Creating the Right Environments for Health

The Annual Report from the Director of Public Health

Reading

July 2018

Reading Borough Council

Working better with you

FOREWORD

We are shaped by our environment more than we may realise. Public health through the ages has always understood that environmental factors, from poor housing, lack of sanitation and poor air quality have an important role to play in determining our health; both as immediate threats to life and limb; and as long-term factors creating long-term exposure to potential harms. Other disciplines - and indeed many of our established arts - have sought refuge and inspiration in nature; however, it has taken some time for public health and medicine to identify the evidence base supporting what many of us had long felt; that nature and greenspace is good for us!

This report is intended for a wide audience. Since public health moved back into local government in 2013, we have reconnected with many of our valued colleagues in planning, leisure and sports development, parks and recreation, housing and highways (amongst others) to create place-based strategies and deliver actions which bind together these wider determinants of health with our local priorities. I hope that this report reaches a wide and diverse audience, most importantly to residents and to their representatives such as Councillors and GPs, who are poised to respond to the recommendations laid out herein.

With ever increasing demands for new housing in the South-East of England, and the need to improve and increase infrastructure; so the natural environment can come under pressure and its intrinsic values may be overlooked. Berkshire is as a whole, a green and pleasant place. From the areas of outstanding natural beauty of the North Wessex Downs; to the Green Flag accredited parks of Slough, communities live close by or surrounded by attractive green space. Rivers and waterways play an important part in our communities too – from the Thames at Windsor through to the reclaimed recreational parks and lakes of Dinton Pastures; these provide nature and people with nourishment, peace and pleasure. The new town planners who gave birth to Bracknell in the late 1940s planned a town where greenspace and recreation was a defining generator of the town's layout; and in Reading, the Thames side open spaces at Richfield Avenue and at King's Meadow provide homes to two huge community events; the Reading Festival and Reading Pride respectively.

Berkshire's natural environment can be seen to provide opportunity for peace and tranquillity; gentle and boisterous play; sport, competition and spectacle; natural habitats and preservation of wildlife; and attractive places to walk; cycle and live amongst. That our communities are still able to live amongst and use a variety of natural environments freely for our recreation is testament to many who have fought for their preservation and enhancement. Improvement in and widening access to green and blue space must be a public health ambition in itself, and this report provides the evidence base to build that ambition.

I truly hope that this report reconnects professions; communities and landowners who all have a duty to support the public's health through creating the right environments for health to thrive and benefit us all through the beauty of natural and green spaces.

Darrell Gale FFPH MSc BA (Hons)
Acting Strategic Director of Public Health for Berkshire

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ABOUT THIS REPORT

This report was developed and produced on behalf of the Acting Director of Public Health by Shared Public Health Services for Berkshire, and authored and coordinated by Dr Steffan Glaze (Foundation Doctor).

This report is the joint effort of all Consultant-led Public Health teams in Berkshire to produce the statutory annual report of the Director of Public Health both as a pan-Berkshire document, celebrating the history of shared working across the six Unitary Authorities; and also as a unique report for each individual authority.

Case studies were provided by a variety of individuals from local authority public health teams or other groups, such as voluntary organisations who are acknowledged below and with their contributions.

Finally, we acknowledge Judith Wright who was Interim Strategic Director of Public Health for Berkshire from April-December 2017, who conceived of the topic and encouraged us all to find the right environments for health.

Berkshire Lead Consultants in Public Health

Shared Public Health Services for Berkshire
Dr Jo Jefferies

Bracknell Forest
Dr Lisa McNally

Reading
Dr Marion Gibbon

Royal Borough of Windsor & Maidenhead
Teresa Salami-Oru

Slough
Dr Liz Brutus

West Berkshire
Matthew Pearce

Wokingham
Darrell Gale and Julie Hotchkiss

Public Health Services for Berkshire

Lynne Brett
Sarah Shildrick
Sam Claridge
Joy Smith
Trevor Keable
Becky Taylor
Emma Moule
Nana Wadee

Reading Borough Council

Colleagues in Public Health and other departments of local government, as well as collaborators from other groups, contributed to the case studies found throughout this report or its design and administration.

