

GREEN INFRASTRUCTURE: DETERMINING THE NEED AND DECIDING ON THE ACTION

Roger Crofts, Royal Scottish Geographical Society Keynote address to Scottish Green Infrastructure Conference 6 October 2015

Introduction

A quiet, but fundamental, change has occurred with medics prescribing a totally different approach towards treatment, placing the emphasis on what the individual can do out of doors. For example, in the Edinburgh Cancer Centre at the Western General Hospital is the poster with the slogan **sit less and move more** as some physical activity is more beneficial during and after cancer treatment by helping to manage tiredness and fatigue, boosting mood, reducing stress and anxiety and managing weight gain. And, the poster notes that physical activity can also help to reduce risk of other health problems such as type 2 diabetes, heart disease and strokes.

Given Scotland's relatively poor health record, and the concentration of ill health within the most socially and economically deprived people and places, I come at the subject of the need for Green Infrastructure from the perspective of the needs of the individual. It is based on the evidence of the benefits that outdoor activity brings to people collectively and individually, rather than from the perspective of developing green infrastructure. There are, of course, many good examples of green infrastructure provision in Scotland, but please remember that they are a means to an end and not an end themselves.

So I shall address three questions: why do we need green infrastructure, what can we learn from evidence and activity elsewhere and what action is needed in Scotland?

First why do we need green infrastructure?

I will focus on the variety of issues around public health, the benefits which new and different provision can bring; and the disbenefits of environmental mismanagement in our towns and cities. I will not focus on the broader benefits to the environment, such as flood alleviation and carbon storage, as these issues have been dealt with by previous speakers.

People are disassociated from their surroundings so prefer not to go out there. Individuals do not feel safe feel danger when they go out of doors; they are faced with neglected and unattractive ground full of waste and debris; they are cowered by buildings cheek by jowl; and they have no association across the generations with the open air and especially with nature. These conditions are likely to affect individuals and families that are socially and economically deprived and live in what we now recognise as areas of high deprivation, especially in our cities and towns. There is clear evidence of the spatial concentration of deprivation in certain areas of the towns and cities of central Scotland from the data in the Scottish Index of Multi Deprivation. And, often this deprivation will be transmitted from one generation to the next in a cyclical fashion, hence the label *the cycle of transmitted deprivation* coined in the 1970s unfortunately still valid today, despite great efforts to fix the problems. So, surely we should be helping these individuals and families to have better life styles and life chances given the high public expenditure on social benefits, and on welfare and medical programmes!

People are given the wrong medication. Traditional medication is dispensed at a high cost, for example the analgesics such as paracetamol cost some £13m per year despite the fact that they can be bought cheaply on the high street from discount shops. And, all too often, the medical services focus on specific medical treatments and not on the needs of the whole person. And yet, there is plenty of epidemiological evidence of increases in people's self-esteem and their physical wellbeing when they have access to and experience of the outdoors, whether close to home or further afield. So surely the better 'pill' is outdoor experience and activity. It is interesting that the internationally renowned mental health institutions of the Victorian period, such as The Crichton in Dumfries, were based on locating the residences and care facilities in well designed and well maintained open space, and yet too often our modern facilities have a surrounding concrete environment.

It has also proved to be very challenging to ban smoking from hospital grounds. And, if one goes to your GP and suggests that they might use community-owned space for outdoor recuperation for their patients, they say they will think about it. Of course, there are questions about risk assessment and supervision of the place and registration of the carers, but these can easily be overcome with a different mind-set. Things are changing but, as usual medical and other professionals are not working together effectively or often enough to find solutions for the whole person or family or locality by looking at the problems and identifying solutions in the round and integrating across bureaucracies, and prefer to remain in their built-in silos with the safety of insularity. So, more holistic approaches are required using sound evidence which is not necessarily "the pill to cure all".

I do, however, want to recognise good progress in Scotland. There are excellent examples of action on the ground such as:

- St Ninian's Primary School in Stirling started a national revolution in getting all of its pupils to run or walk a mile a day around the playground;
- Joint action by Tayside Health Board and local ranger services has resulted in increased confidence and self-esteem among patients, increased physical activity, improved feelings of well-being and a reduced dependence on prescription drugs.

