

Health of the public in 2040: 'call for input' questions

Thank you for taking the time to answer these questions.

This 'call for input' represents a critical stage in the Academy's 'Health of the public in 2040' working group project. It is an opportunity for the working group to hear your views and aspirations concerning the future health of the UK population. The working group will draw on these submissions to begin developing practical recommendations for the future.

Before answering the questions, you may find it useful to acquaint yourself with the [background document](#).

Selected excerpts may be included in publications arising from the review. Please notify us at the time of submission if you do not wish for your name or input to be published. We are also happy to receive anonymous submissions.

Please try to limit your response to no more than 3000 words, returning the completed form to David Bennett by 4 May 2015: david.bennett@acmedsci.ac.uk (020 3176 2167).

Responses received after this date will be taken into consideration, but please contact the secretariat if you are likely to exceed this deadline.

* Mandatory fields

* Name: Stephen Russell

* Job title: Head of Policy

* Organisation/institution: Landscape Institute. NB: The Landscape Institute is the Royal Chartered body for landscape architecture. It is a professional organisation and educational charity which works to promote the protection, conservation and enhancement of the natural and built environment for the public benefit. It works with government to improve the planning, design and management of urban and rural landscape and, through its advocacy programmes, champions landscape in order to inspire great places where people want to live, work and visit.

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* Is this input submitted as an organisational or individual response? Organisational

* Are you happy for your response to be published by the Academy? Yes

1. The working group and various stakeholders have collectively articulated their aspirations for the future health of the UK population. These are described in the background document (page 2). Do you share these aspirations? If not, why? What other aspirations do you have?

We wholeheartedly support the aspirations articulated in the background document, in particular the first which concerns health in relation to infrastructure and the built and natural environment. In November 2013 we published [Public health and landscape: Creating healthy places](#). This review of the relationship between the built and natural environment (landscape) and public health was developed in response to the shift in responsibility for public health in England from the NHS to local authorities. This review led us to conclude that our approach to the planning, design and management of the built and natural environment should be guided by their importance for public health as for all of their other functions.

In answering the following two questions, you may wish to draw upon the drivers of change set out in the background document (page 2) and the scenarios used by the working group to test these drivers (page 6). When considering these scenarios it should be noted that they are not predictions, but imaginative descriptions intended to be used as a tool for deliberation.

2. What do you think will be the major drivers of change which will influence the population's health over the next 25 years and what are the key uncertainties surrounding these drivers?

The drivers of change of particular relevance to us are the built and natural environment (what we term 'landscape'), as identified in the Academy's 'Call for input' paper under the heading of 'wider external forces'. Landscape is in a constant state of change – it is the result of the action and interaction of human and natural processes. There are therefore an enormous number of factors that contribute to the changes taking place in our built and natural environment with a number of consequences for the economy, society and the environment.

Most people in the UK¹ live in towns and cities and will continue to do so². In light of this, the way our urban areas are planned, designed and managed is likely to have a significant impact on the majority of the population's health. This impact could be positive or negative, depending on the approach that is taken. In our opinion, this represents a significant driver of change.

We believe, based upon our own review of the evidence³, that one of the best approaches is to hang programmes that focus on improving outcomes for health and wellbeing of the population on the delivery of comprehensive, multifunctional green infrastructure (GI). Infrastructure is a familiar term, traditionally denoting networks and systems that provide us with essential services such as water, electricity and transport. GI is more than just delivering each of these services in greener ways. It stresses multifunctionality, using urban networks of natural and semi-natural features, such as green spaces, rivers, street trees and parks, to deliver a wide range of ecosystem services⁴. More emotive language describes GI as our 'natural life support system'⁵ that enables us to work 'with the grain of nature'. But whether we use technocratic or more populist language, there is considerable support for the potential of GI to deliver a wide range of benefits for society, the environment and the economy. Enhancing people's health and wellbeing is just one of these benefits.

¹ http://www.ons.gov.uk/ons/dcp171776_337939.pdf

² Champion, T. (2014) People in cities: The numbers, Foresight, Government Office for Science, London.