Public Health Lead for Annual Report
Melissa Montague

Contributors
Graham Johnson
Nina Crispin
Susanna Watt
Sharon Fitton
Luke Lloyd
Natalie Ganpatsingh
The University of Reading

INTRODUCTION –

The Wider Determinants of Health

There are many factors, or determinants, that come together to affect our health. There are some we cannot change – chiefly, our genes. Of the modifiable factors, some are individual and personal choices such as taking up smoking or choosing to exercise. On a population level, there are the wider determinants of health: a diverse range of economic, environmental and social factors that affect people's health and influence their choices and lifestyles. Difficult to quantify, many of these determinants are shaped by national and local government policies, our environment and the distribution of wealth - things not quickly changed. They include:

- Income and social status
- Educational attainment
- Quality of housing
- Community and social networks
- Activity – the way we live

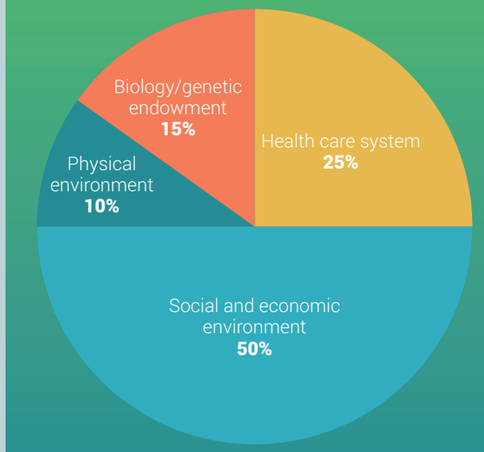
It is generally agreed that these wider determinants of health overall have a more significant impact on the health of individuals that direct interventions in health care. Estimates vary, but it seems that health care contributes less than 25% of our overall health, with these wider determinants contributing to the majority.

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

World Health Organisation, 1948

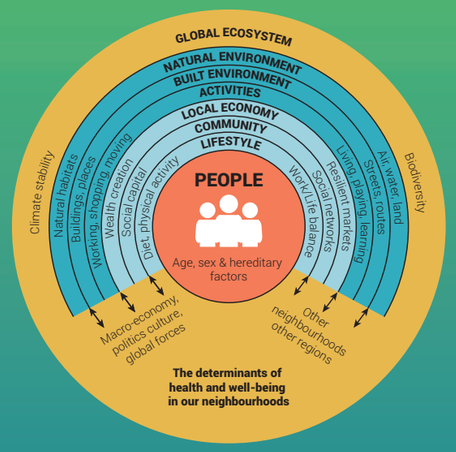
Public health, as a responsibility of local authority, has the opportunity to influence these determinants for the improvement of the health and wellbeing of the population it serves. The benefits may not be quickly realised, but are potentially vast and wide reaching, and could reduce the inequalities in our society and improve health and wellbeing for all of us.

[1] Estimated impact of determinants on health status of the population



Source: Canadian Institute for Advanced Reseach, Health Canada, Population and Public Health Branch AB/NWT 2002

[2] Barton and Grant, "A health map for the local human habitat", 2006



The health map: Barton and Grant 2006 developed from a concept by Dahigren and Whitehead 1991

This report will focus on one of the wider determinants of health – the natural environment – and how this could be used to improve our health. We will begin by describing the natural environment and its relationship to other determinants of health, then go on to examine particular health dimensions in this context. Finally, we will consider the challenges – and opportunities – to the natural environment that we can adjust to improve the wellbeing of our communities and from these build recommendations to act on.

Throughout the report, you will find case reports and research. We want to make effective changes, such that investments made will reap benefits for our communities. The research is included to discuss the scientific factual evidence available, and local case studies highlight the ways in which local communities are already using the natural environment to stay healthy or improve their health.

RESEARCH

Most of the research described in this report comes from scientific journals. Researchers conduct their studies, and then publish their results only after a body of other scientists have reviewed their work for accuracy. It can be difficult to get evidence on a population scale because there are so many things that can contribute to health and wellbeing, making it hard to measure the amount caused by a single aspect. The studies selected are considered to be of good quality, but reflect only a small proportion of the data available.

CASE STUDY

All of the case studies are examples of the work going on in this local authority in line with the theme of the report. We are pleased to highlight a variety of council, voluntary and national initiatives that are contributing to improving our health.

THE NATURAL ENVIRONMENT

The natural environment can encompass many parts of our surroundings. We often think of wide open fields, quiet forests or flowing rivers as the truly natural environment, but our urban environments can include natural elements. Often termed 'green space', this includes many things, from sports fields to decorative gardens. The natural environment can also encompass 'blue spaces' such as rivers and lakes, which are features of our area that can enable exercise, time in nature, leisure and relaxation. There is evidence that this natural environment has an influence on health in a variety of ways.

