inclusion in all areas .

After 7 years of Age Friendly Cities and Communities, how do you see the programme evolving in the future?

We expect to see scale-up and strengthening in the long-standing city programmes, based on the accumulation of knowledge, experience and evidence of impact. WHO is currently developing guidance on the use of indicators for measuring outcomes, equity and impact to build a foundation of evidence. More cities and communities in low and middle income countries are also expected to engage as they feel the growing pressures of urbanization and population ageing. Furthermore, in the coming years, we foresee opportunities for Age-friendly Cities and Communities to contribute independently, or synergistically with other city-based initiatives (e.g. Healthy Cities, Resilient Cities, Smart Cities), toward the new global agenda on sustainable development.
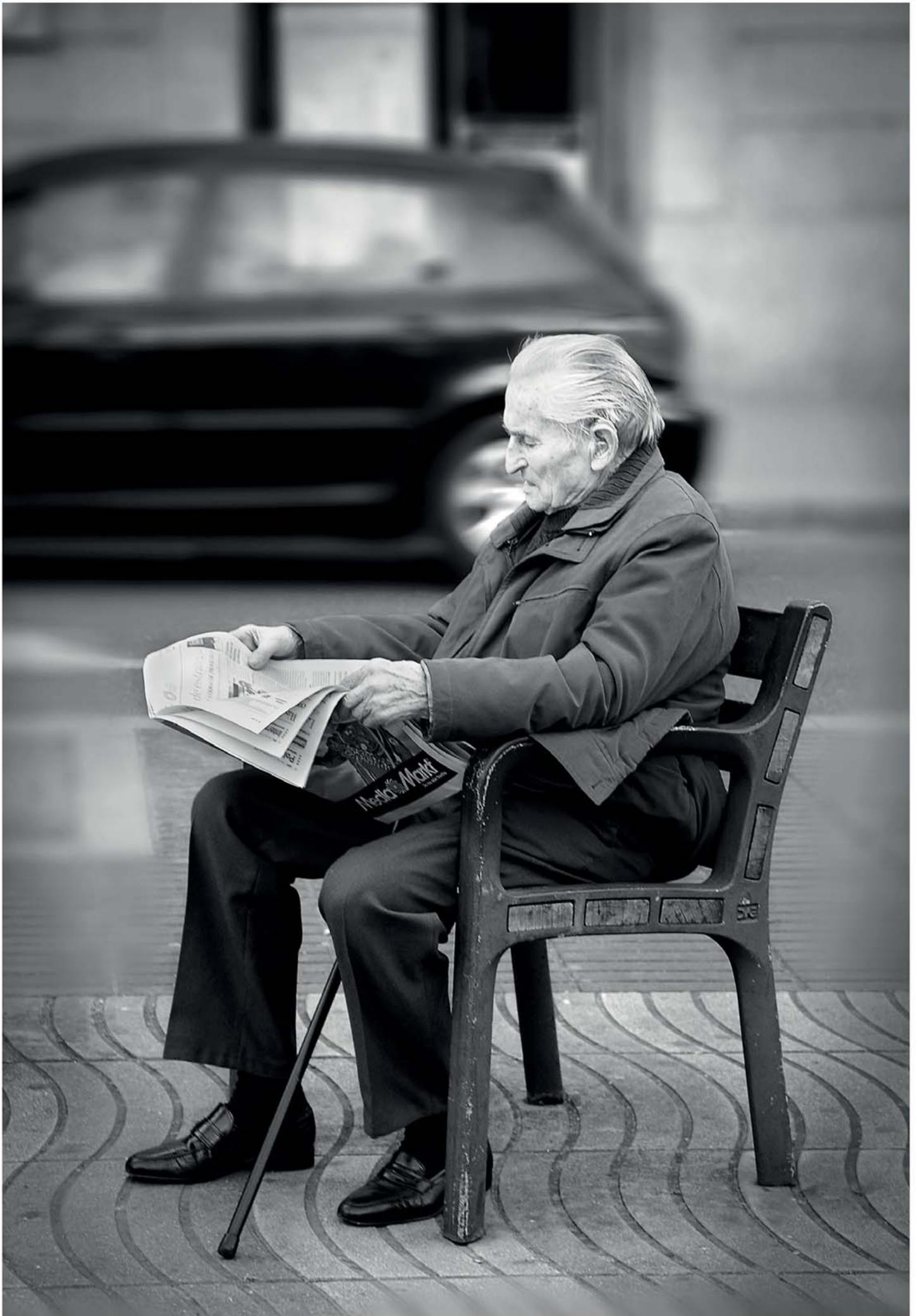
BUILT ENVIRONMENT

Written by Arup.

The physical and spatial dimension of cities is where a density and complexity of human encounters occur. People use the built environment in different manners determining many different interactions within the world around them. Age is one of the factors that transforms how we relate to the world around us. The reasons are linked to physical or to emotional changes that we experience while ageing, but also to the forms of discrimination we face as we become older.