Environmental mismanagement in and around our towns and cities. Planners claim to plan with greenspace in mind and the National Planning Framework 3 has a strategic objective of green infrastructure. But, the practice is far from this as the whole basis of planning is now to achieve the narrow objective of sustainable economic development, and the need, especially, to provide more land for houses and for industrial and commercial development. For example, the South East Scotland Plan, recently out to consultation, fails to refer to the quality of the environment in existing or new building of houses or to link quality of the environment with lessening of social deprivation as a major outcome in 20 years time. In the process of achieving these specific but narrow aims, valuable food producing land will be built on and lost forever, water courses will be engineered underground and lose their naturalness as a green corridor, and building will occur on land where some nature survives rather than using brown field sites. So our surroundings are not getting better because the planning system is failing us for policy reasons and the stranglehold of the building developers. Surely, we need a multiple objective planning system, especially to reduce levels of deprivation, rather than one focussed on development potential in and around our towns and cities!

Second, what can we learn from evidence and activity elsewhere?

1. The evidence base

Physical inactivity is major health risk according to the World Health Organisation. They consider that thirty minutes a day of physical activity makes a substantial difference to the health of individuals.

In the UK, physical inactivity causes 10.5% of coronary heart disease cases, 18.7% of colon cancer cases, 17.9% of breast cancer cases, 13.0% of type 2 diabetes cases, and 16.9% of premature all-cause mortality. In Scotland, recent work by the British Heart Foundation for the Scottish Activity Research Collaboration shows that the costs of physical inactivity in primary and secondary care sectors amounts to £94m, equivalent to £18 per person per year.

Scientific evidence available from many disciplines is available and shows, irrefutably, that access to nature plays a vital role in human health, wellbeing and personal development. Research indicates that humans may be dependent on nature for psychological, emotional and spiritual needs that are difficult to satisfy by other means.

Survey based evidence shows that outdoors activity has physical and mental benefits: physically reducing factors contributing to cardiovascular disease, rheumatoid arthritis, diabetes and hypertension, and mentally improving self-esteem, alleviating anxiety, increasing self-awareness, and reducing psychosis. And, all of these benefits help to reduce the occurrence of cancer or its re-occurrence, improve mental wellbeing and reduce coronary heart disease.

A recent review of all the post 2008 literature on the links between human health and outdoor experience especially in all types of parks, released by Parks Victoria, Australia and Deakin University, Melbourne showed conclusively that:

- Access to safe and high quality green space benefits individuals across every stage of their lifespan and enhances their physical, mental, social and spiritual health and wellbeing.
- Access and proximity to safe high quality parks results in increased physical activity levels and improved health outcomes, including mental health.
- In urban areas, parks foster social connections that are vital to community cohesion and contribute to social wellbeing.
- Contact with nature through parks can enhance spiritual health which underpins all other aspects of health.
- For children, accessible and safe parks foster active play, which is associated with physical, cognitive and social benefits.
- For adolescents, parks improve mental and social health during what is often a tumultuous time of life.
- Park use is linked to physical and psychological health benefits among adults, especially older adults.
- The potential health benefits of parks may be diminished through barriers such as crime and safety concerns, injury risk, disabilities, gender-related concerns, social and/or cultural norms, proximity/accessibility, weather and pollution.

There is also abundant evidence that outdoor activity can save a great deal of scarce public sector cash. For example, the Scottish Physical Activity Task Force estimated that if physical inactivity in Scotland decreased by 1% each year for the next five years, the economic benefit associated with the number of life years saved due to preventing deaths is estimated to be £85.2 million, yearly hospital admissions for coronary heart disease, colon cancer and stroke would fall by around 2,231 cases, and NHS Scotland could have a possible yearly cost saving of £3.5m.

Also, at a personal level, have you ever thought about the relative costs to individuals of the outdoor gym compared to the indoor gym? My kids have! Gym subscriptions cost almost £1,000 per year for three of them when at the same time dad used the outdoor gym for free!

2. The Healthy Parks Healthy People approach internationally

The research-based evidence and a growing divergence between urban populations and natural parks persuaded Parks Victoria in Australia to develop the theme of 'healthy parks healthy people' in the early 2000s to entice people to visit and enjoy national parks, nature reserves and other space protected for nature. Recognition of the health benefits meant that the idea spread into more urban situations, although it took some time to get medics on board. Now, it is an international movement with representation from many expert areas of medical and environmental knowledge following a major conference in 2011 and further promotion at the World Parks Congress last year in Sydney, where a presentation on Scottish action was given by SNH.

3. The lessons

So what lessons can we learn from the evidence and from experience elsewhere? There is plenty of evidence of the health benefits of physical activity outdoors. Taking it forward requires new partnerships between education, medicine, urban planning, outdoor recreation and nature.

Remember that outdoor activity and closeness to nature does not have to be with pristine nature in far distant places from where majority of people live. Restored, heavily modified or even newly created areas can be beneficial. Back home in Musselburgh, I can walk by the river and see dippers and kingfishers 10 minutes' walk from the main street of the town. I can join many others in outdoor gym exercises on the lightly managed, highly accessible links at Fisherrow. And, I can walk or run or cycle through the new nature area created from the waste of a coal-fired power station. And, I am not alone, countless hundreds do the same. So, we do not have to be fancy or expensive in developing and maintaining green infrastructure. Indeed, we have the knowledge and experience to let nature take its course in the development of outdoor activity space.