³ Landscape Institute (2013) Public health and landscape: Creating healthy places, Landscape Institute, London.

⁴ Landscape Institute (2013) Green infrastructure: An integrated approach to land use, Landscape Institute, London.

⁵ North West Green Infrastructure Think Tank (2008). North West Green Infrastructure Guide.

Our towns and cities are faced with many challenges, yet these are often approached as separate issues. The idea of GI evolved during the 1990s in response to a growing recognition that those planning complex urban areas often ignored the interactions between issues such as public health, flood management, housing delivery, biodiversity, climate change adaptation and so on. This 'silo' approach prevented the adoption of more dynamic, integrated and forward-thinking solutions. GI offers an alternative to this narrow-minded approach – a way of tackling big challenges head on, and delivering multiple secondary benefits at the same time. This integrated approach uses the ability of nature to provide us with the ecological services that we need and helps unlock the potential of our towns and cities to support healthier lives.

Imagine, for example, a city which has cleaned up its rivers and streams, provides footpaths and cycleways along them, links these with larger open spaces such as parks and squares, invests in tree planting in large and small public spaces and streets, develops community gardens, has an educational programme that encourages hard to reach groups to be more active and is committed to implementing sustainable drainage systems⁶ (SuDS). That city's urban heat island effect and flood risk will reduce; there will be increases in air and water quality, active travel, the number of people walking, running and cycling for fun, and growing their own food; there will also be more opportunities for formal and informal education focused on enhanced wildlife. All these changes will have positive impacts on people's health and wellbeing.

We believe that it is now widely accepted that there is enough evidence to support claims about the positive connections between health benefits and environmental conditions. Public policy makers have adopted GI relatively recently. There is therefore only limited evidence explicitly linking GI with improvements in health and wellbeing. There is, however, a substantial evidence base linking health and wellbeing with access to green spaces.

A 2008 report from Foresight on Mental Capital⁷ highlighted that *"The quality of the physical environment also plays an important role in mental wellbeing. Among the significant factors are noise and light levels, building layouts and way-finding, access to nature, and the design of everyday products, buildings, transport systems and information/communication devices, all of which contribute to levels of stress or contentedness, and a sense of inadequacy or self-efficacy and of isolation or connection to others."* GI has a critical role to play in regard to many of these factors.

Another Foresight report⁸ highlighted the importance of green infrastructure to quality of life, stating that *"...there has been an upsurge in concern for green space in and around urban areas, including the development of green infrastructure...Two-thirds think it is important to have green space nearby and the majority think parks and public spaces improve quality of life."*

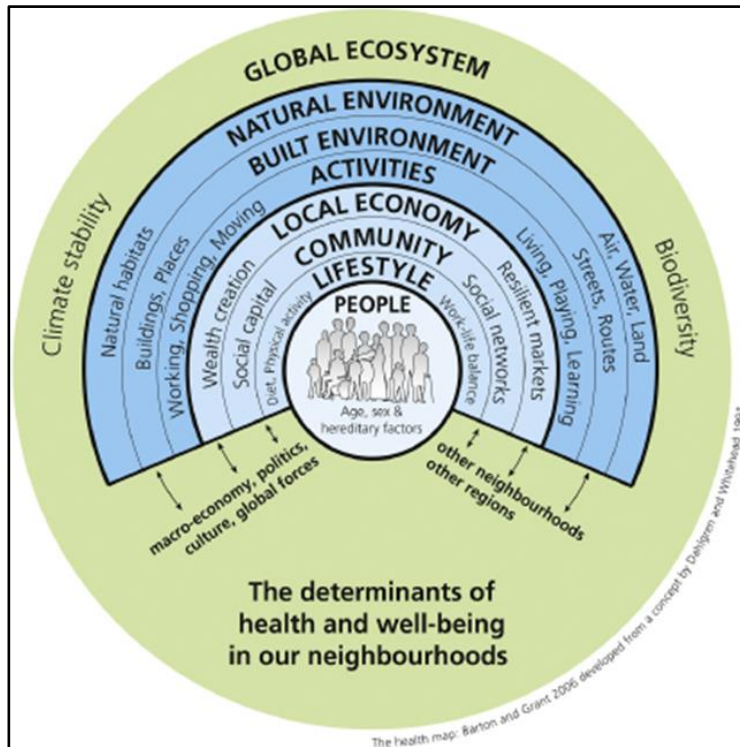
Access to nature and attractive green spaces has been a recurring theme in descriptions of therapeutic environments and healthy lifestyles for many years. Ward-Thompson (2011) traces the history of the emergence of evidence about the links between health and the physical environment. She finds that traditional, conventional wisdom is often confirmed by more recent empirical research, and concludes *"The importance of access to the landscape appears to be as relevant as ever in the context of modern urban lifestyles"*.