Often, in the process of becoming older, people suffer from a reduction of their physical capacities. A reduction in the amount of time spent out-door mirrors the partial or complete impediment we encounter when doing certain physical tasks in older age. In fact, accessibility and safety in public spaces depend on the design of specific elements, on the materials and shapes used. Pedestrian traffic lights, benches and heights of the steps, surfaces quality and shelters, every element is crucial not only for the well-being of its user, but also to guarantee accessibility for all. The quality of design and maintenance of public spaces is undoubtedly one of the fundamental elements that guarantees to older people the capacity to live active lives.

Similarly, the design of housing should be conceived as adaptable to the transforming needs of ageing individuals. Besides accessibility, the design of housing for older people requires adaptability to the varying needs determined for example by different family sizes. On the other hand, affordable housing specifically designed for older people is a sector that will certainly be explored in the future.

In the UK there are already examples of studies going in this direction, such as the HAPPI report (2009), which advocates for an approach divided into design recommendations (such as communal gardens, or shared indoor spaces) and planning policies.

The characters of urban areas have an important role in building the capacity of older people to live active and fulfilled lives. Proximity, meaning distance of facilities, services and all urban resources, facilitates older people to walk everyday through the streets of the neighbourhoods in which they live. The benefit is double sided: in fact, proximity of facilities encourages both daily exercise and frequent social interactions. Also diversity of facilities and locations increases the willingness to live an out-door life, and, as a consequence, the possibilities of human encounters. Public buildings and public spaces represent social infrastructures that can be designed to enable people to practice a wide range of activities, challenging the natural loss of physical functioning and the tendency for social isolation.

Urban design is the discipline that allows architects to measure and adjust the processes described above, and to read and imagine an urban landscape where older people can fully realise their rights and benefit from the opportunities of social and out-door active life that cities offer, of a full urban life.

AGE IS ONE OF THE FACTORS THAT TRANSFORMS HOW WE RELATE TO THE WORLD AROUND US. THE REASONS ARE PARTLY LINKED TO PHYSICAL OR TO EMOTIONAL CHANGES THAT WE EXPERIENCE WHILE AGEING BUT ALSO THE FAILURE OF WELL DESIGNED SPACES TO RESPOND TO OUR NEEDS

HOW CAN ARCHITECTS DESIGN ENABLING CITIES?

GUARANTEE ACCESSIBILITY

Our physical functioning can reduce with age. The shapes, elements and materials, of the surrounding environment generate different levels of accessibility to public spaces. Cities should be designed for different human capacities: quality of urban design and its maintenance are fundamental issues to be assessed and improved in ageing cities. This is particularly true for the detailed design of transportation, such as vehicles, but also stations and stops, benches and shelters, vertical and horizontal signs.

PROXIMITY

The city for oldre people is smaller than the one of other citizens. Therefore, the proximity of places and services that they use is fundamental to everyday life. Moreover, proximity generates synergies among functions, spaces and places and enhances the possibility of out-door activities.

DIVERSITY

Diversity is a prerequisite to generate lively places. It generally refers to the variety of socio-economic groups of people in an urban environment, but it can also refer to a mix of functions or to a complex and changing urban landscape. Potentially socially isolated groups such as older people, can benefit from being surrounded by a socially and environmentally diverse urban landscape, which offers many possibilities of interaction. Monetary and social transactions coexist in the streets of urban neighbourhoods, and for older people this character is fundamental to live a full and active daily life.

ENABLING SOCIAL INFRASTRUCTURES

Old age can lead to difficulty iengaging in new or unconventional activities. However, the environment in which we live can challenge this. When designing out-door and in-door social infrastructures and public buildings, architects and urban designers can imagine them as environments that enable people to practice activities such as interacting, playing, relaxing, walking, seating, or sunbathing.

SAFE AND SECURE PUBLIC SPACES

While safety is a feature of the space that can be obtained through proper design, security is a perception that can be influenced by design. Feeling safe and secure affects people willingness to move and use public spaces and green areas. Thus, they are both fundamental features to encourage older people's independence, physical health, social integration, and emotional well-being.

AFFORDABLE AND ADAPTABLE HOUSING

Human needs change throughout life cycles. While ageing, we experience physical and emotional transformations, which produce different expectations on our environments. Thus, we need to live in houses that can adapt to these changes in terms of size, space organization, and functions. In addition, the economic, social and health related living conditions of older people implies the necessity for cities to plan specific provisions of affordable housing to meet our needs in older age. In fact, the facilities needed, the shared and individual spaces requirements change according to age.

INTERVIEW WITH RICKY BURDETT
Professor and Director of LSECities and the Urban Age Programme, London School of Economics and Political Science

Ricky Burdett is Professor of Urban Studies, and director of LSE Cities and the Urban Age Programme. He is currently a Visiting Professor in Urban Planning and Design at the Graduate School of Design, Harvard University as well as a member of the UK Government's Independent Airports Commission and a member of Council of the Royal College of Art in London. Professor Burdett was Global Distinguished Professor at New York University from 2010 – 2014. He has been involved in regeneration projects across Europe and was Chief Adviser on Architecture and Urbanism for the London 2012 Olympics and architectural adviser to the Mayor of London from 2001 to 2006. He is a judge in the Rockefeller Foundation's 100 Resilient Cities initiative and is a member of the Hurricane Sandy Regional Planning and Design Competition organised by US Secretary of Housing and Urban Development. Professor Burdett was also a member of the Urban Task Force which produced a major report for the UK government on the future of English cities. He is co-editor of The Endless City (2007), Living in the Endless City (2011) and Transforming Urban Economies (2013) and editor of Innovation in Europe's Cities (2015).