Remember that health and environmental benefits can go hand in hand, particularly improvements in ecosystem services and people's well-being.

Remember that we are misspending money in medical prescribing, as I have made clear.

Remember we are also misspending money in our green infrastructure. So, for example, why are we spending millions on restoring our parks, through HLF Scotland, to their pristine Victorian state when hardly anybody ever uses them? Surely, we should be spending money

to encourage people to benefit from using the outdoors for their own personal well-being. For example, why are we spending millions of pounds on sustainable urban drainage schemes and not tackling the causes of the problem of runoff increases in urban areas and upstream? Surely, we should be demanding use of permeable surfaces and water retaining structures as part of planning and building permissions and infrastructure development. And, why are we not addressing much more effectively the poor management of the upper areas of our water catchments where environmentally naïve land drainage, tree felling and replanting, and wind turbine emplacement occurs every day radically changing the natural regulated flow of rivers and streams and causing untold problems downstream. Surely, that is a problem which must be addressed in the land reform legislation currently before the Scottish Parliament. These are classic examples of silo thinking and operation we know so well and seem incapable of getting away from.

And, remember to join in as partners with international bodies in the ground breaking Healthy Parks Healthy People programme to share knowledge, exchange ideas and learn about good practice.

Third, what action is needed in Scotland?

I recognise that there is a lot going on, but I do not think we have crossed the rubicon as the medical professionals are not sufficiently engaged and the planners and their development acolytes are not delivering integrated, multi-objective planning in practice in our towns and cities. So, I propose a simple 4-point plan for the Scottish Government to lead on and for the professional bodies and their members across the span of expertise, and the local councils and all local partners to work on. The overall objective must be to achieve greater physical and mental wellbeing of people and improved local environments for them to use actively.

1. The whole nation activity plan

Let's have a real action programme of healthy people healthy outdoor activities throughout Scotland, in every health board area, every primary care group and every GP surgery in a partnership with outdoor activity experts and providers. This should be actively backed by the Scottish Cabinet in a joined-up programme involving health, environment, planning and economic development portfolios. The Minister for the Environment, Climate Change and Land Reform is taking a lead but her colleagues must join her.

2. Automatic prescription of the 'outdoor pill'

Rather than prescribing complex drug treatments because they exist and giving out analgesics when they can be bought cheaply at high street retailers, GPs and hospital based medics should be encouraged, as part of their funding deal, to prescribe outdoor activity in association with local providers, what we might call *Outdoorphins* and *vitamin G* (for green) alongside their mainstream medical support. It will require the training of primary care medics and especially GPs and pharmacists in the offering of alternative therapies involving outdoor activity, backed up by appropriate infrastructure that are built into nature, and operationally cost effective.

3. Deliver special programmes for target groups and places

Recognising that the poorest health in Scotland is with those people in the areas of greatest multi deprivation, priority should be given to action in these areas and for their residents. It

must be an integrated and holistic programme by all parts of the public sector working effectively together: education, health, social work, planning and development, finance, and working with the communities themselves and their leaders and with the voluntary organisations.

Increased resources for outdoor activity groups should be provided, funded from the savings in stopping dispensing unnecessary medicines, rather than a concentration on green infrastructure itself.

The other target group should be school children, partly given the increasing levels of obesity and lack of outdoor experience, and partly because effective action can have a very beneficial effect on the behaviour of parents and other members of the family. Schools programmes for use of the outdoors for healthy lifestyles can also achieve a number of the objectives in the Curriculum for Excellence. School teachers and parents associations should be actively encouraged to lead on these programmes, as well as be helped to gain experience from the exemplars which already exist.

4. Make the urban land use planning system fully integrated and multi-purpose

It is essential to make sure that there is integrated planning of people's leisure space alongside housing and economic development land. And the known benefits of a green, clean and friendly environment should be always part of the planning, building and operation of new hospitals and local health and care centres. It should be particularly targeted on those areas of our towns and cities with the highest levels of multiple deprivation and it should be part of *sustainable towns and cities* as a matter of course.

In conclusion, remember that green infrastructure is merely means to two very necessary ends: improvement of people's individual and collective well-being and improvement of the functioning of the natural environment. So planners, engineers, landscape designers, all medics, and housing developers change your focus please. And Scottish Ministers collectively please bring forward a new action plan and actively resource all sectors to implement it.