

ECTP–AABE Position Paper

European RDI Policies for the Construction Sector in the Silver Economy

The construction sector is committed to boosting the European Silver Economy

The European Construction Technology Platform (ECTP) has recognized **the huge contribution that the construction and ICT sectors can make to the growing silver economy**. The ECTP has organized itself to promote, develop and structure research, development and innovation actions (RDI actions) at EU level, and formalized a focus area on “Active Aging and the Built Environment” (ECTP-AABE) to define key domains for RDI actions in construction and ICT. The focus area actively pursues a commitment to the European Innovation Partnership on Active and Healthy Ageing (EIP-AHA) in its Action Group D4 on age-friendly environments.

Europe faces an unprecedented demographic shift. In 2060, almost one of three Europeans will be 60 or older.¹ Due to advances in health care and healthier lifestyles, Europeans live longer and have the opportunity to enjoy good quality of life and independence well into old age. At the same time, demographic ageing puts an increasing pressure on existing health and care systems. Against this background, creating conditions for older persons to remain independent and lead healthy and active lives has become a centerpiece of European policy making. The built environment matters crucially in defining such conditions:² Europe’s aging populations need high quality built environments that suit their needs across the whole life course. Hence, **a building stock and infrastructure that supports independent living and enhances quality of life** of the ageing population, and that makes use of the **full breadth of available ICT solutions**, is important to mitigate health and care, and turn ageing into an opportunity for economic growth and personal wellbeing.

The European housing stock and built environment is up for a major update. At present it is not ready to support independent living over the life course. With current renovation and replacement rates of less than 3%,³ such an update requires well-targeted actions and investment strategies to turn it into a motor for growth and job creation. Due to its scale and reach, the **European construction sector is well positioned to lead such a process** and

¹ Source: UN World Population Prospects, 2012 Revisions

² See WHO (2007) “Global Age-friendly Cities”, available at: <http://bit.ly/1uMrlla>

³ Source: Renovate Europe (www.renovate-europe.eu)

contribute to Europe's silver economy in all stages of designing, planning, retrofitting and implementing **age-friendly, ICT-enriched homes and built environments**. The sector is the biggest industrial employer in Europe, representing 8.8% of the EU GDP, 6.4% of Europe's total employment and nearly 29% of industrial employment with 13.9 million operatives working in every location throughout Europe.⁴

ECTP-AABE has identified the following mid-to-long term research and innovation challenges:

- (i) *need* – to understand and assess the real power and real size of the age-friendly housing and built environment markets today, predict future changes and foster effective investment policies and financing instruments for the upscaling of available built environment solutions, at home, city and community levels;
- (ii) *opportunity* – to explore and capture the impact of age-friendly, ICT-enriched built environments on active and healthy ageing in a holistic perspective, at home, city and community levels;
- (iii) *catalyst* – to facilitate and explore cross-sectoral innovation processes that align actors from construction, ICT, health and ageing disciplines in new coalitions behind well defined strategies for the cost-efficient roll out of age-friendly housing solutions in various market segments across Europe.

Age-friendly home renovation is an excellent pilot case to demonstrate and realize the impact of Europe's silver economy

The ECTP has identified **age-friendly home renovations as a high impact pilot case** to start exploring Europe's silver economy, and to stimulate upscaling strategies for the many good practices of independent living that exist at local and regional levels.⁵ Policies to realize independent living solutions on a broad scale need to include the renovation of the **European residential building stock** as a core element. Box 1 provides preliminary figures on the investment task necessary to meet future demands for age-friendly home through renovations, and estimates the associated economic impact. These figures indicate that the overall investment tasks in the construction and ICT sectors will be about 200 billion EUR in the next 2-5 years. This investment has **potential knock-on effects of 200-374 billion EUR in additional market activation, and 1,7 million new jobs across the European construction and ICT sectors.**⁶

To realize this investment and harness its impact for the construction and ICT sectors, the ECTP believes that a European Silver Economy Strategy on age-friendly housing needs to focus on two priority areas:

(1) **Smart investment strategies are needed to stimulate private and public sector investments into age-friendly home renovations.** The unprecedented spending power of Europe's older population is a great opportunity in this regard. Already now, an important share of older persons' spending power is dedicated to housing maintenance work, where persons above 60 account for 33% of all expenditures, and the purchase of household equipment including ICT, where persons above 60 account for 27 % of all expenditures in EU 27 countries.⁷ Moreover, a

⁴ Source: FIEC, "Key Figures of Activity", 2014

⁵ An overview is available at: "Excellent Innovation for Ageing - a European guide: the Reference sites of the European Innovation Partnership on Active and Healthy Ageing" (see <http://bit.ly/12UMRNR>).

⁶ Sources: Federcostruzioni Italy Yearly Report; Dutch National Statistics Agency.