The European population is ageing; one of Europe's next challenge and urgencies, to which governments will have to respond, is that by 2030 one person out of three will be over 60. As stated in the LSECities webpage, since 2005, the Urban Age Programme is focussing on 'how the design of cities impacts their society, culture and environment'. Why cities can be considered crucial in the process of adaptation to an ageing society?

Stimulation, arousal and engagement are fundamental psychological elements that contribute to human well-being. The shape of our homes, streets, sqaures and neighbourhoods affects the delicate balance between how people intercat (or not) and the their ability to feel part of (or excluded from) family, networks and society. These connections matter for all social groups, but even more so for the elderly.

As one's world closes in and networks shrink, the ability to engage with the external world - in a safe and accessible way – become even more important. Television in a lonely room is often the only option. Traditional urban form and social practices in very different regions of the world remind us that ageing populations can be fuly integrated in the dynamics of collective life.

Places to sit and watch the world go by, to snatch a conversation, to walk at slow pace, to take part in the 'struscio', to play boulle with old friends - are elemental components of the urban life which the design professions have lost the ability to provide. Rediscovering these fragile connections is, for me, a major challenge for the next generation of urbanists who grapple with these questions anywhere in the world.

From the network of cities in which the LSECities programme has worked, and through your professional experience, can you mention successful examples of resiliency and adaptation to the process of ageing that was developed these cities until now? Which cities do you feel can provide a strong model and benchmark for others?

Expanding the argument above, at LSE Cities have found that density, mixity and accessibilty are the key spatial ingredients that can contibute to making cities more socially sustainable, reslient and liveable. One of the densest and most vibrant conurbations in the world, Hong Kong stands out as a city which engages its ageing population – on the streets, in the markets, in the parks - who benefit from a long life expectancy. But, the same city has one of the highest suicide rates in the world for over 65-year-olds, amongsts those elderly residents who move to soulless new towns with lack the stimulation and excitement of messier, less formal neighbourhoods like Kowloon. Finding the right balance between service provision, spatial connection and sense of purpose for all members of urban society – and not just the elderly - is where city leaders, urban and health policymakers, and designers need to focus as cities become larger and more complex.

An ageing population is often seen as a problem to solve. What are the best ways for city level governments to reshape our cities to better challenge ageist discrimination and respect and support the fulfilment of rights in older age?

After the recent economic crisis, many local governments have looked to seniors as part of the solution. While national governments frequently focus on the challenges of financing generous health and pension benefits when dependency ratios are rising, cities see opportunity. It is this reframing of vulnerable individuals as valuable resources rather than burdens on society that best challenges ageism. Examples include transferring a wealth of knowledge to help jobless youth access the labour market through old-to-young mentorship or programmes where seniors help co-design smarter medical care.

Recently, Barcelona was rewarded a prize for the Bloomberg Philanthropies' 2014 Mayors Challenge, for envisioning the project of a social media network to support a growing number of senior citizens. How do you see European cities designing their ageing society in the future?

The Mayors Challenge, of which I was a jury member, highlighted a desire across diverse European cities to include the elderly as active members of society. The social network Barcelona aims to build will strengthen connections both within, but also between their ageing population and the rest of the city. Successful future city design will likely extend this idea, ensuring the value of the elderly doesn't diminish with age. As more fiscal and decision power is devolved to cities, it is possible some cities will experiment with increasing the retirement age if supported locally.

National governments are not well-equipped and are often unable to respond to these local challenges. City governments, however, are trying to turn areas of weakness into strengths by building connections. Good city design will ensure connection between the elderly and the rest of society is significant enough to render the measure of percentage of people over 60 irrelevant.

MOBILITY

Written by Systematica.

Ageing populations and urbanisation will definitely represent key challenges for this century and to this regard, mobility and all related transport issues are deemed vital aspects influencing active ageing and ensuring age-friendly cities. Mobility is a very important aspect of the quality of life for older people and current patterns of mobility in ageing populations are relatively diverse and thus give diverse consequences for mobility policy and the spatial design of our cities. Moreover, older people are a heterogeneous group (gender, age, ethnicity, culture, lived experience). From the analysis of the current situation in major European cities, it emerges that older people typically make less journeys, use less private cars and more public transport (tram and buses in particular) and walk more; to this end, the typical walking speed as well as the average length of walking trips are lower than younger people's patterns.

Due to the complexity of the transport dimension and the related wide range of aspects to consider in order to foster inclusive, safe, accessible and well connected age-friendly cities, specific measures and dedicated actions aimed at facilitating the mobility of older people are to be analysed and set out at planning level, with an effective interaction between urban planning and transport planning and a specific focus on urban districts with high density of older residents.

