TOWARDS THE ALL-AGE-FRIENDLY CITY

Working Paper 1 of the Bristol All-Age-Friendly City Group
The All-Age-Friendly City project, carried out in Spring-Summer 2014, emerged from a desire to imagine the future city from the perspectives of those people – children and older adults – who are too often overlooked in the design and planning of cities today.

Today, reports on ‘the Smart City’ tend to make little or no mention of the wide variety of different age groups living in cities, or of the different and sometimes shared needs of a multi-generational city. This is not just an inevitable oversight that arises when working age adults design infrastructure. It is also a serious flaw in the design imagination shaping the future city: significant amounts of public expenditure go precisely to these age groups and to those institutions and services responsible for addressing the interests of children and older adults. If we want a future city that is adequate to the people living in it, therefore, designers, policy makers, developers and planners need to think carefully about all ages and stages of life.

To begin to address this issue, the All-Age–Friendly City project brought together researchers working in childhood and aging, members of local government, artists, community groups, computer scientists, developers, planners and practitioners working with children and older adults, to develop ideas about how cities might better meet the needs and interests of our oldest and youngest generations.

This first working paper builds on desk research and workshops conducted by the Graduate School of Education, University of Bristol, in collaboration with the Future Cities Catapult in Spring/Summer 2014. It outlines why designing the All-Age-Friendly city is an urgent contemporary concern, the resources that are available to us to do this, and identifies four key areas for future development:
PREFACE

· building intergenerational trust;
· encouraging encounters across generations;
· re-imagining housing; and
· creating all-age-friendly transport systems.

We are grateful to the TSB/Future Cities Catapult for funding the workshops, and to the Arts and Humanities Research Council for enabling Keri’s involvement as part of her Connected Communities Leadership Fellowship. We are also grateful to the contributors to the workshops who contributed their ideas and experience so generously.

This is the start, we hope, of a longer conversation about how we can create cities that are not just livable in terms of the technologies and infrastructure that underpin them, but that harness such infrastructure to generate experiments in humane, caring and empowered ways of life for all generations.

We look forward to continuing the discussions with others who are interested in this aspiration.

Keri Facer, Lindsey Horner, Helen Manchester
Graduate School of Education
University of Bristol
CONTRIBUTORS

The following contributed to the discussions and workshops that informed this report. All errors and omissions however, are those of the authors alone.

Project Lead for Future Cities Catapult

Caroline Twigg

Contributors

Adam Nieman, Carbon Visuals
Adrian Davis, Bristol City Council, Health and Transport
Amy Harrison, Architecture Centre
Ben Barker, Greater Bedminster Community Partnership
Caroline Holland, The Open University & Dundalk Institute of Technology, Ireland
Claire Reddington, Pervasive Media Studio
Frances Giampapa, University of Bristol, Graduate School of Education
Hannah Higginson, Watershed
Howard Baker, BBC
Ingrid Skeels, Room 13 and Playing out.
James Parkinson, Royal Institute of British Architects
Jennie Reed, Alive! Activities
Jo Cross, University of Bristol, School for Policy Studies
John Troyer, University of Bath, Dept. for Death and Society
Kirsten Cater, University of Bristol, Computer Science
Lorraine Hudson, Hudson Sustainability Consulting
Lucy O’Brien, Kinneir Dufort
Lucy Warin, Future Cities Catapult
Malcolm Johnson, University of Bristol (Emeritus), Health and Social Policy
Misa Izuhara, University of Bristol, School for Policy Studies
Patricia Res, University of Bath (MSc Student)
Penny Evans, Knowle West Media Centre
Penny Miles, University of Bristol, HARP project
Pete Bennett, University of Bristol, Computer Science
Pete Britton, Bristol City Council, Future Cities Team
Shawanda Stockfelt, University of Bristol, Graduate School of Education
Simon Hankins, Southville Community Development Association
Stephen Hewitt, Bristol City Council, Healthy Urban Team
Tim Corum, Bristol Museums and Galleries
## CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHY AN ALL-AGE-FRIENDLY CITY?</td>
<td>7</td>
</tr>
<tr>
<td>RESOURCES FOR THE IMAGINATION</td>
<td>13</td>
</tr>
<tr>
<td>SCENARIOS FOR THE FUTURE ALL-AGE-FRIENDLY CITY</td>
<td>18</td>
</tr>
<tr>
<td>ROADMAP TO THE ALL-AGE-FRIENDLY CITY</td>
<td>28</td>
</tr>
<tr>
<td>— BUILDING TRUST</td>
<td>30</td>
</tr>
<tr>
<td>— CREATING OPPORTUNITIES FOR ENCOUNTERS BETWEEN GENERATIONS</td>
<td>37</td>
</tr>
<tr>
<td>— HOUSING FOR MULTI-GENERATIONAL AND COMPLEX LIVES</td>
<td>46</td>
</tr>
<tr>
<td>— PUBLIC TRANSPORT FOR MULTI-GENERATIONAL PARTICIPATION</td>
<td>54</td>
</tr>
<tr>
<td>WHERE NEXT?</td>
<td>61</td>
</tr>
<tr>
<td>FURTHER READING</td>
<td>65</td>
</tr>
</tbody>
</table>
WHY AN ALL-AGE-FRIENDLY CITY?
WHY AN ALL-AGE-FRIENDLY CITY?

Around the world we are beginning to see the emergence of two parallel, but currently unconnected, movements – namely, the ‘Child Friendly City’ movement (led by UNICEF) and the ‘Age Friendly City’ movement (led by the World Health Organisation). These movements both aim to ensure that planners, policy makers and developers design cities that take account of the interests of age groups who are too often marginalized in current policy and design processes. They are both hugely important.

In thinking about and advocating for children and older adults separately, however, we risk ignoring the fact that these groups often live alongside each other, occupy the same public spaces, have interests and needs in common. Important opportunities may therefore be missed to create services and infrastructure that address the interests of both groups. Moreover, by treating these groups separately, we risk furthering current trends toward intergenerational tensions that have the potential to be profoundly harmful for the wellbeing of all living in our future cities.

A different approach, and one that we propose in this working paper, is to imagine future cities as ‘All-Age-Friendly Cities’ that offer services, infrastructure and spaces that not only meet shared needs, but better liberate the different talents of all ages to create greater intergenerational solidarity.

Intergenerational tensions

Stories that dominate the media today about intergenerational relationships are characterised by alarmist claims of conflict between generations. Post-crash economics and population aging combine in these accounts, to produce an almighty rift between the needs of different age groups. Commentator...

In designing for children and older adults separately we ignore the fact that they have interests and needs in common
David Rothkopf goes so far as to argue: “When the Cold war ended, we thought we were going to have a clash of civilizations. Turns out we’re having a clash of generations”\(^2\).

As fuel for this debate, we have a whole host of institutions setting up to advocate for different age groups (for example, the Intergeneration Foundation in the UK, the Centre for Intergenerational Justice in Germany). At the same time, publications mourning the decline of intergenerational solidarity, from ‘The Pinch’ to the more recent ‘Generation Rent’, make the case for the competing demands, interests and needs of young people and older adults. And indeed, there are thorny issues to address in these debates about fairness and equity across present and future generations.

In this climate of conflict, the fundamental premise of the public intergenerational contract – that the young will care for the old in old age, and that in return, the old will contribute towards and not overly extract from the next and future generations – becomes harder to sustain\(^3\).

We know, however, that this clash is not simply a feature of wider economic and demographic change but is also a consequence of the way lives are organised and lived in UK cities today, of the design of public spaces and the work of our social institutions and services – from care homes, to transport, to schooling. Over the last few decades, inter-generational interaction in public spaces has diminished and positive contact reduced\(^4\) as children and older adults alike are encouraged to live and spend time in age-segregated spaces, and as the public services that facilitate mobility throughout cities are eroded.

Addressing intergenerational conflict, therefore, is not simply an issue of macro-economics and demographics, but an issue that should be of real

\(^2\) Friedman 2011:5, cited in VanderVen and Schneider-Munoz 2012

\(^3\) Walker 2003

\(^4\) Hatton-Yeo and Watkins 2004
WHY AN ALL-AGE-FRIENDLY CITY?

