Wellbeing by Design from Green Infrastructure

...Planning and Integration for Multiple Benefits

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“Everyday green space and experienced well-being: the significance of wildlife encounters”

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Context—implications of NHS treatment based model

Over 50 years, UK National Health Service spending has risen from 3.4% to 9.5% of GDP in an increasingly affluent society

(New Economics Foundation, not dated)

So...why is our wellbeing not increasing?

...A new approach is clearly needed.
Context—need for preventative model

... focussed on the quality of how & where we live our lives

“Evidence suggests spending on health care could be reduced if greater investment was made in preventing ill health before it happens. For instance, it costs 27 times more to achieve a reduction in cardiovascular mortality through clinical interventions than it does to achieve the same result through local public health spending.”

Context - Green Infrastructure ...G.I. Benefits Driven Approach

... Poor environments cause disease inducing stress
... Performative environments provide Multi-functional Opportunities (Economic, Environmental & Social/ cultural) to combat stress

... Green Infrastructure = a cost effective agent for wellness
... building personal / societal resilience

Green Infrastructure
An integrated approach to land use
Landscape Institute Position Statement© March 2013 Landscape Institute

GI is the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect villages, towns and cities. Individually, these elements are GI assets, and the roles that these assets play are GI functions. When appropriately planned, designed and managed, the assets and functions have the potential to deliver a wide range of benefits – from providing sustainable transport links to mitigating and adapting the effects of climate change.

Green infrastructure assets
GI assets range from country parks, lakes and woodlands to urban interventions such as green roofs and street trees. They can be specific sites at the local level or broader environmental features at the landscape scale within and between rural and urban areas such as wetlands, moors and mountain ranges.

Green infrastructure functions
GI functions are the roles that assets can play if planned, designed and managed in a way that is sensitive to, and includes provision for, natural features and ecosystem services. They may have obvious primary functions, but each asset can perform different functions simultaneously – a concept known as multifunctionality. For example, street trees add aesthetic quality to an urban area, but will also reduce airborne pollution, provide shade, reduce urban heat island effects, mitigate wind chill and turbulence and increase biodiversity.
Context - research evidence for green infrastructure + wellbeing

A growing body of cross-disciplinary studies suggest:

...exposure to green spaces can have **positive impacts on human health and wellbeing**
(Keniger et al., 2013; Hartig et al., 2014),

...providing appealing opportunities for **health promoting physical activity**
(Bowler et al., Thompson-Coon et al., 2011)

...Support **positive social interaction**
(Maas et al., 2009b),

...**restoration from stress and cognitive fatigue**
(Herzog et al., 1997; Kaplan, 1995; Ulrich, 1983).

**Etc.etc.etc.**

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**G.I. + ** **Wellbeing** Benefits Driven Approach**

*Public Health & Landscape Creating Healthy Places* Landscape Institute Position Statement © November 2013 Landscape Institute

[http://www.landscapeinstitute.co.uk/PDF/Contribute/PublicHealthandLandscape_CreatingHealthyPlaces_FINAL.pdf](http://www.landscapeinstitute.co.uk/PDF/Contribute/PublicHealthandLandscape_CreatingHealthyPlaces_FINAL.pdf)
Context— legislative opportunity ...
April 2013, the ‘Health and Social Care Act’ (2012) 
connect public spending silos...Health + Spatial Planning

...fragmented Health Agenda delivery before April 2013
...health authorities/ trusts deliver health planning /provision = treating acute or chronic ill health.
...local government delivers economic development, spatial planning and environmental protection
...Health & Safety Inspectorate / environmental protection services prevent or treat health threats.

After April 2013... public health, health planning & spatial planning brought together in
Unitary local authorities & ‘Health and Wellbeing Boards’ uniting NHS, public health,
adult social care and children's services.

...responding to Marmot Review of health inequalities in England (Marmot et al., 2010),
... “create and develop healthy and sustainable places and communities”

...potential for Green Infrastructure (GI) (though spatial) to contribute to Health Agenda
April 2013, the ‘Health and Social Care Act’ (2012) connect public spending silos...