The urban environment has to be safe, free from physical obstructions; roads need to be well-designed, consistent, well equipped with specific physical structures as well as tailored traffic signals. To this end, well-conceived and efficient traffic management measures (traffic controlling, traffic flow optimization and traffic information) enable a safer urban environment

for pedestrian, making walking an effective and attractive mode of travel.

Public transport needs to be attractive also for older people (design, lighting and information systems of stops) and available through an adequate level of accessibility with proper distribution of step-free stops and stations in relation to specific public transport routes and key points of interests. Public transport vehicles must be adaptable and designed to respond to older people's needs as far as accessibility (low floor buses, raised platforms), safety on boarding and disembarking, seating, signage and information and comfort on board.

Lastly, technology and all smart mobility measures can definitely support the mobility of the older population, in particular when considering future trends and the very likely higher level of familiarity of future elder people with digital and other innovative tools. Apps for smart mobility, sharing mobility, e-ticketing and smart payment, real time and multi-modal info-mobility and journey planning tools as well as the envisaged widespread use of connected car platform (self-driving cars) would open up very interesting mobility opportunities for an ageing population.

Urban planning and transport planning must be effectively integrated to adequately respond to the actual mobility needs of an ageing population. The structure of the road grid and the distribution of points of access to available public transport systems should be related to residential densities and the location of main urban functions relevant for specific communities.

THE URBAN ENVIRONMENT HAS TO BE SAFE, FREE FROM PHYSICAL OBSTRUCTIONS; ROADS NEED TO BE WELL-DESIGNED, CONSISTENT, WELL EQUIPPED WITH SPECIFIC PHYSICAL STRUCTURES AS WELL AS TAILORED TRAFFIC SIGNALS.

HOW CAN MOBILITY GRANT SOCIAL INCLUSION?

INTEGRATED PLANNING

Urban planning and transport planning must be effectively integrated to adequately respond to the actual mobility needs of an ageing population. The structure of the road grid and the distribution of points of access to available public transport systems should be related to residential densities and the location of main urban functions relevant for specific communities.

IMPROVING WALKABILITY

Walking represents a crucial way of moving across cities for older people. As a consequence, a safer and in general pedestrian-friendly urban road environment must be ensured for the sustainable age-friendly development of cities. The urban environment must be safe, regular, well designed and connected, free from physical barriers. Integration and road network density increase the level of pedestrian accessibility.

DELIVERING PUBLIC TRANSPORT

Public transport is a preferred mode of transport for older populations and therefore a key factor influencing active ageing. Public transport needs to be attractive, safe and comfortable. Permeability and Public Transport stops density ensure a general reduction of walking distances while public transport vehicles must be adaptable and specifically designed to respond to oldre people's needs.

MANAGING TRAFFIC

Traffic management systems consist of effective actions to ensure a safer and, in general terms, pedestrian-friendly urban road environment. They include traffic controlling, traffic flow optimization and traffic information systems. The system must be integrated, dynamic (demand-responsive) and easily manageable.

ENSURING INCLUSIVENESS

Connectivity, integration and accessibility means social inclusion and equity. Mobility is as fundamental right for all population ages and a well-planned, multi-modal and efficient transport system supports social connections, delivers proper means to respond to daily needs, and minimizes social isolation for older people.

PROVIDING TECHNOLOGY

Smart mobility measures and technology can help the mobility of older people, with particular regard to future older populations for a more efficient use of current and future infrastructural assets. The delivery of a wide range of digital tools and devices, enabling greater awareness of available transport solutions, can trigger behavioural change towards more sustainable and effective choices of mobility for age-friendly cities.

INTERVIEW WITH GIMMI TROMBETTA
Country Division Lead Mobility, Siemens

Gimmi Trombetta is the Chief of the Mobility Division at Siemens Italia and Project Director for Expo 2015. Graduated in Information Technologies at Pisa University, in 1987 he starts working at Siemens S. p. A. and from 1996 he works in the field of human-computer interaction, of the supervision systems and computerization, and in 2000 he becomes the responsible for a new department, named Automation and Drives, in the Headquarters of Nuremberg. In 2006 he has the responsibility for the installation division Industry Solutions for the key in hand solutions in different industrial sectors, in infrastructures and logistics. He is also President of the Siemens Water Technology S.p.A., CEO of VAI Ingdesi Automation S. r. l. and TAU Controllo Processi S. p. A., and Deputy President of Assistal Association. In 2011, with the emergence of the sector Infrastructures & Cities, he becomes responsible for the division Rail Systems and Mobility & Logistics.

The UN's Department of Economic and Social Affairs states that "population ageing is unprecedented, a process without parallel in the history of humanity". To this regard, transport, including accessible and well-designed transport systems, represents a key factor influencing active ageing. Since Siemens is one of the worldwide leading suppliers of integrated mobility solutions for both urban and interurban areas, which are the most relevant factors deemed crucial on designing more age-friendly transport systems/vehicles, with particular respect to safety, accessibility and comfort?

An efficient transport system must be adaptable to the needs of all users it serves. It must therefore be planned according to the typology of paths, the flow of passengers and its related changeable profile. A new and unprecedented element consists in the fact that an efficient transport system must also respond to an ageing population requiring specific exigencies, among which the most important is Accessibility.