The ways in which the natural environment can improve health are complex and intertwined with many other factors. There are broad themes that have appeared from the research in this field, namely [3]:

- Stress reduction
  - It has been known for a long time that spending time in nature can have restorative effects, through relaxation.
- Improved environmental quality
  - Green spaces are more likely to be biologically diverse, and contribute to improving air quality and reducing the effect of heat concentration in cities.
- Greater social cohesion
  - Areas of natural environment are places that people can socialise and congregate, places of pride in the community and as a result improve the cohesion of neighbourhoods.
- Increased physical activity
  - Green spaces are appealing to visit, and typically need to be walked, cycled or played in to appreciate them.

We will see throughout this report how scientific research has found evidence from an individual to a population level that green spaces and the natural environment can have positive effects on our health and wellbeing. Although the exact mechanism isn't clear, there is still the opportunity to increase the availability, quality and use of natural elements in our communities.

Policy

The Department for Communities and Local Government published a consultation paper [4] in 2010 on planning policy and shaping healthy environments. Within the paper, the government defined a wide range of green spaces.

- parks and gardens – including urban parks, country parks and formal gardens
- natural and semi-natural urban green spaces – including woodlands, urban forestry, grasslands, common land, wetlands, areas of open and running water, wastelands, derelict open land and rock areas
- green corridors – including canal and river banks, cycle ways and rights of way
- outdoors sports facilities (with natural or artificial surfaces, either publicly or privately owned) – including tennis courts, bowling greens, sport pitches, athletics tracks, playing fields and other outdoor spoors areas
- amenity green space – including informal recreation spaces, green space in and around housing, domestic gardens and town or village greens
- provision for children and teenagers – including play areas, adventure playgrounds, skate parks, basketball courts and other informal areas
- allotments, community gardens, city (urban) farms and land used for permaculture
- cemeteries and churchyards
- accessible countryside in urban fringe areas
- civic spaces, including civic and market squares
- landscape around buildings – including street trees

RESEARCH

At an individual patient level, in 1983 R Ulrich [5] found that a view over green space could quicken someone's recovery from surgery in a suburban hospital in Pennsylvania, USA. This study compared similar people who had the same operation, but what differed between the two groups compared was the view from their window - either a brick wall or trees. Those with the green view had statistically significant lower length of stays and lower use of painkillers. This early evidence showed that there may be a restorative effect to simply viewing greenery and natural environments.

Looking at the population level, a study in the Netherlands [6] examined the electronic GP records of over 340,000 patients, and measured their illness by how often they saw their GP for various health problems. This was then compared with the percent of green space in a radius around their postcode based on satellite imaging. The analysis showed that over half the health problems were less common among the patients who lived in areas with more green space, even when correcting for potential confounding factors such as age and socioeconomic status. The correlation was strongest for anxiety and depression, children under 12 and those aged 46-65. They found that an extra 1% of green space in a person's area was as beneficial to overall health as being a year younger.

How can we measure Green space?

How can we define how 'green' our neighbourhoods are? There are many ways this is measured in scientific study, the two most common being:

- Satellite imaging – by looking at photographs taken from space, scientists can calculate what percent of an area is covered by plants. This is relatively easy to derive, and data is available for much of Europe. However, it does not account for the quality of the green space, e.g. for access or for food production, or how much we can actually access or use that greenery, as any plants on roofs, within private land, or in the middle of a roundabout would be included.
- Mapping – analysing maps can reveal the different land types in an area, from arable to housing. Counting how much of an area is covered by accessible green space can be used to measure the amount of natural environment in a neighbourhood. This method will miss small areas, such as verges and paths, which contribute to green routes but are not large enough to be documented on most maps.

Although effective at developing a measure of how green an area is, neither of these methods account for how easy the space is for people to access, how much that space is used or the quality of it. This aspect of the natural environment can be heavily influenced by the community who use it and live near it, such that we can all have a part to play in making the most of green spaces in our area.

Resources

A variety of resources are available for us to find and use green space in our area.