Concern to architects, city planners, and the designers of city-wide services from health to energy supply.

Common Needs

This picture of intergenerational tension, however, is not supported by the research, which tends to reveal more ‘ambivalent’ relationships, as opposed to the binary ideas of conflict or cohesion, and in some cases, more in-depth longitudinal studies find instead that older adults are generally seen as particularly deserving groups as well as particularly marked upward solidarity towards older people among young people from low and middle socioeconomic groups.

In contrast to this dominant idea of competing interests, moreover, it’s worth observing that older adults, children and young people have much in common. Both age groups want access to safe public spaces and report higher levels of fear of crime. Other shared concerns include access to public transport and the provision of public space to socialise. Self-evidently, both groups are also affected by ageism; both face stereotyping that brings material negative consequences for both age groups, for example disadvantage in the workplace.

In the UK, as well, while younger and older generations are more dependent on government resources than middle generations, they are equally subject to barriers when it comes to local planning decisions and public consultation. In addition, in the UK, socioeconomically disadvantaged wards have a greater share of elderly and young residents, as people in middle-life are more likely to have the advantage of being able to move out of these areas.

Over the last few decades, inter-generational interaction in public spaces has diminished and positive contact reduced.

5 Brannen, 2003
6 Timonen et al 2013
8 Topham 2013; Better transport campaign, undated
9 Joseph Rowntree Foundation, undated
10 Sweiry and Willitts 2012
11 Age UK 2011, Birdwell and Bani 2014
12 Pain 2005
Indeed, rather than there being common concerns that divide generations, it is clear that many in older and younger age groups are united by issues that exist across generations - the relative wealth, social networks, ethnicity and gender of individuals all play their role in shaping life experiences of both children and older adults. Socio-economic disadvantage is a concern in common across all age groups, and city strategies to address this as a primary issue are likely to be of benefit across the generations.

Contributions and benefits

A focus on common concerns, fear and disadvantage, however, risks producing a very one-sided picture of children, young people and older adults. It obscures the huge talents and too-often unrecognized contribution of these age groups to families, neighbourhoods and city life. It ignores, for example, the massive role played by older adults in civil society, in volunteering, in maintaining neighbourhoods and increasingly, in caring for children and grandchildren.

It also ignores the new talents, energy and dynamism that children and young people can bring, when allowed, to public spaces, to their institutions and their social networks. It is also worth noting the huge benefits that are achieved through positive intergenerational encounters, including the transfer of useful life-skills both up and down the generations; values, moral codes and social norms; and culture, history and identity, amongst others.

One of the challenges today, then, is working out how to liberate the talents of both age groups to contribute to and enrich each others’ lives and the lives of those around them.
Towards the All-Age-Friendly City

Children, young people and older adults, therefore, have some common needs - for which shared services and infrastructure might be developed. They do, at least potentially, co-occupy the same spaces – for which multi-use purposes might be imagined. And they also have diverse, significant and often-untapped talents – which might be better made visible, encouraged and supported to the benefit of all.

The challenge, then, is to imagine a city that is capable – in its infrastructure, services and spaces – to act as a platform for the creation of relationships and networks that can address these needs in common and allow these talents to be realised in action. This, we want to suggest, would constitute an ‘All-Age-Friendly City’.
There are a number of important knowledge resources that we might draw upon in beginning to imagine an ‘All-Age-Friendly City’. Amongst these, is the evidence that ‘childhood’ and ‘old age’ can consist of very different experiences and identities in different times and places. A second, is evidence of significant wider trends and developments that are likely to push both ‘growing up’ and ‘growing old’ in different directions over the next quarter century. And finally, there is evidence of a growing consensus around what might constitute the key features of an ‘All-Age-Friendly City’. To take each of these in turn:

1. **The social construction of childhood and aging.** Growing up and growing old in the city changes as a result of historic, cultural and technological conditions. There is nothing inevitable about a future of older adults shut away from society in care homes and children garrisoned in schools with no encounters between them other than in the family home. After all, what it means to ‘be’ a child or older adult changes significantly over time. Studies have repeatedly shown that “both youth and childhood have had and continue to have different meanings depending on young people’s social, cultural and political circumstances”\(^{15}\).

   For example in Inuit culture a ‘child’ is perceived as being unable to reason, process thought or understand like adults, and therefore parents treat them with a great deal of tolerance and leniency\(^{16}\), while in Fulani, West Africa young children work and contribute to society. “By the age of four, girls are expected to be able to care for their younger siblings, fetch water and firewood and by the age of six will be pounding grain, producing milk and butter and selling these alongside their mothers in the market”\(^{17}\). Similarly, older people experience age very differently depending on context, Vietnamese ‘elders’ are considered to be the leaders in the family, making decisions and offering advice, while Native American elders take on substantial roles teaching and caring for the young\(^{18}\).
2. Wider trends. A number of competing and sometimes contradictory drivers are likely to play a role in shaping future social practices of childhood and old age in the city. These include:

- Growing, and more diverse, populations in cities as a result of economic and environmental migration
- Increased data, about everything, from cities to individuals, as a result of embedded sensors in bodies and buildings, of accountability regimes and of massive growth in computer processing power
- Automation of routine activities, again as a result of increases in processing power and economic trends, that will lead to everything from driverless cars to replacement of routine and repetitive forms of employment
- Increasing stress on infrastructure from environmental disruption such as flooding/droughts
- Developments in renewable energy and low carbon living
- Personalised medicine and increasingly longevity for those who can afford it
- Cosmetic prosthetics used to augment the body for pleasure, display, enhancement
- Increasing economic inequalities in conditions of constrained public resources.
What might ‘childhood’ and ‘aging’ look like in a culture of personalised medicine, cosmetic digital enhancement, remote ‘care’ offered via remote and haptic technologies and automated transport? How might experiences of childhood and aging change in conditions of radical environmental disruption, over-population and significant economic and social inequalities? How might these two competing drivers - technological enhancement and material inequalities - combine to create different futures for intergenerational relationships in cities?

The idea that the present organisation of social relationships in the UK should be taken as a realistic guide to what is possible or desirable in the future city, therefore, is hard to sustain. The challenge that should be addressed instead, then, is not what is probable, but what sort of city would be desirable given such possibilities. To that end, it is worth noting that there is the basis for broad consensus on the features of ‘child-friendly’ and ‘age-friendly’ cities. These begin to provide a route-map for the creation of the future ‘All-Age-Friendly City’ in the context of these broad trends.

The following attributes were identified as essential elements of a ‘child-friendly city’:

- Perceived safety, including physical, economic and psychological safety
- Increased mobility so that children can move through the city independently
- A sense of ownership of spaces, feelings of belonging and being welcome
- Representation and voice of youth in democratic processes and citizenship while simultaneously recognising heterogeneity

The question is not ‘what is probable’, but ‘what sort of city would be desirable’
The following attributes were identified as essential elements of an ‘age-friendly city’:

- Adequate, affordable and ubiquitous public transport
- Perceived safety, including physical, economic and psychological safety
- A sense of ownership of spaces and feelings of belonging and being welcome
- A walkable city
- Integrated planning and economic decision-making considering the diversity of services in localities.
TOWARDS THE ALL-AGE-FRIENDLY CITY

CONTENTS

WHY AN ALL-AGE-FRIENDLY CITY?
RESOURCES FOR THE IMAGINATION
SCENARIOS FOR THE FUTURE ALL-AGE-FRIENDLY...
ROADMAP TO THE ALL-AGE-FRIENDLY CITY
- BUILDING TRUST
- CREATING OPPORTUNITIES FOR...
- HOUSING FOR MULTI-GENERATIONAL...
- PUBLIC TRANSPORT FOR MULTI...
WHERE NEXT?
FURTHER READING

SCENARIOS FOR THE FUTURE ALL-AGE-FRIENDLY CITY
What happens when you combine the awareness that ‘aging’ and ‘youth’ can and do change radically in different historical and cultural contexts; that digital, medical and transport technologies as well as economic and environmental drivers may bring significant changes in the next fifty years; and that there are a number of features that are needed to create ‘child friendly’ and ‘age friendly’ cities?