⁷ Source: Eurostat Household Budget Survey, 2010 data

recent Merrill Lynch report has identified senior living and housing as the most important sector that will potentially benefit from the demographic disruption.⁸ And in many European countries, home ownership rates are still high, with many houses being paid off, in whole or part. At the same time, a considerable proportion of older citizens in Europe have limited financial means and are dependent on either low-cost private sector rental accommodation or social housing. Innovative investment strategies to enable and encourage private sector and public sector property owners to invest in age-friendly home renovation are a precondition for realizing accessible housing for all and reduce inequalities in well-being and independent living.

A European silver economy strategy for age-friendly home renovations needs to create clear insights about how such figures are dispersed among European regions, and how obstacles can be removed for private and public sector investments into age-friendly homes. At present, the added value of “age-friendliness” in renovation or new building projects is not obvious to public or private homeowners, and clear guidelines for the execution and financing of such project scarcely exist. This makes it difficult for potential investors to secure the necessary funds and ensure that their investment is adequately reflected in an increased market value of their property. Developing clear and transparent **loan and financing schemes** for investing into age-friendly homes needs is essential – such as illustrated, for instance, by the recently initiated “Altersgerecht Umbauen” program of the German KfW bank. Moreover, **certification schemes based on European good practices of age-friendly housing** can greatly help the recognition of “age-friendliness” among homeowners and consumers.

Box 1: Estimated investment task for age-friendly home renovations

(i) The following table provides estimated costs for updating a single home to become “age-friendly” based on estimates from France, the Netherlands, and Germany. Costs are split between ICT investments and more immediate construction investments.⁹

	France (ANAH)	Germany (KfW Bank)	Netherlands (Chamber of Commerce)
Construction Sector	-	50.000 EUR (max)	10.000 – 65.000 EUR
ICT Sectors	500 – 4000 EU		8000 – 20.000 EUR
Total	500 – 4000 EUR	50.000 EUR (max)	18.000 – 85.000 EUR

Estimated costs for updating a single home to become age-friendly, split in ICT and construction costs

(ii) If we assume the update of 10 million European homes over a period of 2-5 years¹⁰, the figures translate into an investment task of 100-650 billion EUR for the construction sector and 5-200 billion EUR for the ICT sectors. Conservatively estimated, we can thus assume the overall investment tasks for both the construction and ICT sectors to be about 200 billion EUR over the next 2-5 years.

(2) Smart innovation policies are needed to bring down costs of age-friendly home renovations. The construction and ICT sectors will be a central hub in defining new and more “industrialized” modes of renovating homes in different market segments. In this regard, important synergies exist with current activities of the construction sector around the large-scale

⁸ BoA Merrill Lynch “The Silver Dollar – Longevity Revolution Primer”, <http://bit.ly/1xIT0zj>

⁹ Sources: ANAH (<http://bit.ly/1wBUBST>); KfW credit scheme “Altersgerecht Umbauen” (<http://bit.ly/10YeG7l>) and “Seniorenhuisvestiging vormt brandstof voor economie”, KvK 2014 (<http://bit.ly/1yCTgX5>).

¹⁰ This is a rough extrapolation of the demand that the ABN Amro bank has identified for the Netherlands, see “Vergrijzing biedt kansen voor de bouw”, ABN Amro 2014 (<http://abn.com/1x8MHju>).

provision of energy efficient building renovations, and **the ECTP is an ideal platform to explore such synergies between energy efficient and age-friendly home renovations.** A good example is the Dutch Energy Leap¹¹ that aligns important stakeholders behind new value networks and modular, conceptual solutions for the role out of energy efficient building renovations. Linked to this, **we need a European age-friendly home leap that makes use of scale effects to bring down costs for the provision of age-friendly homes.** The ECTP is aware that this requires a (partial) reorientation of the construction sector to include new partnerships with actors from ICT and the ageing disciplines, as well as a portfolio of modular solutions that accommodate for the full diversity of living situations in later life. A silver economy strategy needs to facilitate the necessary knowledge exchange between all relevant players, and create insights into the disruption of existing business models and value chains.

Together, these two priority areas describe **the scope of possible pilot actions in the domain of age-friendly home renovations.** In the following section, we specify these actions in more detail as part of a research, development and innovation agenda on “Active Ageing and the Built Environment”.