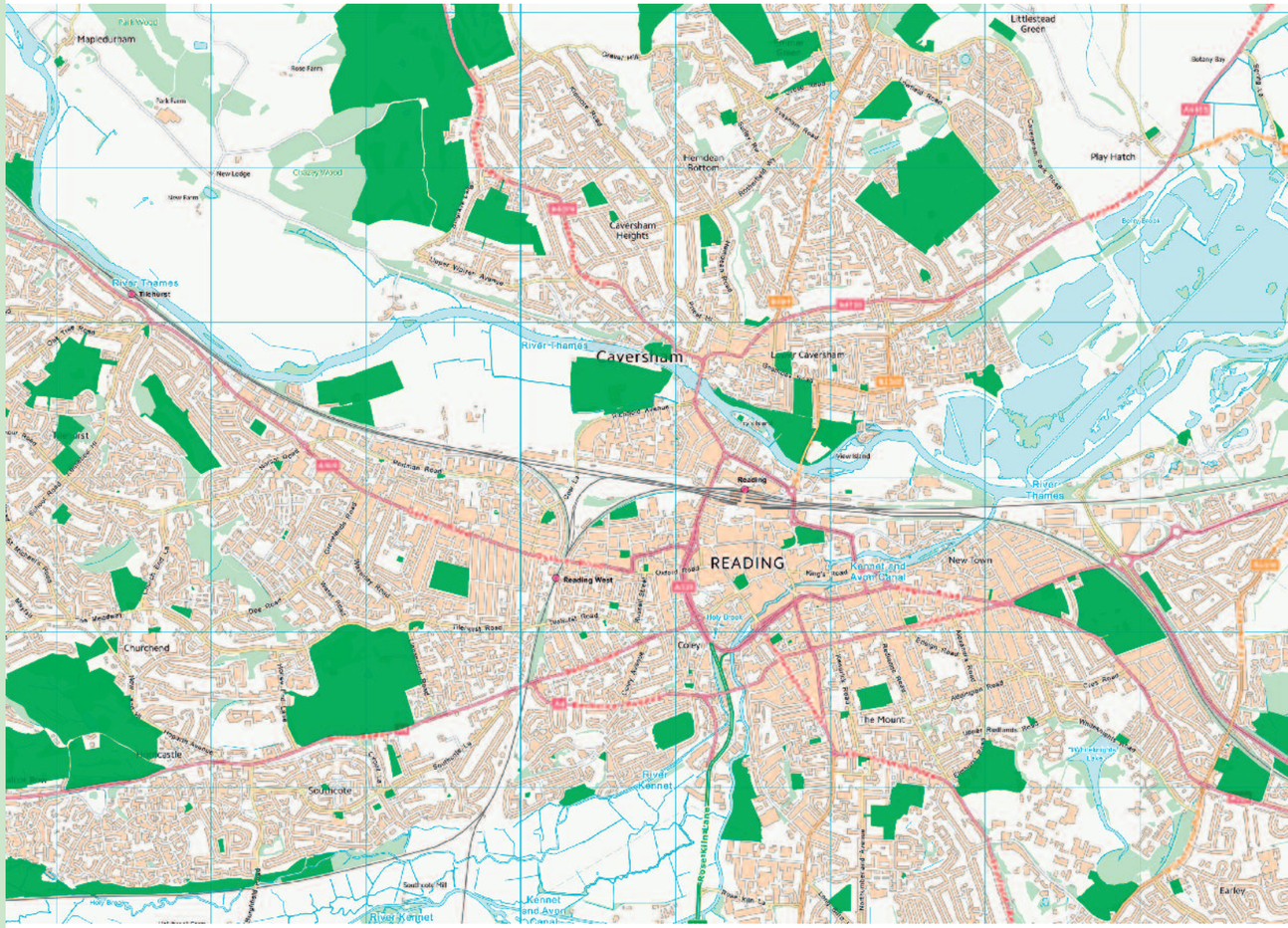
WOODLANDS TRUST WEBSITE

The Woodlands Trust, the UK's largest conservation charity, has an online database of the woods they manage. Using your postcode, you can find more about the woodland in your area.

OS GREENSPACE

The Ordnance Survey has assessed their own data about land use in the United Kingdom to produce an interactive map which can be used to see where green spaces are, what they are used for and how they can be accessed.

Reading Borough Council keeps online records of all the green spaces they manage, which includes details about facilities and opening times. You can find this resource at the following address:
http://www.reading.gov.uk/outdoors



Source: © Ordnance Survey OpenData (2018)

HEALTH OUTCOMES AND BEHAVIOURS –

Profiles

The following section describes some of the key health outcomes and behaviours on which there is a firm evidence base for the effect of green space or the natural environment. The relevance of these to our communities is demonstrated by data about the current health and wellbeing of the local communities in a summary graphic. You will also find original research evidence and a case study from your local area.