Here we outline four ‘future city’ scenarios that were developed through different techniques in our two workshops. In the first workshop, participants started from long-term trends and explored the role of contingency and radical novelty in shaping future trajectories for intergenerational relationships in an imaginary future Bristol of 2070. This generated two scenarios that disrupted contemporary assumptions about employment and the organisation of time, space and resources. In the second workshop, participants worked from a map of age-related patterns and practices in the city today, to create a new city map that reflected the desired practices and values of a future All-Age-Friendly City, harnessing the technological and social drivers described earlier. This generated two scenarios that built strongly on contemporary concerns and issues.

While elements of all these scenarios, as purely imaginative constructs, could be extended to other cities, it is worth noting that they draw upon Bristol’s strong ‘green and digital’ culture and reflect the features of the landscape of that city. Those living in other cities and wanting to use these scenarios as a prompt for reflection will want to consider their own defining cultural assets and geographical features.

Together, these four scenarios are intended as prompts for the imagination for a future ‘All-Age-Friendly City’.
Scenario 1: The Living City

This scenario was captured by the headline “Bristol the living city”; it emphasised a culture of care for current and future generations, including generations of people and nature. It was characterised in particular by a complete rethink of relationships between work and play, and the organisation of time.

In this future city nature is important and key values of ‘protecting’, and ‘growing’ are embedded throughout the city. This is reflected in the architecture where new buildings are designed using ‘biomimicry’ and old buildings are adapted with green roofs and new underground rooms; bolt-on additional living spaces can be added to housing as and when they are desired. Planning rules allow all kinds of new structures to be built, like tree houses. Natural energy sources such as wind, sun and a new kind of moss are used to fuel the city.

The city is governed by age-diverse representatives, chosen by a lottery system; some of these representatives are also responsible for speaking for animals and nature. There is an established sense of public ownership in the city and public spaces are designed for social mixing. The absence of cars creates safer spaces for everyone to connect with each other, to play and socialise. The emphasis on nature and more connectedness means healthier, happier communities, including older people, with less crime and more community responsibility.

Education is ‘lived’ through the city and more education happens outdoors. The city is a university for all where all ages learn from each other. Radical ‘play’ projects aid learning, one such project involves an intergenerational group working together to build a massive rope swing in a public space. There is a twenty hour working week for all and everyone gets a ‘living wage’.

Organic skyscrapers by Chartier-Corbasson
Credit - Chartier-Corbasson Architectes
http://chartcorb.free.fr
The city is a safe space where children are free to move around and spend time each day contributing to the community in some way. Some hours each day are spent learning which might involve more formal ‘schooled’ experiences but also involves engaging in an outdoor project and interacting with the environment. These experiences see them working and creating with a range of adults from whom they would be learning life skills; in particular, a non-instrumental approach to learning would be encouraged through learning that is self- and community-directed.

While children would also have time available within the day to play without adults, play also becomes more important for adults. Parents work half days and have more time to spend with their children and their own parents. Their ‘playful’ time is spent on their own plots of land as well as in work in civil society, and with others of all ages in the community. As there are more connections between people in the city, and people generally have more free time, those people who are more physically restricted or vulnerable in another way would have regular visits and support from others.

There are of course tensions in this future scenario: the balance between encouraging innovation and creativity and promoting anarchy was discussed, as was the balance between incentivising ‘green’ activities without significant regulation. It was also recognised that the living city may not be everyone’s ideal, and the question was raised about whether it would ostracize parts of society. More practical issues concerned how to respond to those who do not respect common goods.
Scenario 2: The New Venice

In this scenario the city is partially flooded in 2070. This city is characterised by the creativity and ingenuity generated by conditions of radical disruption.

Practical responses to significant flooding that radically changes the geography of the city include: the development of boat and water transport; the development of new building techniques to create taller buildings with hydroponics and farming intensively connected with architecture; a re-assessment of the food chain to a predominantly vegetarian and fish-based diet; a change in the economic sector with the growth in the tourism sector as Bristol becomes the ‘new Venice’; and energy coming from dam and solar energy.

These circumstances also stimulate the invention of an embodied wireless communication network, which is created to enhance communication between city participants and to produce rapid data insights into supply and demand for essential and increasingly constrained resources. The communication network is especially important for the supply and demand of food, but also helps with health care, where it can remotely scan and diagnose individuals (sometimes before they become ill), and send them to clustered healthcare provisions, imagined as mobile hospital barges.

These practical and physical responses to the changed environment have knock-on consequences for the residents of Bristol, for all generations. An important shift emerges around changing skill sets, with older people who can fish and farm possessing valuable skills to share with the younger generation. This need for more practical and vocational skill sets also sees a shift towards vocational education and consequently a growth in apprenticeships.
Scenario 2 - The New Venice
The reduced mobility due to the flooding also sees an increase in care swaps and care bartering across the city. People set up reciprocal commitments across geographical divides to offer care and support for each others’ older parents or young grandchildren. Family commitments are effectively ‘swapped’ through systems to support trust and updates on care. There is no national governance, which has been replaced by isolated local fiefdom with common land (the current large landowners have flown). This creates a ‘blitz spirit’, where everyone comes together.

The water becomes the new public space, and hosts water sport, water festivals and other entertainment. In this context surveillance underpins trust with reputation engines impacting across all life, for example old people with good scores can ‘gift’ or bestow trust points to the young. Over time the imagined 2070 Bristol rebuilds itself with the water surface being the new ‘street level’.

**Scenario 3: The Trusting City**

This future city emphasises trust and citizenship through the built environment of a mixed-use, high density urban landscape. Two main ideas inform the physical geography: 1. the concept of the whole city as centre, where there is no divide, as at present, between the current existing ‘centre’ (retail and services) and ‘periphery’ (residential), but instead residential dwellings, services, commercial properties and industrial building are mixed and high density across the city; and 2. the concept of a patchwork of city villages, which contain the mix of retail, services, industry and residential to meet ‘village’ needs. Key features of this decentralized concept were diversity and connectivity and, related to these, civic pride and safe efficient transport.
A critical element of this future was the idea of having a highly diverse city in which community resources and ‘community spirit’ more traditionally found in villages, were ‘scaled up’ to the city as a whole. Technological solutions were conceived to counter feelings of anonymity or disaffection in the city, ideas included: face recognition technology and displays to create a city that knows its own citizens; myth busting live real-time data feeds to address perceptions of fear (e.g. x children walked to school today safely); technology to increase a sense of community trust through a self-regulating system of peer vouching (e.g. similar to couch surfing on-line/offline community trust engines); and technology that can capture and measure emotional perspectives (happy/scared) and respond.

Connectivity was also important, to pre-empt feelings of tribalism within the different ‘city-villages’ and promote a sense of commonality. Festivals and iconic buildings provided important motives to move across the city, and shared public spaces would support encounters between different groups. In order to connect more easily a ubiquitous, affordable and accessible public transport system was needed. An on-demand personalized/public transport system was conceived as a ‘pod’ which is public when it can be and private when it needs to be. Embedded sensors communicate where traffic is, where people are and where they need to be in order to collect individuals and join them to trains of pods for the main journey, to split off for the last personalized section of the journey.

The pressure on space in the future city and the need for sustainable housing designed for the lifespan resulted in the idea of ‘lego’ housing, dwellings built out of pods and modules that allow flexibility and adaptability to change as our lifestyles change. For example as children leave home or elderly parents move in, the housing arrangements could be changed; one section becoming

dwellings built out of pods allow flexibility and adaptability to changing families
more self contained to rent out, or detached from the main house to reuse/recycle elsewhere.

However, it was also acknowledged that inherent in this ideal future were a number of tensions. The desire for localism raised questions of how to instil pride in an area without this turning into destructive tribalism. It was also acknowledged that although festivals and impromptu encounters are important parts of the imagined future city, these cannot be imposed or assumed – you can’t legislate parties.