Barton and Grant's Settlement Health Map is a useful, graphic summary of the ways in which health and wellbeing are strongly influenced by the character and quality of the places where people live and work. The paper that accompanies the map details the evidence on which the map is based (Barton and Grant 2006):

⁶ Sustainable Urban Drainage Systems, whether constructed as a part of new build or as a retrofit: see <http://www.landscapeinstitute.org/knowledge/SustainableDrainageSystemsSuDS.php>

⁷ Foresight Mental Capital and Wellbeing Project (2008) Final Project report – Executive summary. The Government Office for Science, London

⁸ Foresight Land Use Futures Project (2010) Final Project report. The Government Office for Science, London



Although both Ward-Thompson and Barton and Grant focused on the links between health, wellbeing and the physical environment in general, their work is undoubtedly relevant to discussions on GI. Indeed, the connectivity that typifies a comprehensive GI network means that their conclusions are particularly relevant: continuous GI networks that are integrated within and between urban and suburban areas will be accessible to, and will therefore benefit, large populations.

The evidence review conducted as part of our publication previously referred to, *Public Health and landscape: Creating healthy places*⁹ was used to underpin our *Five Principles of Healthy Places*. Although the evidence relates to the broader concept of landscape, it is also relevant to GI:

Principle 1

Healthy places improve air, water and soil quality, incorporating measures that help us adapt to, and where possible mitigate, climate change.

Principle 2

Healthy places help us overcome health inequalities and can promote healthy lifestyles.

Principle 3

Healthy places make people feel comfortable and at ease, increasing social interaction and reducing antisocial behaviour, isolation and stress.

Principle 4

Healthy places optimise opportunities for working, learning and development.

Principle 5

Healthy places are restorative, uplifting and healing for both physical and mental health conditions.

⁹ Landscape Institute (2013) *Public Health and Landscape: Creating healthy places*. London, Landscape Institute.

The evidence in support of Principle 1 includes a study of the health effects of climate change¹⁰, a review of research into the microeconomic evidence of the benefits of investing in the natural environment¹¹, and a study that shows how the urban heat island effect can be reduced by modifications to urban form¹².

The Marmot review of health inequalities in England post 2010¹³ is one of the key overviews of evidence that supports Principle 2. There are many sources of evidence about the positive connections between healthy lifestyles and the environments in which people live. These include Natural England's information pack on health and natural environments¹⁴ and the BMA's report linking healthy transport with healthy lives¹⁵.

Principle 3 is supported by the Natural England review already cited, by recent PhD research into the connections between local facilities, social interaction and people's wellbeing¹⁶ and by a study that links creating greener building envelopes with quietness¹⁷.

Many studies support the contention in Principle 4, that access to green places enhances children's play and learning¹⁸. There are fewer studies that explicitly connect the design of workplaces and enhanced health and wellbeing, although some do¹⁹.

Principle 5 is all about places designed and used as therapeutic environments. Although the evidence here is about specific sites, these can of course be located within broader GI networks. One of the key researchers in this field is Ulrich, who has been publishing evidence about the impact of access to green spaces on people recovering from illness since the 1980s²⁰.