Accessibility to transport system for elderly people can be granted through the provision of a transport infrastructure capable to facilitate the trips and hence composed of step-free stations, and auxiliary and comfortable vehicles. The need for ageing-friendly transport systems is becoming more and more evident: the increasing demand of journey by elderly people, either for therapeutic and leisure reasons, must be adequately satisfied. Siemens' proposal Ultra Low Floor (ULF), installed in Wien in rail and urban rail sectors, aims at ensuring an easier and safer access to vehicles also for the non self-sufficient travellers. Another Siemens' proposal is Desiro, thought for the regional railway lines and capable to offer the possibility for set up dedicated areas to elderly people and any other group of non self-sufficient travellers; for instance: restrooms with dedicated space for wheel chairs.

Alongside an increased reliance on public transport, different studies on ageing urban trends indicate that walking represents a crucial way of moving across cities for elderly people. Based on Siemen's wide range of solutions related to vehicular traffic management (traffic controlling, traffic flow optimization and traffic information), what are in your opinion the most effective actions and measures to implement in order to ensure a safer and in general pedestrian-friendly urban road environment?

A sound and widespread transport system can influence positively vehicular traffic. Nevertheless, traffic management (traffic controlling, traffic flow optimisation and traffic information) must be thought in order to be fully integrated within the provided service. The information data are usually collected from various components by a central unit that elaborates them to eventually communicate on time the presence of works or hindrances affecting the transport system functioning. The controlling system has to be dynamic and easily manageable, in case of temporary needs and according to the real-time monitoring operations. Nowadays web is helping very much in setting efficient systems of data collection and control, reducing also the costs of maintenance and the time needed for getting real-time information.

A significant example is the city of Berlin, where Siemens has realised a management system of public transport service that integrates perfectly the various traffic components, including also the scheduled departures and arrivals at the airports serving the city. Another exemplar case is the city of London, where the 'Congestion Charge Area' has limited the access of private vehicles to city centre, permitting also the improvement of the public transport supply and the pedestrianisation of spaces formerly dedicated to the transit of vehicles. The realisation of the 'Congestion Charge Area' has inevitably entailed the installation of an important CCTV infrastructure.

An ageing population is often seen as a problem to solve. Through your experience of age friendly cities, what are the best ways for city level governments to reshape our cities to better challenge transport needs of elderly people in the daily life, as well as adequately support the fulfillment of their mobility rights?

Integration and an efficient interconnection among various modes of transport represent the nodal point for an usable transport service. Elderly users in particular must move freely, using the different modes of transport resulting better interconnected among each other. A prompt and intuitive real-time information on transport (Journey-Planner) is another crucial element.
Finally the simplification of the ticketing system (e-Ticketing), with just one ticket for homogenous areas and with reduced fares is another fundamental aspect that must be considered for better challenging transport needs of elderly people in the daily life.

The Urban Sustainable Mobility Plan (PUMS) of Milan has been recently published. As part of the 4 general objectives, "equity, safety and social inclusion", together with the specific thematic fields "city without barriers" and "safety, walking and car-restricted areas" are considered crucial and present a tight relation with mobility issues of ageing cities. Based on your international experience and Siemens' careful evaluation of specific needs of more fragile user categories when designing transport systems, what is your opinion on the effectiveness of such measures and which additional strategy might be considered useful?

When transport systems reach high levels of reliability, supply and capillarity on territory, it must also consider the target to provide passengers with high standards of comfort. The parameters that play an important role in comfort's creation are numerous.
A transport network is comfortable when diffused, continuous and interconnected; transport vehicles are comfortable when vibrations and noise are low, internal layout provides adaptable and large spaces, seats are designed according to ergonomics, lighting system is properly designed and a service of acoustic announcements is provided onboard. Another specific need of more fragile user categories to bear in mind when designing transport systems is safety.

Siemens at this regard offers a service of electric buses that, beside reducing the impact of transport system on the environment, are constantly monitored and through a fully operating system of CCTV can grant the needed safety to all boarder and alighter passengers.

DIGITAL ENVIRONMENT

Written by Arup.

New technologies are being created to improve the lives of older people and to support health systems. Wearable technologies are extending the time someone with early stage dementia can stay in their home, computer games are exercising cognitive skills prone to deterioration in older age, and online platforms are coordinating transportation, social care, food delivery, jobs, and training for the older people – to name a few areas.

The technologies being developed today range from high tech 3D printers, robots, driverless cars, ingestible sensors, to relatively low tech games, communication platforms, and cheap sensors. Fundamentally, they are being used to do two things – to provide information and to connect people.

Advances in digital sensing, data storage and processing, have created an information-rich environment where the data is as diverse as it is 'big'. Data sets ranging from the location of buses, to the energy consumption of devices, demand for skills, and public opinions, can provide the basis for new city services for older people. The increasing array of digital data can also inform the planning and design of our cities. Maps can be generated to show the accessibility of public transport, spaces to sit, and highly polluted areas of the city. 3D visualisations can test designs with those that will be living in them. Example WHO's Age Friendly Cities index – providing how data can help cities understand their age friendliness.