**Scenario 4: A City of Hubs**

This scenario operated with fewer radical disruptions to time, space, economics and employment than the other scenarios, but instead, worked practically from current examples to imagine a future city that emphasizes intergenerational mixing though multiple centralized hubs of facilities.

These hubs would incorporate schools, health provision, cultural services and activities, and art. Similar to Scenario 3, the interconnectivity of the hubs was also important, but not just physically also psychologically and economically. Easily connected hubs were considered means of generating social capital, personal agency, and valuing and validating community. Governance was also mapped onto the network of hubs with each hub in charge of its own governance – a de-centralized system that allowed everyone to have a voice, agency and the ability to make a difference. Across the whole city, were imagined a series of walking highways, that reclaimed public space and reconnected people in safe, nature rich avenues for intergenerational connections.
Like Scenario 3, issues and risks identified included balancing localism with connectivity. It was considered that making hubs new destination ‘anchors’ would encourage travel between them as hubs might form around people with specific expertise. City cross-over could also be encouraged with treasure hunts, art trails, beacons and celebratory landmark buildings.
ROADMAP TO THE ALL-AGE-FRIENDLY CITY
These four scenarios were used to identify a set of key areas that would benefit from development, ingenuity and investment to create a future ‘All-Age-Friendly City’. These can broadly be understood as addressing two core concerns:

1. Designing to enhance the capacity for intergenerational solidarity,
   - in particular, by building trust between different age groups and by creating opportunities for spontaneous encounters; and

2. Designing for the shared mobility and living needs of children, young people and older adults,
   - in particular, by developing new approaches to public transport, public space and housing.

These issues of trust, of facilitating spontaneous encounters, of creating safe ways of moving around cities and of developing flexible ways of living that are capable of adapting to multi-generational living, came up again and again in discussions and in the scenarios. The remainder of this section describes some of the possible ideas for future development identified in the workshops, as well as providing signposts to current experimental case studies that offer insights into how such ideas might be realised in practice.
Building Trust

All of the scenarios for the All-Age-Friendly City were premised on the creation of cultures of trusting and strong relationships between different generations. This, of course, is easier said than done. How might a city’s infrastructure, services and technologies contribute to building trust between different age groups? A number of ideas emerged from the workshops:

Introducers and Mediators

How do people in different age groups get to ‘meet’ and know each other? They rely on introductions and mediators. These might be intentional – when a friend or a neighbor makes an introduction – or accidental – as when dogs connect up their owners in the park. Is it possible to create a ‘digital dog’ or, as one workshop participant put it, inspired by Philip Pullman’s books, ‘a daemon’ that would mediate between different people – somehow representing publicly and playfully, people’s shared interests and concerns or acting as a safe topic to start a conversation. This could be a personal electronic device, a kind of digital advocate that talks to other advocates; it would work by suggesting who you might want to connect with, pointing out who or what you already have in common, or just playfully prompting a chat.

This might be as simple as a device letting you and the young man you are a little intimidated by in the park know that you know his auntie; or pointing out that the older lady you’ve been ignoring has an amazing history of travelling and adventure. Participants imagined a digital system that enabled the sharing of data and stories about individuals in accordance with their level of comfort in self-disclosure. Retention of control concerning what went public and what private was seen as critical. This was imagined as a process by which an individual’s data could ‘speak’ to other individuals’ data, to help make visible the connections and the possible relationships between them.

Can we create a ‘digital dog’ to introduce strangers playfully to each other?
Shared tasks
People don’t just meet for the sake of it; sometimes, you build relationships through shared work and through helping each other out. Digital trust systems that let you post needs and issues as well as offers of help and spare capacity, might create unexpected opportunities for encounter between generations. Participants suggested that digital trust systems (such as Shiply) could create opportunities for individuals to experience the benefits of helping each other, possibly exchanging time, goods or ideas as they pass locations in the city on their way to other places. This might involve online exchange of slices of time for example pairing up someone who has a few hours to spare with someone else who needs help to look after their house while their washing machine gets fixed.

A trust-creating city-interface
Social statistics are usually presented in a format that encourages fear and anxiety. A simple strategy for building trust and confidence imagined by workshop participants was the creation of public interfaces that could share data that was actively positive and encouraging of participation in public spaces. Creative, playful public interfaces were imagined that acted in the opposite way to safety warnings by, for example, collecting and communicating visualisations of how many people have walked down a particular street and not been mugged; or how many people talked to strangers in this park and began positive conversations.
CouchSurfing

CouchSurfing has created a community based on a very strong sense of reciprocity and trust, where ‘strangers’ meet online to arrange opportunities to stay in each others’ houses. Vouching, part of CouchSurfing’s reputational system, is different from many other online communities in asking for friendship type for each connection. While many social networking sites encourage multiple connections of often weak or transient contacts (Facebook or LinkedIn, for example) the CouchSurfing reputational system actively discourages this by weakening your level of trustworthiness if you have higher numbers of weak connections and “vouching for those whom one does not know well enough to trust is also taboo.”

This addition of an explicit rating for each friendship type helped to increase trust.

Friend-Of-A-Friend:

FOAF is a project “creating a Web of machine-readable pages describing people, the links between them and the things they create and do”

FOAF has an estimated 2-5 million users and enables users to rate others’ trustworthiness on a scale of 1 -10. The Semantic Web technology applied in FOAF enables the capture of rich personal and relationship data which can aid trust assessments. This application of the Social Semantic Web could assist in trust building in many different contexts as it combines social software, the semantic web and web 2.0 to create a rich representation of personal and relationship knowledge.

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20 Lauterbach et al 2009: 347
21 http://www.foaf-project.org
22 Goldbeck and Hendler 2006
TaskRabbit

TaskRabbit is an online system that connects people up to others in their community who can help them do jobs or errands that they don’t want to do. Currently operating in 19 cities across the world TaskRabbit is a members system that markets itself as providing busy people with time to do what’s important in their lives. ‘Taskers’ go through a rigorous vetting process to eliminate worries about trust before they can join the community. This involves an identity check, a criminal record check and an in person interview and a training session. Taskers are then rated and reviewed after each job and this information is freely available for everyone using the service. An ‘elite’ group of Taskers with positive feedback 97% or more of the time are clearly identified on the site. This kind of system is currently operating in a commercial market but could easily be adapted for volunteering or other more social and community based tasks and activities.

An electronic aura

Scientists at the University of Cambridge have been working on the idea of an electronic aura which would be a field that would extend two or three feet from our bodies generating signals that would uniquely identify its owner and permit their devices such as credit cards, car keys and phones to only work when they are nearby. They have designed a device called a pico which would interact automatically with websites for banks, online retail outlets and cinemas and would only function when inside an individual’s electronic aura, solving the issue of the forgotten password and enabling trust when making payments. The team are also
Looking at designing other aura-generating devices that people would place around their bodies including badges, jewellery, belt buckles and wristbands.\(^\text{24}\)

Although now being developed largely for reasons that centre around financial and technological security these systems could also be adapted to enhance trust in each other and echo the ideas that came out of the workshop around the digital advocate. If we could each have an electronic aura which signalled specifically chosen personal information about ourselves to those nearby could this enhance trust and enable more social connections to be made?

**Issues to consider**

Lack of trust between generations comes from many different sources - from economic conditions that encourage individualization to the rapid growth of diverse and more mobile populations in cities, to the more general erosion and enclosure of public spaces. Trust is also dependent on personal history and psychology\(^\text{25}\), and upon the social context\(^\text{26}\), and upon social norms and cultures.

Using technologies to ‘enhance’ or ‘assist’ trust, therefore, is not simply a question of building a robust and reliable system, it also depends on much more situated and changing social contexts. There is also the possibility that we build trust\(^\text{27}\) by taking risks, will the technology designed to build trust actually erode it\(^\text{28}\)? Should we reframe the issue as the creation of technologies that encourage stretching boundaries and the taking of manageable risks?