In parallel with the promotion of GI, biophilic design has been championed as a complementary strategy for addressing workplace stress, student performance, patient recovery, community cohesiveness and other familiar challenges to health and overall wellbeing. The biophilia hypothesis, first defined by Fromm and popularised by Wilson²¹, states that people have an innate affinity with other living beings and with the natural world. Wilson's prime argument was in favour of strengthening the conservation ethic throughout human societies. But interest in biophilia has also led to arguments in favour of a greener approach to environmental planning, design and architecture.

¹⁰ Vardoulakis, S., and Heaviside, C (Eds.), *Health Effects of Climate Change in the UK 2012: Current evidence, recommendations and research gaps*, Health Protection Agency, 2012.

¹¹ Bolund, P. and Hunhammar, S., (1999) cited in Sunderland T, *Microeconomic evidence for the benefits of investing in the natural environment*, Natural England Research Report NERR033, 2012.

¹² Hathway, E. A. and Sharples, S., *The interaction of rivers and urban form in mitigating the urban heat island effect: a UK case study*, *Building and Environment*, 58: 14-22, 2012.

¹³ Marmot, M., *Fair Society, Healthy Lives*, Marmot Review – Strategic review of health inequalities in England post 2010, Department of Health, 2010.

¹⁴ *Health and Natural Environments: An evidence based information pack*, Natural England, Sheffield, 2012.

¹⁵ BMA 2012

¹⁶ Calve Blanco, T., *The social value of local facilities and its impact on residents' wellbeing*. Submitted PhD Thesis, WHO Collaborating Centre for Healthy Urban Environments, UWE, Bristol, 2013.

¹⁷ Van Renterghem, T., et al *The potential of building envelope greening to achieve quietness*, vol. 61, 34-44 *Building and Environment*, 2013.

¹⁸ Beunderman, J., Hannon, C., and Bradwell, P., *Seen and Heard: Reclaiming the public realm with children and young people*, Demos, London, 2007; Ginsburg, K., *The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds*. Clinical Report: American Academy of Paediatrics, vol. 119 no 1 pp 182-191, 2007.

¹⁹ Kaplan, R., *Employees' reactions to nearby nature at their workplaces: The wild and the tame*, vol 82 1-2, pp 17-24, *Landscape and Urban Planning*, 2007.

²⁰ Ulrich, R S., *Health benefits of gardens in hospitals*, *Plants for People*, International Exhibition Floriade, Netherlands, 2002; Sternberg E., *Healing Spaces: The science of place and wellbeing*, Belknap Press of Harvard University Press, Cambridge, Massachusetts, 2009.

²¹ Wilson, E. O., *Biophilia*, Cambridge, MA: Harvard University Press, 1986.

There are significant overlaps in the research cited in support of the biophilia hypothesis, and that used by the Landscape Institute and others. But there is a growing body of research that seeks to test the biophilia hypothesis. For example, Grinde and Patil's ²² evaluation of some fifty relevant empirical studies concluded that an environment devoid of nature may have negative effects on people's wellbeing.

Translating this growing body of evidence into practical action relies, in part, on public policy that is supportive of GI. We have been encouraged by progress in this area. For example, the planning system establishes the framework within which decisions are made about land use. It therefore has a profound impact on both the aesthetic and functional qualities of our towns and cities. The vast majority of these decisions have consequences on people's health and wellbeing.

The National Planning Policy Framework (NPPF) recognises this, acknowledging that the planning system needs to create "...a high quality built environment, with accessible local service that reflect the community's need and support its health, social and cultural wellbeing". It goes on to state that planning policy and decision making should create places that are safe and accessible, where "crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion" and that "Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and wellbeing of communities."

In addition to direct references to health and wellbeing the NPPF also highlights the importance of giving due consideration to future environmental changes, in particular climate change. In the context of health and wellbeing this is significant, given the relationship between public health and issues such as air quality, flood risk and the urban heat island effect. GI is identified as one of the key methods for addressing these challenges.