The interconnectedness of data and 'things' through processing, actuation, digital platforms and social media is enabling new forms of communication. Systems can automatically adjust to demand, machines can carry out daily tasks, people can share thoughts and resources across distance and time.

However, technology can be a double-edged sword. While it can help, it can also exclude older people, preventing them from participating in the city and enhancing a feeling of being cut off and out of touch. As public and private services move to become 'digital by default', there is a risk of isolating older people, who are often less digitally connected or literate. There are also other risks related to data privacy and security. For example, the pervasiveness of technology in some of the telehealth initiatives can make people can feel invaded in their homes. Similarly, the collection of personal data to support services can dilute an individual's sense of control. Technology needs to be carefully designed with the individual in mind. The security and quality control advantages of "closed" systems needs to be balanced with potentially more innovative "open" systems.

With careful design, technology can be a powerful tool to help shape our cities to become more age-friendly. Careful means designing technology alongside other parts of the city, including the design of its physical, economic and social infrastructure and space. Designing at the city scale brings benefits. Technology can relate city systems to each other – such as bringing together different modes of transport to help someone plan their journey home from hospital. Data can be contextualised as part of a person's broader life patterns in a city – for example, depression or feelings of loneliness can be recognised in the context of poor access to transport, public amenities, or social activities.

HOWEVER, TECHNOLOGY CAN BE A DOUBLE-EDGED SWORD. WHILE IT CAN HELP, IT CAN ALSO EXCLUDE OLDER PEOPLE, PREVENTING THEM FROM PARTICIPATING IN THE CITY AND ENHANCING A FEELING OF BEING CUT OFF AND OUT OF TOUCH.

HOW CAN THE DIGITAL ENVIRONMENT BE ACCESSIBLE?

STAYING MOBILE

Technology is helping to provide 'mobility on demand' in cities – filling gaps where physical transport infrastructure does not provide accessibility for all. Staying mobile is linked to staying healthy (active travel) and socially connected to the city – particularly where ageing populations live in more peripheral parts.

STAYING WORKING

People today aged between 30 and 50 are not saving enough to live comfortable in retirement. In addition, the rising cost of care in older age is a pressure. Many people might choose to continue working. Others will choose to remain actively involved in employment for non-economic reasons – to remain productive, retain sense of capacity - and some people will want to continue education or training.

STAYING HEALTHY

A range of technologies provide personalised in-home health and social care. For example telemedicine enables clinicians to connect with their patients while they are at home, via videoconferencing and internet-based services. Sensor-based technologies are also helping older people to remain in the home e.g. alerts to remind people to take their medications; wearables and apps to monitor the movements of demetria patients or track "wellness" to predict health problems. In addition to physical healthcare – technology is helping to reinforce social / care networks and to stay mentally active.

STAYING CONNECTED

Staying socially connected: many older adults spend significant time alone or live in locations that are socially isolated. The internet and social media can provide a virtual community space – "the fastest growing age group on Facebook are older adults". Staying digitally connected: there are initiatives to train older people in technology, and to simplify technology itself. Staying politically connected: there is a significantly higher proportion of election turnout among older people. Technology can help give older people a louder voice.

STAYING HOUSED

Digital platforms (similar to Air BnB) could help create a network of residences for older people - in central urban plots with good transport links and with a focus on shared spaces.

TECHNOLOGY PROVIDING INFORMATION FOR AGE-FRIENDLY CITY

Technology can help understand the needs of an ageing population (the dynamics of human behaviour) and to understand the city. Whether designing a plot of land, an institution or an entire city – pen and paper has been complemented by electronic data collection, geo-surveys, and satellite mapping and visualisation software. We have better evidence now – where data is increasingly available about all aspects of our lives – to inform design and study the impact of different initiatives. Technology can help planners and city practitioners adopt a systems approach to understanding and responding the complexity of a city.

INTERVIEW WITH CARLO RATTI

Professor and Director of SENSEable City Lab, MIT | Principal, Carlo Ratti Associati

An architect and engineer by training, Carlo Ratti practices in Italy and teaches at the Massachusetts Institute of Technology, where he directs the Senseable City Lab. He graduated from the Politecnico di Torino and the École Nationale des Ponts et Chaussées in Paris, and later earned his MPhil and PhD at the University of Cambridge, UK. Carlo holds several patents and has co-authored over 250 publications. His work has been exhibited worldwide at venues such as the Venice Biennale, the Design Museum Barcelona, the Science Museum in London, GAFTA in San Francisco, MoMA in New York and MAXXI in Rome. Carlo has been a presenter at TED (in 2011), program director at the Strelka Institute for Media, Architecture and Design in Moscow, curator of the '2012 BMW Guggenheim Pavilion' in Berlin, and was named 'Inaugural Innovator in Residence' by the Queensland Government. The Italian Minister of Culture also named Carlo as a member of the Italian Design Council - an advisory board to the Italian Government that includes 25 leaders of design in Italy. He is currently serving as a member of the World Economic Forum 'Global Agenda Council for Urban Management' and is curator of the 'Future Food District' pavilion for the 2015 World Expo in Milan.

The global population is aging faster than ever. As stated in the MIT's Age Lab webpage, "Longevity requires new thinking". How do you think the aging issue will affect the design approach?