At the same time, traditional forms of community exchange and reciprocity work on strong existing relationships between individuals and groups; in contrast, the use of social networking and online trading systems encourages

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\(^\text{25}\) Mayer et al 1995, cited in Beldad et al 2010

\(^\text{26}\) Weber et al 2004

\(^\text{27}\) Beldad et al 2010

\(^\text{28}\) e.g. Mayer et al 1995 and Curral and Judge 1995, both cited in Beldad et al
weak-ties and non (direct)-reciprocal exchange, which benefit from increasing access to a significantly larger networks\textsuperscript{29} but might also decrease levels of trust. Many current community websites tend to overlook the benefits of the dynamic web, and functionality is limited to socialising, shopping and accessing local information\textsuperscript{30}. It is unclear too whether online civic activity converts to offline participation. Some research has been conducted on Freecycle on the ‘upshifting citizen’\textsuperscript{31} with mixed conclusions. While it showed that freecyclers did tend to engage in digital forms of civic engagement, this did not convert to off-line participation such as volunteering.

The next generation of web may more easily bridge the gap between the real and virtual, so that the web becomes a constant presence in daily life, merging web application and services\textsuperscript{32}. The rich data produced by the semantic web may have great potential to boost local social capital, “provided they are ‘geographically intelligent’, that is, are smart enough to connect you selectively to your near neighbours; are built around natural communities; and facilitate the accumulation of collective knowledge, including reputation.”\textsuperscript{33}

Of course technology has also altered the nature of community – ‘online’ is a particular demographic in itself, and online communities can be fractured into special interest communities, e.g. gamers, couch surfers. This raises a couple of questions: can an on-line system reflect the diverse demographics found in a traditional local ‘geographic’ community\textsuperscript{34}; and can community be scaled?

Online ‘trust’ is a significant area of current research and investment. However, much of the work focuses on e-commerce and is confined to online communities. There is significant opportunity to explore what we might learn, and what the limits might be, of extending this research into the broader question of trust, offline community and embodied public space that are essential to the creation of All Age Friendly Cities.
Creating opportunities for encounters between generations

The workshops mapped how and where younger people and older adults moved round the cities and where their primary areas of activity could be found. This led to a number of observations.

First, it was clear that the historic focus on ‘inner cities’ as a site of regeneration and cultural activity, did not address the increasing numbers of children, young people and older adults living in suburbs and the outskirts of cities. This raised questions about the location of ‘shared public spaces’ and also about transport facilities.

Second, it became clear that while museums, parks and green spaces were important to both age groups, sites of commercial activity such as shopping centres, also played an important potential role as spaces used by both older and younger generations. Third, we observed that there is a temporal dimension to generations occupation of public space: both generations might both be present in the same space, but at different times. How could shared use and encounters across these times be encouraged?

Fourth, less glamorous public spaces are also important for both groups: the way in which pavements are increasingly unfriendly to pedestrians, to buggy users, to wheelchair users or the partially sighted – was a shared concern. The lack of dropped curves, the regular obstruction of pavements by bins and rubbish, all impeded younger and older generations access to public space. Finally, public spaces are often also seen as sites of tension between generations – in particular, investment in play equipment in parks often takes no account of much older adults’ interests and potential needs in that area. These led to a number of ideas and suggestions in the road map towards an All Age Friendly City:

The historic focus on ‘inner cities’ does not address the increasing numbers of young people and older adults living in the outskirts of cities.
Creating opportunities for encounters between generations
Disrupting public/private boundaries
A key issue that emerged in the workshops, therefore, was the need to re-design public spaces for all-age use in order to create better opportunities for encounter between generations. This echoes previous research suggesting that all generational groups desire access to safe public spaces and the importance of multi-generational spaces for strong intergenerational solidarity. Workshop participants asked: how might we design public spaces in the city that encourage intergenerational use, rather than designing with particular generations in mind? One core response to this is to disrupt assumptions and social practices organized around familiar divides between public and private, between domestic, personal and collective living, that can produce habits and practices conducive to loneliness and generational isolation.

Reclaiming streets
Alongside this participants were keen to think about ways to reclaim streets and public spaces for different generational use. Intergenerational street games, embedded in the environment, that encouraged both generations to play were suggested as a way of encouraging intergenerational interaction (eg ‘scrabble match-up’). Similarly, the use of ping pong tables or street pianos, as shared objects that can encourage spontaneous encounters, were seen as examples worth pursuing further with some thought about the sorts of objects that might really engage and encourage conversations across generations.

High quality public data about where streets were being dug up for service installation and where road closures were necessary, might also provide citizens with information about times and opportunities to host street parties or street citizens meetings and clean-ups; making it easier for different groups to come together.

We need to disrupt traditional divides between public and private, domestic and collective
**Shared services hubs**

Workshop participants discussed the importance of the creation of a community hub where resources would be gathered together providing a central meeting point for diverse groups and more efficient use of resources between services such as schools, older adult care, health and leisure facilities. This prompted discussions about the ownership and governance of such spaces, which would need careful consideration if they were to effectively bring people of different ages together. These hubs would need to be networked across the city, and there would need to be careful consideration of equity issues to ensure that the resources in each area were equally rich.

**Rethinking ‘Less Glamorous’ Public Space**

The current poor maintenance of pavements, the proliferation of signage and hoardings on city streets, and the principle of individual waste disposal through ever increasing numbers of bins on pavements, all cause significant impediments to access to public space for older adults and young children, not to mention those with visual impairments. Similarly, the decline in public benches and in public toilets causes problems of access for both older adults and young people. Without basic access to public space – the chance for encounters between age groups is significantly eroded. Creative collective solutions to domestic waste, which get rid of the need for individual bins; as well as investment in seating and mapping of public toilets, would all make a significant difference. This is not sexy – but under-pavement, collective waste disposal can be made gorgeous through creative design of bins. GPS makes city-wide mapping of basic amenities - mapping the city topographically, the dropped curves, the hills and slopes to improve mobility for older and younger citizens, perhaps with an added game layer – feasible for any city with open data and a willing band of geeks.
Designing communities for engagement

Mayors in cities such as Porto Alegre, Curitiba, Bogotá and Medellín have supported the design of high density mixed use spaces and flexible multi-use outdoor community spaces. In these new designs the whole city is seen as the centre and a series of dense multi-use areas connect up in a ‘network of villages’ enabling community led discussion around the use of space for different purposes and multiple, new kinds of relationships with space and fellow citizens.

San Ysidro is a densely populated area situated in-between Tijuana and San Diego, a border settlement consisting of low income families, with two-thirds living in multi-family homes where shared space is used for multiple purposes. Examples include the small-scale projects ‘Living Rooms at the Border’ and ‘Senior Housing with Childcare’, both connected by footpaths. The result has been the integration of affordable housing, community centres and flexible in/outdoor spaces which reflect the cities density and account for the residents’ income levels. The main focus of interaction in the project design is the block long, semi-public loggia. This shared communal space is multi-use, hosting at different times markets, festivals and other community events. Another parcel consists of terraced wooden housing units which interact with the loggia, contrasting the public and private. The housing units are conceived as a series of interlocking rooms allowing flexibility to operate as single units or open out into one large family unit. A row of houses designed for older adults connects through semi-public gardens incorporating a full-time day care centre for grandparents raising their grandchildren.

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36 Cruz 2011
37 Californian-Architects Office Profiles Architects. Undated.
38 Museum of Modern Arts (MoMA) US
39 Ouroussoff, N. 2006
Care home AS the community

“Care homes and retirement villages have traditionally been designed as gated villages only open to those over a certain age. This home, set in a rural community in Norway, is different. The care home itself is fully integrated into the community centre that it is a part of. The home and community centre are both housed in the same building. You walk directly from the care home wing into the community centre. Within the care home there is a therapy pool where physios do rehabilitation work with residents. This pool is also used by mothers and babies. Just past the open door to the care wing, there is an exhibition space which shows both work of local artists and more established ones. Further along there is a snooker room and a café serving snacks and drinks. At the end of the main hall there is a climbing wall, a swimming pool and a small cultural centre which is used for music classes, for example. Downstairs there is also a cinema. Across the courtyard there is the local church and a small shopping precinct. Just behind the precinct is the bus station. By placing the home within the community centre the possibilities for maximising intergenerational interaction multiply substantially. The residents have direct access to most of the activities taking place in the community, even if they don’t participate themselves directly then they are able to observe the children climbing the wall or having swimming lessons. They’re able to listen to the music classes taking place or are able to go to the cinema. The care staff working in the home also visit the older people living in the sheltered accommodation which is also part of the site, though this is not physically attached to the community centre. This brief overview gives food for thought about intergenerational encounters in the future and the importance of planning within that.
As regards the social and mental wellbeing of older people, a project such as this could play a key role.” This text is taken from a submission to the project workshops by Penny Miles, University of Bristol, researcher on the Healthy Ageing in Residential Places (HARP) project. Funded by the ESRC through the European Research Area (ERA) AGE programme. Principal Investigator: Dr. Liz Lloyd, University of Bristol.