Health + Spatial Planning

The challenge for society - relate health policy-making & our GI resource design & management more effectively to deliver on this aim

...We need a cultural paradigm shift to delivering Health through Green Infrastructure

The challenge for all of us - deliver that culture

...A culture doesn’t just happen…it needs to be resilient & resourced to deliver and grow...
Health through Green Infrastructure...Building a Resilient Culture
... Research, Education and Practice

The challenge for all of us - deliver that culture...engage across the ’virtuous circle’!
...enhancing our effectiveness as reflective/ reflexive practitioners

Research–
...improve understanding
...explore potential for Health + GI synergy
...support investment in solutions / delivery

Education–
...multidisciplinary learning culture
...prevention of silo thinking
...presumption to engage with GI for Wellbeing Agenda

Practice–
Demonstrate examples of performative GI
Prove relevance / get public/ political/ financial buy-in

...new opportunities for training, education, careers and business
Research - Collaboration with European Centre for Environment & Human Health, Cornwall County “In Residence” (ERDF) Award funding

Design/ research premise, findings & recommendations:
1- Wellbeing compromised by stress caused by Economic, Environmental & Social/ cultural agents
2- Wellbeing compromised by stress caused by loss of control / lack of relationship to landscape context
3- Demonstrate relevance of GI through activity delivering meaningful, measurable benefit outcomes (Economic, Social/ Cultural and Environmental), agreed to meet need
4- Agendas set & solutions delivered by communities for a personal relationship with GI’s relevance
5- Multi-sector & Multidisciplinary engagement required for resilience - public, private and voluntary
6- Delivery & Resilience- Link to established frameworks & local partners – Neighbourhood Planning
Research - Collaboration with European Centre for Environment & Human Health, Cornwall County—'WfGI' (Wellbeing from Green Infrastructure) Neighbourhood Planning project.

Delivery:
- Extend agenda of Neighbourhood Planning-community priorities for Social, Environmental and Economic benefit
- Relate challenge to local mosaic of GI place types
- Produce program of WfGI project possibilities...the WfGI tool explores these through...

WfGI Project Themes delivered through workshops, on-line resources and mapping:
1. **Food & Wellbeing** - nutrition & income, combating food poverty- allotments, CSA, box schemes, community kitchens etc.
2. **Fuel & Wellbeing** - Bio-fuel from smart GI management- hedgerow, woodland & crops, LHP systems & fuel credits etc.
3. **Nature & Wild Wellbeing** - Ecosystem protection, wildlife conservation, green tourism, green prescription & green gyms etc.
4. **Water & Wellbeing** - resource conservation, flood / pollution prevention, reed beds, swales, water butts etc.
5. **Social Wellbeing** - Linking people through green space routes & programs, celebration, play, education etc.
Research - ‘WfGI’ (Wellbeing from Green Infrastructure) Neighbourhood Planning project.

Predicted Outcomes & Beneficiaries— Demonstration performative, relevant GI

**Public Health Framework Outcomes**

- “Helping people live longer happier and healthier lives
- Utilising green & blue space for exercise/health reasons
- Increased proportion of physically active adults
- More active people and supportive environments
- Promoting access to information, advice and support for work, volunteering and progression to work, and reduction in the likelihood of debt, poverty and homelessness
- Supporting for Independent Living
- Supporting people with mental illness or disability in settled accommodation
- Employment for those with a long term health condition including those with a learning difficulty/disability or mental illness
- Supporting the re-engagement of young people into education, employment and training
- Implementing creative approaches to the ESF (Not in Education Employment or Training) for young people in particular those with complex needs: 16-18 year olds NEET (4%), Care Leavers who are NEET (4%), Teenage Parents NEET (40%), 16-19 year olds with LDD in NEET (4%), 19 year olds not known (7%)
- Providing Green Gym and prescription for primary care health promotion & treatment
- Promoting the wellbeing sector as a potential driver for the Cornish economy”