Mental Health

Mental health is essential for our overall health and wellbeing, and changes in policies and the NHS is increasingly recognising this. The 2011 report from the Department of Health 'No Health Without Mental Health' identifies some key facts about the national picture:

- mental illness is the single largest cause of disability in the UK
- at least one in four people will experience a mental health problem at some point in their life and one in six adults have a mental health problem at any one time
- the costs of mental health problems to the economy in England have recently been estimated at a massive £105 billion, and treatment costs are expected to double in the next 20 years

How could natural environments contribute to changing this picture? It is hard to identify exactly the mechanisms for these benefits, but a variety of evidence is available. It has been shown that exposure to natural environments can reduce stress, anxiety, blood pressure and anger. Over longer periods of time, those who live in greener areas are more likely to report good mental health and wellbeing.

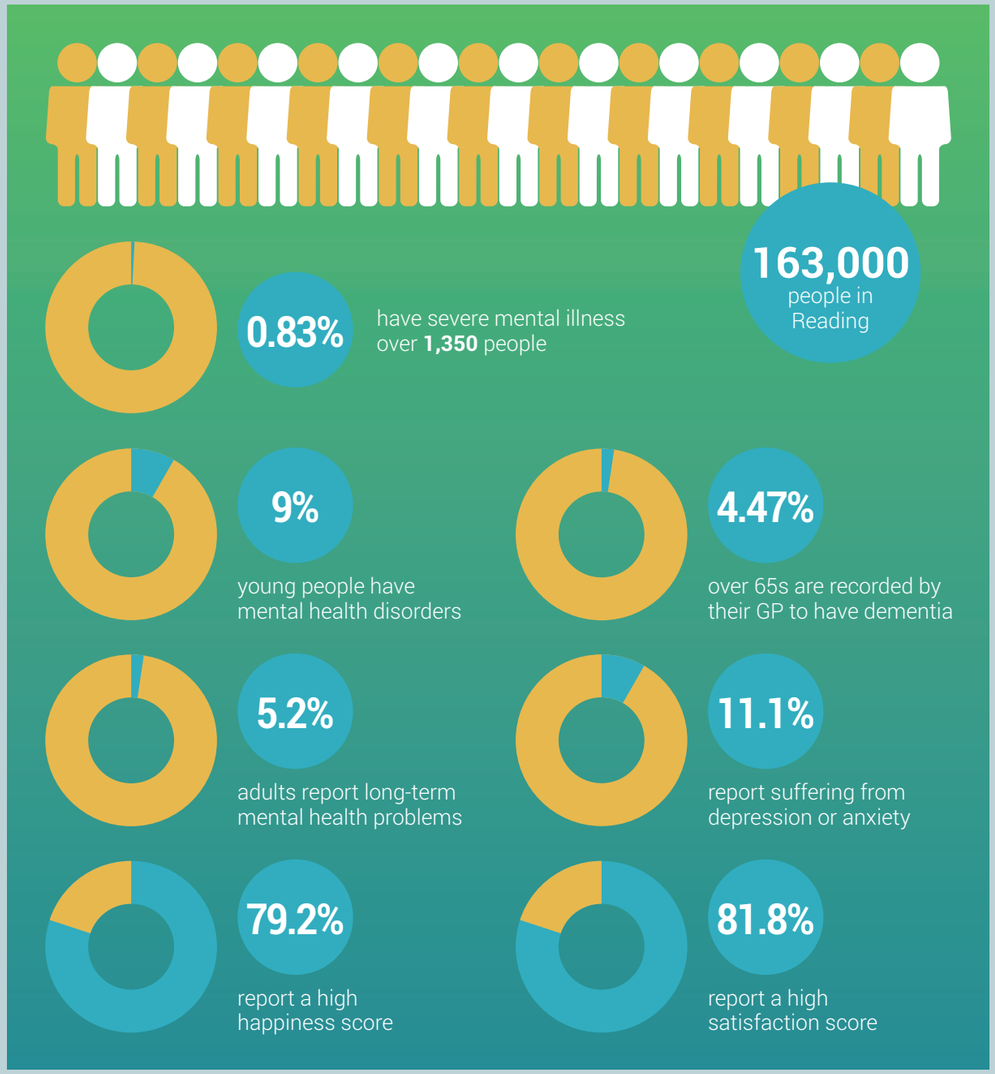
Mental health is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.