Open Street Mapping

Open street mapping is transforming the ways that maps are made and used as mapping data can dynamically and constantly evolve, just as real places and relationships do. It could potentially enable the collection of useful data about a community, by a community, which in turn could enhance opportunities for intergenerational encounter. OpenStreetMap, for instance, uses mapping apps, recommendation tools, sports watches, classifieds and property search engines to crowdsource local maps. Volunteers can then collect data of particular interest to their communities, for instance showing where public toilets are available, where cyclists will find particularly steep hills or new cafes or restaurants that might warrant a visit. Such maps could potentially identify areas for intergenerational encounter – data could be added from young and older people for instance regarding the perceived safety of the area or how to access a place via public transport or shared lifts. Information about events and festivals could also be more easily shared.
Spacehive

Spacehive is a funding platform for civic projects that enables people to crowdsource the finance and support to achieve local projects that transform the places where they live. It works by providing a (web)space where people can share good ideas that they have which can then be funded given enough financial support from councils, individuals and local and global businesses.

A recently funded project is ‘The Flyover Liverpool’ – the proposal here is to turn a concrete flyover into an urban park for Liverpool, ‘a vibrant place full of life, trees, shops, exhibitions & joy.’ The vision of the people proposing the flyover is to create a new public space that would enable residents to come together on a structure that is currently due for demolition. This would be achieved by connecting neighbourhoods with each other and with the centre of the city in new ways by creating pedestrian routes and cycle paths, developing a programme of live cultural events, working with museums to animate the space and promote learning and providing spaces for small independent businesses to thrive. Local people are key to the development of the idea which aims to use low cost, sustainable materials and will be looked after and governed by citizens themselves.

Issues to consider

There are considerable challenges in improving accessibility to public space for older and younger people. For instance, in the UK half of people over 65 years old say that they face problems getting outdoors, and people living in care homes are three times less likely than the rest of the population to get outdoors for more than five hours a week\(^41\). Younger people meanwhile are

\(^41\) Handler, S. (2014)
increasingly engaging in leisure and cultural activities in the home with the
development of new media technologies and parental concerns about their
safety\textsuperscript{42}. Incentives and support to overcome barriers to participation in public
space is therefore required.

What’s more, a new set of ideas is required to help think about public space and
intergenerational relationships. Much of the exploratory scholarship
around civic engagement draws on Putman’s Social Capital theory, which has
provided a useful link between social science ideas and computer science.
However, this is a problematic concept when addressing issues of social
connectedness, as it tends to have an individual/network focus rather than
one that recognises interdependent relationships. The All-Age-Friendly City’s
concern with building intergenerational solidarity therefore suggests new
ideas might be needed. The concept of ‘community’ as produced through
repeated acts of ‘micro-sociality’ that is being developed by Walkerdine and
Studdart at Cardiff University\textsuperscript{43}, might act as a powerful new resource for
creative thinking in this area. This perspective makes the case as much for
arts based disruptions of everyday rituals as it does for the rethinking of
urban planning.

\textsuperscript{42} Manchester, H. and Pett, E, 2014

\textsuperscript{43} See, for example, \url{http://www.cardiff.ac.uk/soesi/newsandevents/events/towards-a-microsociality-of-austerity.html}
**Housing for multi-generational and complex lives**

Several ideas around housing emerged from the workshops as potentially useful for generating positive relationships between generations – both within families and in terms of addressing pressures on housing stock across generations. These can be summarised as: 1. Creative ways to rethink our existing housing spaces to accommodate for changing demographics; and 2. The design and building of new houses that are flexible and adapt to changing lifestyles and occupancy.

**Modular Housing**

Participants suggested that modular housing would give home owners more flexibility and could help create a different culture of housing where the home could expand and contract as required – rooms added or taken away as the needs of a family or community changed. New cultures and ideas around home ownership also emerged where housing stock would be co-owned and considered shared space, providing opportunities for generations to live together. A shipping container idea was explored although there was a difficulty here in working out how social spaces could be integrated into the vertical buildings/ communities that this would create. The advantage of such vertical communities would be their reduced urban footprint.

**Adaptation of Existing Housing Stock**

Discussion of the adaptation of existing housing stock considered the repurposing of old large houses where, for instance, the owners’ children have moved out, these houses could be partly rented out to other young families who need the space, creating an intergenerational home. There was a challenge identified here related to privacy and it was thought it would be necessary to carefully consider and experiment with the design of houses to enable multi-occupancy while maintaining privacy.
Housing for multi-generational and complex lives
Growing your own house
Other ideas that emerged included more radical approaches such as the notion of ‘growing your own house’ this would be a living house, perhaps even edible and self-regulating. Other ideas include using previously dead space in our cities to build homes in the gaps and fissures that exist between buildings. Data capture was again discussed in relation to housing and city buildings, as it was suggested that our homes and other buildings could automatically respond to data captured by occupants making links between our activities and preferences in our private and public lives. It would be important that citizens had control of this data and how it was shared.

ADUs and ECHO
Accessory Dwelling Units (ADU) have been used for a long time as a solution to multi-generational living as they allow for privacy when it is required, and communal living when appropriate. The ADU is a self contained dwelling that is annexed to a principle dwelling, often referred to as the ‘granny flat’. As a solution to multigenerational occupancy they offer potential beyond accommodating elderly relatives, as they can also afford privacy to older children living at home – the so called ‘boomerang’ generation. The ADU has been used in many forms for several years, from converting basements into flats with their own front doors, to building detached bungalows at the end of the garden. The ADU as a solution to multigenerational living was formalised with the launch of the Elderly Cottage Housing Opportunities (ECHO) project in the US over a quarter of a century ago44. The project offered inexpensive, temporary either free standing or semi-detached housing units based on a modular system which met zoning/planning restrictions as a solution
to caring for elderly relatives. The US Department for Housing and Urban Development (HUD) discontinued the project in 2003 due to evaluating the units as poorly designed, however the ADU is still an important idea, reconceptualised regularly.45

Active aging means increasingly grandparents are playing caring roles for their grandchildren.

The Grandfamilies home

The advent of ‘active aging’ has resulted in another social change, and increasingly grandparents are caring for their grandchildren. This new, and ancient, trend has resulted in the creation of multi-generation affordable housing projects particularly focused on grandparents raising their grandchildren in the US. The Grandfamilies home in Boston Massachusetts was the first development of this kind in the US, opening in 1998. Other projects include the Vermount Multi-generational housing and senior centre in Los Angeles, California and the Roseland Senior Campus in Chicago Illinois. While they vary in specifics, they are organised as separate housing units or apartments with access to family support, such as an on-site manager or support/liaison centre.46

Homeshare

Creative approaches to Intergenerational living arrangements can provide another solution to rethinking current housing stock. Homeshare (http://homeshare.org) is an innovative, yet simple idea that provides mutually beneficial affordable housing solutions. An arrangement between two parties to help each other, it typically involves an older householder and a young person in need of accommodation.

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45 Shin 2012
46 Shin 2012
(although it also helps with other, diverse scenarios). For example, an elderly person who owns their own home may offer accommodation rent free to a young person who helps them around the home. The elderly person is able to continue to live independently, while the young person receives affordable accommodation while they study or start their career.