'Grey is the new green, especially for the world of design; we need to look at how to best design "supportive environments" for an aging population. Think about a city that interacts with people and helps them in meeting needs and achieving results, especially at a later age. Also, we need to anticipate these changes - as Cedric Price said: "Architecture must move from the curative to the preventative"

In general, I think we are on the right path: in the past, elderly people had difficulties to learn how to use personal electronics, but today an iPhone is accessible to almost everyone. In the age of ubiquitous computing we'll be able to overthrow the digital divide, giving the elderly the chance to interface seamlessly with the new cyber-physical world, using its benefits and possibilities. It is about new technologies that can be used without looking at a manual.

Our design work goes in that direction: for instance, our Digital Water Pavillion, designed for Zaragoza Expo 2008, is an interactive and reconfigurable space that can be used by 5 to 95 year-old people without any instructions!

How is digital technology helping our cities to be more age friendly (Can you mention any successful examples that were recently developed)?

Think about the new possibilities developed in the health and assistance field. A while back, if you needed monitoring your only option was to go to a hospital or a nursing home – today you can stay in a familiar environment and still be checked. It is as if a seamless, moveable hospital were coming to you.

Also, mobility for the elderly is a very important topic – the possibility to move in the urban space is fundamental for independence. I think there is an upcoming revolution thanks to driverless car that could have a great impact here.

Which new digital trends could help our urban elderly populations and which types of digital technology should designers and city planners be focusing on now to meet the needs of the aging population?

I think is very important to focus on sensing, and how it can be seamlessly integrated in our familiar environment. A smart toilet could be the first step: our toilet can become little at-home analysis lab. This can be a useful instrument for the elderly. We are working on these topics as part of our Underworld project:

http://edition.cnn.com/2014/10/30/health/smart-sewage-to-detect-disease-outbreaks/

What will the digital urban lifestyle look like for the elderly population in ten years' time and how will this affect the physical shape of our European cities?

I think that the issue is not lifestyle but attitude. English science fiction writer Arthur C. Clarke wrote that: "When a distinguished but elderly scientist states that something is possible, he is almost certainly right; when he states that something is impossible, he is probably wrong." Curing disillusionment that comes to all of us with age - that should be our main focus! So that we can continue to dream, even at a later age…

Glossary

Age pyramids. Diagrams that illustrate age distribution of a population. The youngest are located at the base of the pyramid while the oldest at the apex.

At Risk of poverty. At risk of poverty or social exclusion, abbreviated as AROPE, refers to the situation of people either at risk of poverty, or severely materially deprived or living in a household with a very low work intensity. The AROPE rate, the share of the total population, which is at risk of poverty or social exclusion, is the headline indicator to monitor the EU 2020 Strategy poverty target (Eurostat, 2014. Glossary. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:At_risk_of_poverty_or_social_exclusion_(AROPE)).

Congestion. Traffic congestion is a condition on road networks that occurs as use increases, and is characterized by slower speeds, longer trip times, and increased vehicular queuing. The most common example is the physical use of roads by vehicles. When traffic demand is great enough that the interaction between vehicles slows the speed of the traffic stream, this results in some congestion.

Core cities. The Urban audit uses definition (c) and delineates the "core city" along political and administrative lines. Due to the varied structures of local governments, this concept is not always directly comparable between countries (Eurostat, 2014. Glossary. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:City).

Cost of living. Measured through the Consumer Price Plus Rent Index is a relative indicator of consumer goods price, including groceries, restaurants, transportation, utilities and rent. CPI Index doesn't include accommodation expenses such as rent or mortgage. If a city has a CPI index of 120, it means Numbeo estimates it is 20% more expensive than New York (Numbeo website, 2009-2015. Available at: http://www.numbeo.com/cost-of-living/cpi_explained.jsp).

Cyclability Index. Cyclability Index measures how much cities are cycle-friendly. The index is calculated on the basis of quantitative parameters, taking into account three main variables: 1) cycling modal share; 2) cycle network extent, and; 3) bike sharing provision.

Effective retirement age. The average effective age of retirement is defined as the average age of exit from the labour force during a 5-year period. Labour force (net) exits are estimated by taking the difference in the participation rate for each 5-year age group (40 and over) at the beginning of the period and the rate for the corresponding age group aged 5-years older at the end of the period (OECD, 2013. Pensions at a Glance. Available at: http://www.oecd-ilibrary.org/sites/soc_glance-2008-en/05/06/index.html?itemId=/content/chapter/soc_glance-2008-14-en).

Employment rate of people aged 55-64. The employment rate is the percentage of employed persons in relation to the comparable total population. For the overall employment rate, the comparison is made with the population of working-age; but employment rates can also be calculated for a particular age group and/or gender in a specific geographical area, for example the males of age 15-24 employed versus total in one European Union (EU) Member State (Eurostat, 2014. Glossary. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Employment_rate&oldid=191018).