**Local Economic, Educational & Environmental Partnerships Outcomes**

- “Local food production, marketing and distribution through community supported agriculture and Landshare programs, boosting local economy and buffering against food poverty
- Community biomass fuel production & energy generation through low carbon technology boosting local economy and buffering against fuel poverty
- Responsible management of environments to promote resilient, bio-diverse wildlife communities & ensuring a balanced provision of effective amenity space for human relaxation and recreation
- Green classroom opportunities to create generations for whom green infrastructure is part of everyday life vocational training opportunity (Transferable Land based Skills Training Initiative) for
- Local people to engage in skills vital to the management and delivery of resilient Green & Blue Infrastructure
- Local employment opportunity being paid to deliver Resilient Green Infrastructure and its service industries
- Advance development and management of Resilient Green Infrastructure resource around potential development areas
- Provision of key research opportunities to create positive research and design development feedback loops for the pilot studies, and to support the promotion of Resilient Green Infrastructure initiatives elsewhere.”
Research - (PhD support and post doctoral collaboration) Dr. Sarah Bell

“Perceptions and use of green (and blue) space: implications for health, wellbeing and landscape design”

Emplaced ‘flow’: deep and micro, influenced by ambient conditions (e.g. whilst sailing, surfing, fishing, cycling, gardening, walking)

Long-term achievements & more immediate gratification: Pursuing internal states of physical fitness; appreciating tangible external markers of achievement; short-term cognitive release through physicality (e.g. golf courses, playing fields, clay pigeon shooting, running tracks, fishing lakes, rivers, well-connected larger parks, allotments/gardens, coast/countryside/woodland trails, beaches/the sea)

Supportive/challenging social settings for mutual hobbies (e.g. running clubs, kayaking clubs, cycling clubs, surfing community)

Connecting experiences: opportunities for a conversation; engaging in a convivial social ambience without feelings of crowding; shared comfortable companionship with like-minded individuals; family leisure (e.g. harbours, beaches, lakes, woodlands, coastal/countryside trails, gardens, parks, playgrounds, playing fields)

Restorative immersive experiences: sense of space; opportunities to explore; captivating multisensory spaces; relaxing place rhythms (e.g. woodland/countryside trails, coastal path, beaches, lakes, rivers, National Trust-type gardens)

Immersive inspiring experiences: expansive, power and perspective; spiritual wellbeing and diminutive peak experiences; sense of freedom; simple pleasures of wildlife; connecting to nature’s temporal cycles (e.g. coast, distant countryside views, ancient semi-natural woodlands, individual wildlife encounters)

Cultural/personal place meanings: existing cultural/political place narratives (e.g. green spaces as health-giving, notions of the rural idyll etc); faith-based meanings (e.g. nature and creation); and, personal sense of place including feelings of belonging, identity, rootedness, attachment; places as markers of ‘milestone moments’ (e.g. specific views, coastal proximity, woodlands)

Shared place meanings: places as containers of important relationships and shared experiences over time (e.g. early courtship/marriage/engagement settings, family leisure traditions at the coast, memorials to important people from the past)
Design/ research premise, findings & recommendations:

1– The **qualities** of the places people describe as healing/ wellbeing inducing must be **better** understood to guide their ongoing management and as a guide to future design.

2– How the interplay between **individual agency and people’s changing life patterns** influences personal view of green spaces as meaningful places for wellbeing, needs to be better understood, in order that places can be designed not just functionality but to help and embody relevancy and meaning.

3– The **nature of peoples wellbeing experience of space itself** needs to be better understood and **defined** to guide objectives for design and management supportive of particular forms of human interaction with/ wellbeing benefit from place.

4– The **theoretical underpinning (through research and practice)** needs to be **made available more conveniently**, for deployment by those proposing GI/ Wellbeing design & management and for those **commissioning and resourcing health and greenspace/ amenity services**.

5– GI & Wellbeing design and management must deliver placed based wellbeing benefits through both ‘**the plumbing & the poetry**’, we need GI to be **functionally relevant but also performative through its inherent meaningfulness to its users**.
LI paper identifies ‘determinants of health’ and defines generic benefits that **GI assets** can deliver… **GI Wellbeing functions** Healthy places:

1. improve air, water and soil quality, mitigate climate change
2. overcome health inequalities, promote healthy lifestyles
3. provide comfort, increase social interaction, reduce antisocial behaviour, isolation and stress
4. optimise opportunities for working, learning and development
5. are restorative, uplifting, healing (physical and mental health)