World Health Organisation definition

National policies and initiatives recognise the benefits of spending time in green spaces on mental health. For example, Mind's Ecominds scheme found 7 of 10 people experienced significant increases in mental wellbeing by the end of an ecotherapy project [7]. It helped people find full-time employment, with potential savings of around £5,700 for each person in terms of government spend.

IN OUR AREA

There are currently estimated to be around 163,000 people [8] in Reading: 0.83% have severe mental illness – over 1,350 people. An estimated 9% of young people have mental health disorders, and 4.47% of over 65s are recorded by their GP to have dementia. Responding to a GP Survey, 5.2% of adults report long-term mental health problems, and 11.1% report suffering from depression or anxiety. In terms of self-reported well-being, 79.2% report a high happiness score and 81.8% a high satisfaction score. [9] [10]



RESEARCH

Evidence for the effect of green space on mental health looks at both the short-term, temporary effects and long term benefits. Contact with nature can improve emotional state, reduce self-reported anger, fatigue, anxiety, sadness and increase feelings of energy. [11]

Hartig et al [12] tested whether natural environments were more relaxing and restorative than purely urban surroundings, by giving subjects difficult tasks. They measured blood pressure and reported mood throughout, and found that being in nature was associated with quicker returns to normal levels of blood pressure and mood after stress – evidence that being in nature can improve your physical and mental wellbeing in times of stress.

A study by Alcock et al [13] looked at people who moved to greener areas during the years of an annual survey of their mental health. Moving from a less to more green area was associated with improvements in reported mental health.

CASE STUDY: RIDGELINE THERAPEUTIC GARDEN

By Graham Johnson, Chair of Trustees at the Ridgeline Trust

Clients are referred to Ridgeline's services through Reading or Wokingham Borough Councils or via GPs or personal referrals. We cater for all people with experience of a range of physical and mental disabilities, as well as other special needs such as learning difficulties or dementia. Our lead Horticultural Therapist assesses each client's individual needs and aspirations, develops a personal programme for each one, and monitors their progress to ensure optimum building of their skills, confidence and well-being. Currently there are 18 client gardeners supported by about 12 volunteers.

What is our impact?

Whatever their problems and difficulties, our gardeners can expect to gain social and physical benefits, including a sense of community, friendship, confidence-building and opportunities for meaningful communication and physical exertion through active engagement outdoors. Being part of a gardening team which is working towards shared aims helps our clients and volunteers to create and enjoy a sense of belonging, camaraderie and achievement, all of which are found to promote positive mental health and well-being. Examples of the specific benefits follow.

- Physical benefits: Physical activity is associated with good health and the reduction of risk factors such as heart disease. It has also been shown to be useful in reducing anxiety and helping with depression, as well as in stimulating those with Alzheimer's or dementia.
- Psychological benefits: Caring for the garden and plants, watching these grow and flourish, and being part of a group effort allows individuals to attribute success to their contributions, thereby improving their self-esteem.
- Benefits from the environment: The garden environment offers the chance to escape from the indoors to a natural outdoor setting that is calm and restful.
- Benefits from communication and social interaction: The horticultural activities, craft work, and cookery done in group settings allow clients and volunteers to enjoy collaborative working, and the popular tea breaks and lunch times provide the opportunity to engage in and develop their social and communication skills.

You can find more details on our website:
www.ridgelinetrust.org.uk

Children and Young People

Every child deserves the best start in life to give them the opportunity to thrive in life. Pregnancy and upbringing impacts our physical and mental health during childhood and through to adulthood. Enabling good maternal health can allow a safe delivery and good growth of the foetus, preventing potential poor outcomes from low birth weight or prematurity. The development of a baby's brain and immune system begins in the womb, and continues as they grow.

Green spaces may alter the environmental stimuli we are exposed to, and through this change whether we develop inflammatory diseases such as asthma. They can encourage us to be more active or to connect with our community, which can improve cognitive development. Exposure to the natural environment appears to have an impact on the development of our microbiome – the vast number of microorganisms that co-inhabit the human body. This microbiome may have an impact on the formation of our immune system, and as such the prevalence of allergies and long-term inflammatory diseases – including asthma. There is also evidence that street trees can improve the air quality in urban areas by absorbing some of the particulate matter from pollution, as well as reducing the 'heat island' effect generated by the concentration of hard surfaces and taller buildings [14].