Healthy Life Years. The Healthy Life Years (HLY) indicator (also called disability-free life expectancy) measures the number of remaining years that a person of a certain age is still supposed to live without disability. Healthy Life Years is a solid indicator to monitor health as a productivity/economic factor. Healthy Life Years introduces the concept of quality of life. It is used to distinguish between years of life free of any activity limitation and years experienced with at least one activity limitation. The emphasis is not exclusively on the length of life, as is the case for life expectancy, but also on the quality of life (European Commission, http://ec.europa.eu/health/indicators/healthy_life_years/hly_en.htm).

Internet penetration. The relationship between the number of Internet users in each country and its demographic data (IGI Global, http://www.igi-global.com/dictionary/internet-penetration/15438).

Isochronal Maps. Isochronal Maps display the variations in time for reaching certain areas by a defined mode of mobility. The Isochronal maps herein showed take into consideration the average walking travel speed of older people (around 3 km/h).

Legal retirement age. The official age corresponds to the age at which a pension can be received irrespective of whether a worker has a long insurance record of years of contributions (OECD, 2013. Pensions at a Glance. Available at: http://www.oecd-ilibrary.org/sites/soc_glance-2008-en/05/06/index.html?itemId=/content/chapter/soc_glance-2008-14-en).

Life Expectancy. Life expectancy indicates the number of years a person would live if prevailing patterns of mortality at the time of calculation were to stay the same throughout its life (Eurostat website. Available at: http://ec.europa.eu/health/indicators/healthy_life_years/hly_en.htm)

Median age. The median age of a population is that age that divides a population into two groups of the same size, such that half of the population is younger than this age, and the other half-older (UN World Population Prospects 1950-2050. Available at: http://www.un.org/esa/population/publications/worldageing19502050/pdf/95annexi.pdf).

Net pension wealth. Net pension wealth is the present value of the flow of pension benefits, taking account of the taxes and social security contributions that retirees have to pay on their pensions. It is affected by life expectancy and by the age at which people take their pensions, as well by as indexation rules. This indicator is measured as a multiple of annual gross earnings by gender (OECD, 2013. Pensions at a glance. Available at: http://www.oecd-ilibrary.org/sites/soc_glance-2008-en/05/06/index.html?itemId=/content/chapter/soc_glance-2008-14-en).

NIL. The Local Identity Nuclei (NIL) represent areas defined as neighbourhoods of Milan, where it is possible to recognise historic or new neighbourhoods, with different features. They were introduced by the PGT as boundaries connected one with each other by infrastructures and mobility services. They are systems of urban dynamism, whose local commercial activities (gardens, facilities, open spaces) can be observed and planned.

NUTS. The Nomenclature of Territorial Units for Statistics (NUTS) was established by Eurostat to provide a single uniform breakdown of territorial units for the production of regional statistics for the European Union. The NUTS-region are based on the existing national administrative subdivisions. They are divided into 3 levels: NUTS 1 from 3 to 7 million people; NUTS 2 from 800,000 to 3 million people; NUTS 3 form 150,000 to 800,000 million.

Pensions. Pensions refer to payment made to a person (or their dependants) after retirement. Pension systems vary across countries and no single model fits all. Generally, there is a mix of public and private pension provision. Public pensions are statutory, most often financed on a pay-as-you-go basis (where current contributions pay for current benefits) and managed by public institutions. Private pensions are in some cases mandatory, but more often are voluntary, funded, employment-based pension plans or individual retirement savings plans. Pensions may also be supplemented by housing wealth, personal financial wealth, and publicly provided services (OECD, 2013. Pensions at a glance. Available at: http://www.oecd-ilibrary.org/sites/soc_glance-2008-en/05/06/index.html?itemId=/content/chapter/soc_glance-2008-14-en).

Quality of living index. Mercer has designed an objective way of measuring quality of living for expatriates based on factors that people consider representative of quality of living. Once a year, Mercer conducts a quality of living study in over 380 cities worldwide based on detailed assessments and evaluations of 10 key categories and 39 criteria or factors, each having coherent weightings reflecting their relative importance (Mercer, 2007. Defyning Quality of Living. Mercer Human Resource Consulting LLC. Available at: http://www.imercer.com/uploads/common/pdfs/definingqualityofliving.pdf).

Walkability Index. Walkability Index measures how much cities are pedestrian-friendly. The index is calculated on the basis of quantitative parameters, taking into account two main variables: 1) pedestrian modal share, and 2) pedestrian areas provision.

Road Injuries Ratio. Road Injuries Ratio measures how many road injuries per 100,000 inhabitants occur yearly in a city. The ratio is calculated on the basis of quantitative parameters, taking into account two main variables: 1) static number of road injuries per year; 2) total population of the city.

Smartphone penetration. The relationship between the number of smartphone users in each country and its demographic data.

Unsafety perception. DG REGIO conducts a survey every three years to measure perception of quality of life in cities. A number of issues such as employment, environment, housing, transport, culture, city services and immigration are addressed by this survey. To define the perception of unsafety of each city, we considered the question 'You feel safe in this city: somewhat disagree' (Eurostat website. http://ec.europa.eu/eurostat/web/cities/perception-surveys).

Wi-fi public hotspots. Wireless (or wi-fi) hotspots are essentially wireless access points providing network and/or Internet access to mobile devices like your laptop or smartphone, typically in public locations.

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