Hinged spaces housing

The recognition of the new demands created by an increasingly aging population, changing demographics and population structure and changes in occupancy patterns has resulted in the conceptualisation of the flexible and adaptable dwelling. The Adaptable Futures projects defines this as, ‘the capacity of a building to accommodate effectively the evolving demands of its context, thus maximizing value through life’. Hinged spaced housing, the name given to Steven Holl’s Fukuoka Apartments, are one example of adaptable housing design. They consist of a series of modular apartments that allow the inhabitant to open-up or close-off different spaces for different uses. The houses are inspired by Fusuma, the traditional Japanese sliding doors used to change the dimensions and function of a room. The series of hinged, interlocking units add flexibility to the apartments, for example one might want to expand the living room during the day, and reclaim the space for the bedroom at night. Considering changing lifestyles, this design lends itself to formulating a different space when children leave home or elderly parents move in. However the changes are limited and have to be imagined at the planning stage.

47 NAAPS 2011, shared lives plus website
48 Schmidt et al., 2010, cited in Danko 2013
The Grow home

Developed in the early 1990s the Grow home can be detached, semi-detached or terraced, and can be occupied as a whole unit, or each story used independently. Central to the design is the ‘vertical circulation core’ which allows owners to remove joists to install stairs as and when needed, joining two independent units to create one dwelling across two storeys. The house can be adapted pre, during, and post occupancy to accommodate between one to three units\(^\text{50}\). The same principle had been applied recently to Nijmegen in the Netherlands. Here people can purchase architect designed affordable kit homes, building a neighbourhood of affordable, adaptable houses\(^\text{51}\).

Systems building NEXT 21

Systems building describes the integration of a series of separate subsystems that are both independent and compatible with each other. Through the construction of a building made up from multiple subsystems it is possible to modify component parts through disassembling and recycling elements in relation to the desired change. This makes the systems built home more dynamic and flexible, and gives it a greater potential to adapt to lifestyle changes. The experimental multi-family housing project NEXT 21 integrates four subsystems: Structure, cladding, infill and plumbing to create 18 units\(^\text{52}\). Each dwelling is unique to suit the different lifestyles of their inhabitants (from hobbies to family composition) and highly adaptive to respond to changes in occupancy, lifestyle etc. This is achieved through the design of enduring elements which consist of the communal structure, and

\(^{\text{50}}\) Flexible Housing Project

\(^{\text{51}}\) Alter, L. 2014

\(^{\text{52}}\) Kim, Brouwer and Kearney (undated)
ROADMAP TO THE ALL-AGE-FRIENDLY CITY

adaptive elements which consist of the private dwellings which can be changed around lifestyle/changes. In addition to the flexibility to locate/move interior walls, the NEXT 21 building also offers the flexibility to relocate exterior walls, as these are not part of the communal structure, which is made up of columns, beams and slabs. The increased flexibility this offers means that each unit is easily adapted to life changes.

The green house of the future

The “Incredible Edible House,” is a sustainable 3-story house that doubles as a vertical garden. It is made out of three prefab containers stacked on top of one another designed to reduce resource consumption and increase efficiency – building dense housing like this will be important for future cities in reducing energy use. Wind turbines will be placed on the roof in front of an evaporative cooling reservoir which will dramatically reduce energy usage. The roof will also feature a garden, enabling residents to work together to grow their own food.

Issues to consider

Much of the media coverage and popular discourses around older people suggest that they want to stay in their large family homes, and there is some evidence that older people want to ‘age in place’ in order to retain connections with friends and to stay in a familiar neighbourhood. However respondents over 65 years old in an Australian study suggested that flexibility and fluidity and increased choice were more important to them in making decisions about where and how they wanted to live.
The new housing arrangements discussed in our workshops require new living arrangements and therefore changing cultural patterns that challenge notions of the need for privacy and sole ownership that is common in the UK. New developments such as shared ownership and shared living arrangements will necessitate new legal and governance structures to ensure all feel able to enter into such arrangements without fear of losing their home, money or indeed their dignity. Moreover there are issues of fairness and inequalities of access to housing to consider. It remains the case with many of the ideas mooted for All-Age-Friendly Cities that they are likely to be easier to achieve for those families who can afford large houses.

There are also other issues to consider. For some older adults, ‘giving up’ space for a younger family in the home, while potentially strengthening ties with different generations of different families, may make it harder to maintain relationships with their own families who may no longer find it easy to visit. At the same time, living in multi-generational families or intergenerational relationships is not always trouble-free. Australian research, for example, found that older adults describe extended or multigenerational families as characterised by negative or destructive relationships and point to underlying tensions and hostilities between themselves and close family members that would make intergenerational ‘family’ living untenable.  

Living in multi-generational families or intergenerational relationships is not always trouble-free
Public transport for multi-generational participation

An ability to travel safely around the city is a major barrier for older and younger people who are less likely than others to have access to their own cars. Low cost, accessible and reliable public transport was an urgent priority for all participants concerned with either children or older adults’ occupation of the city. Regular, ideally flexible public transport was essential to enabling all age groups to access and participate in public spaces. This was seen as an urgent mechanism for addressing the risk of isolation for all age groups. Thinking towards future developments, participants were particularly interested in considering the design of a safe embedded transport system that could enhance mobility for all generations around the city. Echoing the concept of ‘liveability’ our participants felt that issues such as walkability, maximum accessibility and disrupting familiar private/public transport divides would be important in building future all age cities.

Walkable Cities

Workshop participants discussed the need to change our current car orientated culture to create cities where walking is considered normal, perhaps by looking at the creation of green walkways or superhighways, by making sure pavements were clear and even beautiful by redesigning the urban environment, or perhaps by embedding games into popular routes (for instance in lamp-posts, for example, see the Bristol Playable Cities Hello Lamppost project[19]) thereby creating rewards for walking. In addition an instant positive feedback loop of the outcome of walking on your health, provided by nano technology embedded in our jewelry or under our skin, might be provided (or, less invasively, via phones/jewellery).
Public transport for multi-generational participation
Multi-purpose public transport
Public transport can, at present, be a threatening space for different age groups. One way of addressing this was a playful approach that re-imagined public transport as a mobile form of other activities. Rather than just being about ‘getting from A to B’, buses and other transit systems could be seen as sites for collective encounter – ‘singles buses’, with speed dating; libraries and download spots; charging hubs; points for accessing information. Changing buses from places that were grudgingly taken necessities, to desirable and pleasurable spaces to be, opens them up as a collective public space.

Sharing and group transport
Participants also thought about how we could use our increasingly large scale, good quality data better. For example sharing data about where we want to go, so a group of people could connect and travel together. Cheaper Oyster cards, or similar systems, could then be provided for families or groups rather than individuals. Where space is at a premium in our future cities we might not have space to store individual bikes so shared or public bikes could become more common.

London
London’s transport policy is a good example of an embedded transport system. Its most ambitious and well known feature is the congestion charge, which is a foundational element of its intelligent system management. In addition to introducing a congestion charge for driving in central London the projected revenue increases were invested into a comprehensive bus management system and the
launch of the London Bus Initiative, which created ‘BusPlus’ routes where real-time information is broadcast on displays at modern bus shelters, automatic vehicle location systems inform driver instruction systems to prevent bus bunching, and transit priority lanes and traffic signals increase reliability. These routes are serviced by modern low buses which are regularly cleaned. The bus service is part of an integrated public transport system employing both fare integration and smart cards. Bike sharing has become another important element of London Transport, where you can hire bikes from docking stations across the city with your debit card. The combination of automated traffic enforcement to implement the congestion charge (Intelligent system management) and efficient and improved public transport (new mobility) has been so successful at reducing congestion that there has been a short fall of the congestion charge revenue forecasts, indicating it has been more successful than was initially imagined.\(^57\)

### Bogotá

From the late 1990s Bogotá started to transform its infrastructure according to the criteria of liveability and social equity, aiming to increase access to the city and its associated opportunities and employment for its poor populations. The central focus of this activity is ‘Almeda Porvenir’, an 18 km stretch of streets exclusively and permanently for pedestrians and cyclists.\(^58\) The network of streets runs through the city centre and out beyond the city limits, joining up poor neighbourhoods to this central artery which is the world’s longest urban pedestrian/cycle path. In an attempt to reclaim the streets from cars for the benefit of its residents...
parking on pavements was also banned and instead pavements are fostered as public spaces. In addition many streets are closed down to cars each Sunday when recreation and community take precedence. As well as promoting a culture of liveability orientated around ideas of reclaiming the street and public space, Bogotá is also attempting to tackle congestion through the development of the Transmilenio, a sophisticated bus rapid transport system. The Transmilenio builds on lessons from Curitiba, Brazil, to develop a much larger ubiquitous and affordable bus network which is envisioned to reach 85% of the city’s residents within half a kilometre. To break habitual car habits Bogotá also observes a ‘car free day’, and promotes alternative mobility on a weekly basis through rationing driving privileges so that each car is removed from the city during peak hours for two days. 