Recommendations for pilot actions and H2020 work programs and calls

ECTP-AABE would like to make the following recommendation for concrete research, development and innovation actions to be addressed in future H2020 calls and work programs. ECTP-AABE is ready to further articulate and contribute to the implementation of these actions, in relation to both age-friendly home renovations and the wider build environment including new buildings:

1. A specific challenge is **to understand the real power and real size of the market for age-friendly home renovations today, and to develop tools to predict future changes in ageing society housing needs and to consider the effects and impact on the construction sector and on the wider built environment.** Pilot actions can help building a solid evidence base on existing and future age-friendly housing markets. We need to consolidate and assess available data on home ownership, disposable income and other asset holdings among the 60+ generation across EU regions, on the types of buildings present in the respective building stocks, and on the current and estimated costs for updating different types of homes. **Such a pilot action would provide the necessary data to specify the investment task of updating the European building stock, and identify possible implementation paths (e.g. private vs. public investments), at EU level.**
2. There is a need to expand and formalize the emerging evidence base about the impact of age-friendly, ICT-enriched built environments on quality of life and independence. For construction to fully deliver its societal contribution for the ageing population, **we need more targeted research on the holistic impact of the built environment,** and investigate the full range of built environment factors that impact on the health and wellbeing of older persons – extending beyond comfort factors, to issues such as the opportunities for individualization and the level of stimulation provided by spaces.¹² A specific challenge is to balance individual choice in the face of the diversity of the target group, and the need to

¹¹ See <http://energiesprong.nl>.

¹² Barrett, P., L. Barrett, and F. Davies 2013. Achieving a step change in the optimal sensory design of buildings for users at all life-stages. *Building and Environment*, 67, 97-104.

make this diversity tractable. Research needs to provide clear indicators and measures on which stakeholders in construction can base design choices, and which can be used to assess the “age-friendliness” of buildings and communities. **A research and innovation action is thus required to extract from the existing knowledge base clear “living profiles” that can be the basis for personalizable modular housing solutions.** Such living profiles need to incorporate the current understanding of the dimensions through which environmental factors affect quality of life and independence, but translate these into clear design parameters that link building characteristics to individual well-being.

3. For the construction and ICT sectors, a specific challenge is to define new partnerships, involving all relevant stakeholders in the age-friendly housing sector (including financial institutions), to explore and agree upon new modes of providing large-scale renovation projects. The basic question such partnerships need to address and solve is: **How can age-friendly home renovations be supplied in a cost-efficient, yet user-centered way, and how does this affect the current value chains in the construction and ICT sectors?** Research and innovation actions are required to explore the relevant disruption of innovation eco-systems, and define innovative business models and partnership around adaptable “building concepts” and modular solutions in different market segments. Such actions can benefit significantly from cross-breeding with programs in energy efficiency and smart cities, where innovation and technological systems approaches have successfully been applied.
4. It is important that new building standards consider the longer term social benefits of age-friendly design as well as the immediate upfront costs to developers. A system of Europe-wide certification to ensure the implementation of consistent design standards for age-friendly houses, such as the UK’s *Lifetime Homes Standard* could lead to greater recognition of the value of age-friendliness. Given the potential size of the general housing market for older people at a time of major demographic change, all new homes and renovation project should be implemented to accommodate this new population trend and be designed to *lifetime homes* standards. **This will require the setting down of minimum national standards** based on sound evidence. Such standards need to be taken up by banks and other financial institution to develop **transparent and understandable loan and financing schemes for older home owners** to invest in age-friendly homes. They also need to be reflected in new certification projects that provide investors with clear evidence about the added value of age-friendly home renovations.
5. Finally, the construction and ICT sectors are also ready to link with ongoing activities in the social sciences, where older persons are investigated as active place makers, navigating their social and care networks in the built environment to maintain and develop sense of place and identity. **The sector would benefit from such a refined understanding of older persons as co-creators or “prosumers”¹³ in the provision of age-friendly solutions.** In line with the EU’s Joint Programming Initiative on “More Years, Better Lives” (JPI-MYBL), the sector welcomes socio-economic research, also through the “Science with and for Society” programs, that addresses responsible research and innovation to deliver built environments that integrate the interests and needs of all using an appropriate ethical framework.

¹³ See Peine, A., I. Rollwagen and L. Neven 2014. The rise of the “innosumer” - Rethinking older technology users. *Technological Forecasting and Social Change*, 82, 199-214.

Contacts

ECTP Offices: REH, Rue d’Arlon 63-67, 1040 Brussels, Belgium

AABE Editorial Team:

Dr. Alexander Peine (Utrecht University, The Netherlands)

Alain Anfosso (CSTB, France)

Prof. Peter Barret (University of Salford, UK)

Jan Desmyter (WTCB, Belgium)

Menno Hinkema (TNO, The Netherlands)

Karin Hoyland (SINTEF, Norway)

Prof. Ger Maas (Royal BAM Group, The Netherlands)

Prof. Gian Marco Revel (UnivPM, Italy)

Prof. Les Ruddock (University of Salford, UK)

Dr. Lorenzo Scalise (UnivPM, Italy)

Contacts:

Dr. Alexander Peine, AABE Focus Area Leader, a.peine@uu.nl

Luc Bourdeau, ECTP Secretary General, secretariat.ectp@cstb.fr

Website: www.ectp.org