Together with the improvements in mental health through spending time in nature, green spaces can contribute to a positive development for children, especially for play. The natural environment can improve our environment and change our behaviour to help us grow well. A healthy community which is using the green space available for both formal and informal play to increase a child's chance for the best start in life can set them off on the way to greater health and wellbeing.

RESEARCH

Dadvand et al [15] studied a group of 2,593 primary school children in 36 schools in Barcelona, Spain. Using repeat measures of memory and inattentiveness as an indicator of cognitive development, they compared this with exposure to green space. They measured the 'greenness' around the children's homes, their route to school and the school itself from satellite data that measures the percent of an area covered by plants. They found greater progress in the children in greener schools and home environments, partly explained by a reduced exposure to air pollution.

An American study [16] examined the association between birth outcomes and residential greenness. Looking at 64,705 births in Vancouver, Canada (1999-2002), they examined the density of vegetation within 100m of participants' homes, their birth outcomes and other aspects of their environment. They found that, independent of air pollution, noise, neighbourhood walkability and proximity to a park, increasing residential greenness was associated with beneficial birth outcomes including higher term birth weight and reduction of likelihood of prematurity.

IN OUR AREA

Looking at the most recent data for the health of children in Reading, we see 6.4% of infants born at a low weight. There were 21,767 attendances to Accident and Emergency by those under 18 years old, and 61 hospital stays last year to treat asthma. At 4-5 years of age 9.6% of children are obese, which increases to 18.5% at age 10-11.

In terms of being ready for school, 80.3% of children meet the expected level at the phonics screening check and 70.4% had achieved a good level of development at the end of reception year. Looking ahead, 55.7% of pupils at Key Stage 2 met the expected standard in reading, writing and maths; 52.1% of teenagers achieved five A*-C grades at GCSE. [17] [18] [19]

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Looking ahead

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just over **52%**

of teenagers achieved five A*-C grades at GCSE

CASE STUDY: A DOSE OF NATURE

By Natalie Ganpatsingh,
Director of Nature Nurture CIC

Nestled on a hilltop in Berkshire is a beautiful nature reserve called 'Lousehill Copse'. Winding paths meander through oaks and hazel and a woodland pond invites a mindful moment away from the hustle and bustle of the town. The keen listener might hear the chirp of the goldcrest. Bluebells, celandines and primroses abound.

This ancient woodland is in the residential area of Tilehurst, tucked away between three housing estates including Dee Park. Urban nature spaces like these; our parks, woodlands and waterways, provide spaces for communities to get active, play, learn, relax and experience the restorative effects of nature. They are places where people of all ages and backgrounds can explore and have fun, together, for free. Lousehill Copse is situated within an ethnically diverse area of deprivation. Anti-social behaviour such as fly tipping and drug use is prevalent. Many of the pathways are overgrown and inaccessible.

Nature Nurture CIC is an award winning company on a mission to connect urban communities with the nature on their doorstep. Over the last 6 years, this Reading-based community organisation has been delivering a range of nature-based health interventions across Reading. They believe that by connecting communities with nature, not only do we improve health outcomes, but we also increase the quality of our green spaces, which in turn generates more visits. By integrating conservation activities, they improve habitats which then increases biodiversity. It turns out that participating in physical activity in environments with plenty of natural features is even better for our health than indoors. It's a win-win for people and nature. Thanks to funding from The Health Lottery, Tesco and Catalyst Housing, they have been able to deliver an ongoing family-orientated programme with the Dee Park community.

The Nature Nurture team are trained across a variety of areas: Forest School, Earth Education, John Muir Award, Environmental Education, Creative Arts and School Gardening, as well as by partner organisations delivering dance, yoga and drumming. The key to their success in community engagement is their fun, accessible and inclusive approach. This area of town of West Reading and Tilehurst is slowly overcoming a poor reputation (mostly unwarranted) for crime and anti-social behaviour. To boost community pride and a sense of ownership of these urban green spaces, they created a brand around 'The Wild West', to inspire a sense of adventure.

Their most popular event is the Family Wild Day. Delivered in various parks and woodlands across Reading, these events typically attract 150 - 500 people, with activities on offer such as bug hunting, pond dipping, den building, wild art, woodland yoga and wild walks. Family Wild Days provide opportunities for interaction between a broad range of ages, race and social status - making the most of what we have - local, free...and communal. They recently developed the 'Wild Workout' which features a range of friendly woodland creatures, encouraging simple physical activity workouts, without the need for specialist instructors, equipment or clothing. They encourage people to embed local nature connection into their everyday lives, so all activities are simple to replicate on their own future self-led adventures. A parent who attended a Family Wild Day at Lousehill Copse said that she had lived in the adjacent road for 10 years and never set foot in the woodland until the event and reported 3 months later that spending time there had become a frequent part of her family's life.