However, policy in support of GI is not enough. We have identified a number of key uncertainties surrounding this particular driver of change which will have an impact on the ability of decision-makers to deliver GI in our towns and cities in order to improve the health of the population.

- A number of local authorities do not have GI strategies in place – and GI does need to be strategically planned. Many local authorities still have no identifiable policies or documents which refer to GI and many appear not to be working strategically with neighbouring authorities. This latter point is significant because GI, as a network of natural systems, transcends political/administrative boundaries.
- Reduced public spending has had a number of negative impacts, including a lack of funding for maintaining existing assets, let alone the delivery of new GI close to where people live. It has also reduced the number of individuals within local authorities with the skills necessary to demand GI interventions and undermines the ability of authorities to act as an 'intelligent' client. The recent election outcome, and a lack of clarity over where further cuts will be made, add to this uncertainty;
- The natural environment is still seen as a 'nice to have', and as a result budgetary pressures which have seen some local authorities predicting they will not be able to fund statutory responsibilities, GI is afforded a lower priority;
- Recent planning reform, despite references to GI, has not given the concept equal priority to other forms of infrastructure. This lack of concern at a national level is demonstrated through recent Government action which has archived Natural England guidance on GI. Natural England is well placed to provide this advice but it is unclear what role it will be able to play in the years ahead;
- A failure to plan in the long-term and the lack of interest in strategic planning, particularly relevant to the short term nature of political cycles. This is particularly pertinent to GI as the benefits of GI accrue over time;

²² Grinde B, Patil GG. Biophilia: Does Visual Contact with Nature Impact on Health and Well-Being? *International Journal of Environmental Research and Public Health*. 2009; 6(9):2332-2343.

- GI, in the real sense of the term, is multifunctional and therefore the organisations/teams who could be taking an interest in its planning/design and delivery need to act together. A failure to coordinate/collaborate properly undermines GI's potential to deliver public health outcomes;
- Lack, despite potential, of public health involvement in place making and it is unclear how this could be improved.

3. What are the potential shocks or disruptive events that might need to be taken into consideration in planning for the future?

Climate change, and in particular the increased frequency of flood events and heatwaves, need to be taken into consideration when planning for the future. The nature of flooding, and the way that development has been allowed to happen, often means that some areas see recurrent incidents of flooding leading to increasing and repeated issues around mental health and chronic stress. We also need to plan for heatwaves and the associated impacts on public health that this can bring, from heat related deaths and illness through to a greater number of days of poor air quality, particularly in urban areas.

Fortunately there is a link here back to our advocacy for GI. As a nature-based solution to a multitude of challenges GI is able to act as resilient infrastructure to help us adapt our cities to the uncertainties of climate change related impacts.

4. What research evidence is (or will be) needed to address these aspirations and reduce these uncertainties, and to what extent is the required research currently taking place?

As indicated, there is an increasing body of research in support of the relationship between GI in our towns and cities and public health. However to a large extent much of this research has been undertaken by those outside the public health sector. It would be valuable if there was a public health check on this to ensure that it is persuasive enough for this particular audience.

We also believe that it is necessary to give consideration to an analysis of the current structures in place within local authorities to ensure that public health objectives are being delivered through the planning and environment functions. The shift for responsibility for public health from the NHS to local authorities, in our opinion, provides a potential opportunity to reunite public health with these other functions, but it is not yet clear how much has been made of this opportunity. For example, are there barriers in terms of governance and institutional infrastructures which need to be overcome in order to ensure that the planning and design and management of both the built and natural environment improves the health and wellbeing of the population?

5. Given the above, what needs to be done to support, deliver and realise the value of this research? Particular consideration should be given to:

- a. Research capacity (for example, training, workforce, skills, relevant academic disciplines and funding)**
- b. Research infrastructure (including physical, virtual and institutional infrastructure)**
- c. Mechanisms for translating research into policy and practice**

n/a

6. Please add any additional comments, not covered by the above, which may be of benefit to the Working Group.

n/a