### Sentiment mapping for transport systems

The Transport Systems Catapult is currently working with a social enterprise start-up, Commonplace, along with the Royal College of Art to explore the use of sentiment mapping via social media channels to improve passenger experience of public transport. The project will look at how sentiment mapping and analysis using existing social media channels can understand and improve passenger experience across various transport modes. The project might be used to find out more about different generational uses of public transport systems assessing ease of travel and how older and younger people think about and feel about current transport systems in order to design innovative future transport ideas for the future.

59 Goldman and Gorham 2006

60 https://ts.catapult.org.uk/sentiment-mapping
Pods for travelling

Ultra pods are already in operation in various locations around the world – including at Heathrow airport in the UK. They are rubber-tyred, battery-powered vehicles, capable of carrying 4 passengers and their luggage. They are designed to be accessible for wheelchair users and can carry prams and bicycles, making them ideal for the future All-Age-Friendly City. Each pod is also designed with safety in mind as they are monitored by CCTV and designed to provide a non-stop journey with passengers having exclusive use of the vehicle for their journey. The pods can turn easily and can therefore navigate complex routes and have zero emissions. Researchers funded by the Transport Systems Catapult are also currently working on autonomous transport pods. A test phase is going ahead in Milton Keynes in which three autonomous pods that travel on the pavement will be trialled. The pods use left-side and right-side cameras for their primary data, mapping the environment so that subsequent journeys can be compared against data previously collected as the ‘norm’. It would be interesting to develop these ideas for an All-Age-Friendly city, perhaps where pods used data capture to understand aspects of the environment such as topographical information and information about nearest public toilets to assess dropping off points and points where people could access help and services.

Issues to consider

Transport is one of the UK’s seemingly intractable challenges that brings together issues of politics, topography, economics, sustainability, social habits and cultural expectations. Of all the issues raised in trying to create an All-Age-Friendly City, however, this question of public mobility is the one that is most urgent. Environmentally, creating sustainable transport systems is
essential for the future wellbeing of all age groups. Economically, it is no less important, transport systems shape access to jobs and employment for all age groups. Transport also has an important social function in assisting social equity through enabling equal access to a city’s opportunities, shaping how people engage with their cities and the organisation of public space. It is of concern particularly to children, young people and older adults.

Developing a sustainable transport system that considers all of these aspects is not a simple exercise, not only because each of these realms themselves are complex with contested agendas protecting different resources, but also because transport systems themselves are open-systems that by their very nature are porous and linked to other systems and activities, making them difficult to boundary for analysis and planning.

A systems-based approach is required to develop an embedded transportation system\(^{62}\). An embedded system will take into account the multiple types and systems of activity it connects to, or is embedded in. Such a systems approach would resist reducing sustainable transport into mere transit resource optimization, and would instead link transport to related broader sustainability initiatives in order to transform city life\(^{63}\).
WHERE NEXT?
The All-Age-Friendly City is a city that takes into account the needs and interests of all generations in its democratic processes, planning and design. It is characterised by:

- Representation and voice of children, young people and senior citizens in democratic processes and citizenship while recognising the heterogeneity of these groups
- The experience and perception of safety in the city, including physical, economic and psychological safety, for children, young people and senior citizens
- A sense of ownership of the city, in particular its public spaces, and feelings of belonging, being considered and being welcome in these spaces
- A walkable city, supported by high quality, accessible and low cost transport systems, that encourages mobility and participation in public life
- Integrated planning processes and service design that consider and encourage beneficial opportunities for interactions between children, young people and older adults in all areas of education, health, family and civic life

The All-Age-Friendly City is an achievable dream. The needs and interests of children, young people and older adults are often complementary. Designing city infrastructure, housing, transport and digital resources with these shared needs and interests in mind would clearly bring significant benefits and, likely, significant cost savings. Campaigning for the rights of children and older adults through the Child-friendly and Age-friendly city movements has to continue. What we hope we have done, however, is to identify that these movements have much in common.
The challenge now is to think expansively and optimistically about the ways in which these complementary needs and interests might be addressed. As we have pointed out, these issues necessarily involve a complex mix of social, political and economic factors. Despite this, however, it is possible that coming at these issues from a different perspective – a playful perspective that sees a city street being dug up as an opportunity for a street party; a citizen interface that broadcasts ‘no muggings here today’ on its billboards; a piece of wearable jewellery that simply points out the simple things that strangers have in common – any of these might open up new imaginaries and new possibilities for change, while we continue to campaign for basic issues such as decent low cost transport.

Similarly, drawing on the rich experiences and insights of young people and older adults themselves, as well as the insightful and experienced professionals and volunteers who work with them, will also, we know, enrich and deepen the thinking around these issues. Our own current projects (for example, 80by18, Tangible Memories and Teenage Kicks) demonstrate that collaborations between groups such as older people living in care settings, young people in youth groups, artists, computer scientists and social scientists can open up new avenues for thinking and create expansive new possibilities for invention.

This working paper therefore lays down a challenge to designers, computer scientists, architects and artists: how can you design the future city with multiple generations in mind? How can you better engage these often overlooked groups – young people and older adults – in your design processes to create ingenious responses to the challenges of growing up and growing old in cities today?
We have identified a number of areas that we think urgently need attention: building intergenerational trust, creating opportunities for spontaneous encounters between generations, developing new approaches to public transport and multi-generational housing. All of these are amenable to imaginative reinvention given the changing realities of aging and youth in the future city. We will continue to work in these areas, but we look forward to seeing what others come up with in this space. It is high time we thought about ‘Smart Cities’ that offer livable futures for all generations.
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FURTHER READING


WRVS 2011. Gold Age Pensioner: Valuing the Socio-Economic Contribution of Older People in The UK.
The Future Cities Catapult

The Future Cities Catapult is a global centre of excellence on urban innovation, a place where cities, businesses and universities develop together the solutions cities need for a strong economy, resilient environment and an improved quality of life. It focuses on the challenge of urban integration: helping cities take a more joined-up approach to the way they plan and operate. Its central London Innovation Centre and Cities Lab provide cutting-edge facilities for cross-disciplinary innovation.

Future Cities Catapult
Workspace Leathermarket
Weston St.
Space unit 02.02.01
London
SE1 3ER

Contact us directly
info@futurecities.catapult.org.uk

Follow us on Twitter
@FutureCitiesCat

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www.futurecities.catapult.org.uk

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The University of Bristol is recognised for its engaged and collaborative research, its experimental partnerships with the city of Bristol, as well as its world-leading research in city infrastructures, aging and climate change (through the Elisabeth Blackwell and Cabot Institutes). The Graduate School of Education at the University of Bristol is a centre for innovative and interdisciplinary research, addressing the challenges of learning and knowledge for a changing world. Its strengths in international education, learning beyond the classroom, and educational technologies drive research collaborations across the spectrum of future challenges, from sustainability to big data, social justice to globalisation.

Graduate School of Education
University of Bristol
35 Berkeley Square
Bristol
BS8 1JA

Contact us directly
Helen.Manchester@bristol.ac.uk
Keri.Facer@Bristol.ac.uk

Visit our website
http://www.bristol.ac.uk/education/