**Multifunctional GI is key**

Consult, plan and design to maximise benefits… (and then monitor & promote!)
Creating healthy places – 10 recommendations

1. A bigger role for public health in placemaking
2. A resource commitment
3. Realise national requirements at the local level
4. Recognise landscape as an asset
5. Landscape performance indicators for public health
6. Collaboration is key
7. Multifunctional benefits that landscape offers
8. Use Health Impact Assessments
9. Ensure community buy-in
10. More evidence is needed for investment and action
Education - Course & project design & delivery
Plymouth University- M Arch./ B Arch. Design Studio/ Theory
“Connecting Sustainable Practice”
& “Green Infrastructure & Wellbeing”

Approach:

1– Build GI & Wellbeing culture in future designers and managers of our environment, society & cultural

2– Avoid professional silo working by demonstrating benefits and efficiencies of interdisciplinary working

3– Demonstrate ‘client facing’ benefits of approach in delivering economic, social/ cultural & environmental benefits

4– Deliver the concept of the human infrastructure as an ecosystem. Stress importance of the interconnected scales of activity; micro to the macro

5– Use ‘live project’ education Connectedness to delivering relevant, ‘real world solutions’
Education - Course & project design & delivery
Plymouth University - M Arch./ B Arch. Design Studio/ Theory
“Connecting Sustainable Practice” & “Green Infrastructure & Wellbeing”

New Flax-New economy
An evaluation of Flax land in New Belfast and how it could be developed into an economically viable community for the benefit of wellbeing.

[Diagrams and illustrations related to urban planning and environmental sustainability]
Practice example— Public Realm & Co Design—CABE Spaceshaper

Recommendations:

Establish relevant brief requirements/outputs through thorough co-design

...Quality not quantity – developing shared understanding of Place Quality
...establishing a basis for Social Wellbeing from the site’s community & their GI.

Spaceshaper process

- practical toolkit delivered through a workshop of stakeholder group representatives
- captures diverse views of space users/managers
- discuss how the space works for different people
- encourages people to demand more from GI
- designed to support change/improvement
- assessing existing and planning new sites
- used as an element of a broader consultation
Practice example—Public Realm & Co Design–CABE Spaceshaper

...successful co-design can:
- Resolve opposing interests/users for action
- Identify the strengths and weaknesses
- Measure how well proposals meet inclusive needs
- Establishing priorities
- Stimulate new ideas
- Track changes in improvements over time
- Help build relations with hard-to-reach groups.

...Spaceshaper covers eight specific areas of space quality (demonstrating potential relevance of GI):
- **access**: finding your way and getting about
- **use**: activities and opportunities the space has to offer
- **other people**: how the space caters for different needs
- **maintenance**: how clean and cared for the space is
- **environment**: how safe and comfortable the space is
- **design and appearance**: what the space looks like and what materials it uses
- **community**: importance of space to local people
- **you**: how the space makes you feel.
Practice e.g. - Learning Environments GI- (Connor Downs Primary School, Cornwall)

Recommendations:
- Build culture of performative expectation of benefits from GI in whole school community through
  - Tangible benefits e.g.
  - relevance to learning curriculum, improved working environment, multisensory play/learning experiences, engagement with/benefit from wider community partners, fresh food!
Practice e.g. - Public Realm & Interpretative GI (Sutton Bank Visitors Centre, North York Moors National Park)

Recommendations:
- Embody in all public GI design the importance of nurturing ‘Homo ludens’. In play at all ages we develop our most meaningful relationships with place
- Use the genius of place to shape the design and bring out the innate performative value of GI
Practice e.g. - Healing Environments Gl. ('Play for Life' garden, Royal Cornwall Hospital, Truro)
Recommendations:
Engage diverse 'client group' in targeted appropriate consultation program
'Layered' design brief development demonstrating specific stakeholders group outcomes delivered from Multifunctional space balancing spatial subdivision with inter-visibility to facilitate synchronous diverse use and safety-oversight
Conclusions— We should “make the world the way we like it” so that it likes us back!

... Research, Educate & Practice GI Design to deliver Wellbeing,

Further reading and recommendations:
1– Visit Freiburg! — (Vauban & Rieselfeld)