The monthly Wild Child Adventure Club at Lousehill Copse combines Forest School inspired activities with actual conservation work, such as clearing pathways and rebuilding bridges. Children as young as three join in the hazel coppicing. This is delivered in partnership with The Conservation Volunteers and Catalyst Housing and is another way for parents and their children to reap the benefits of spending time in nature, together. The Wild Wednesday After School Club connects children from Ranikhet Academy to the copse and to ensure they reach the families who stand to benefit the most, they liaise with the school's Family Development Worker.

Thanks to grants, everything Nature Nurture provides is free to participants as they want to make their programmes accessible to all and promote the sense of nature being free.

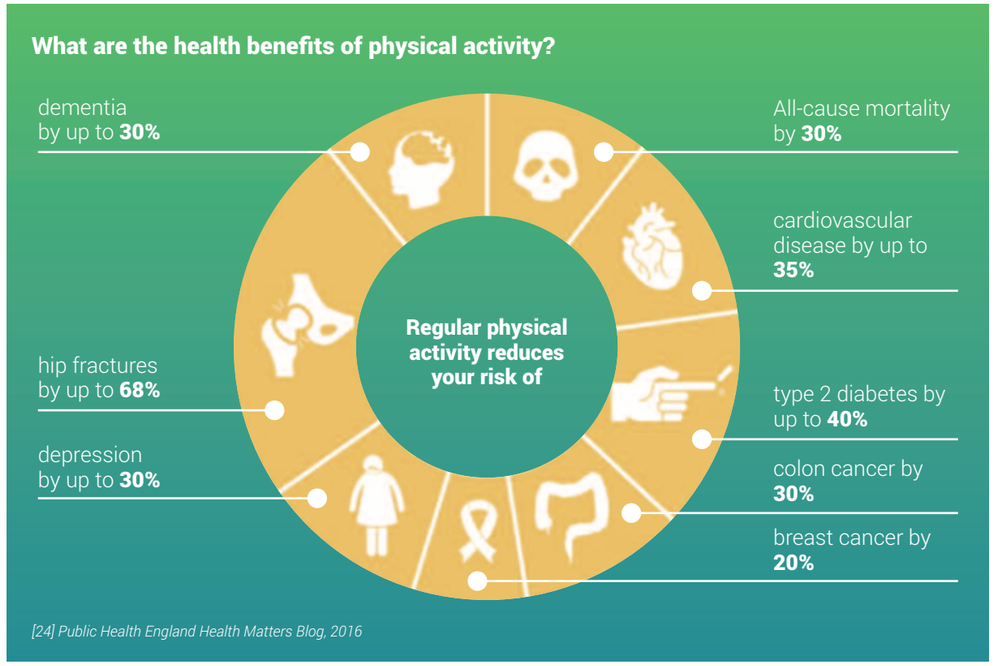
To find out more, visit **www.nature-nurture.co.uk**

Physical Activity

Being active can have wide reaching benefits to our health. It has been shown to reduce the risk of coronary heart disease, stroke, type 2 diabetes. It can help maintain a healthy weight, improve self-esteem and reduce depression and anxiety. Physical inactivity contributes to 1 in 6 deaths [20] , estimates suggest that an inactive person is likely to spend 37% more time in the hospital and visit the doctor 5.5% more often than an active person [21]. The Department for Environment, Food and Rural Affairs estimates that the health system could save £2.1 billion per year if everyone had sufficient access to green space and its benefits. [22]

We also know our environment can shape our behaviour, so there is the opportunity to design our neighbourhoods and towns with activity in mind. The links between access to green space and levels of physical activity are well-established in research, which shows higher levels of physical activity in areas with more green space [23]. Careful planning of towns can enable active travel – i.e. walking or cycling as a mode of transport – through making distances achievable and creating safe and aesthetically pleasing routes to travel on. Those who walk or cycle to their place of work are more likely to meet their physical activity needs. If more of us were active, we could significantly improve the health and wellbeing of our communities. The potential benefits are not limited to health – reducing journeys made by car will decrease carbon emissions, air pollution and traffic, and encouraging walking for shopping can boost our local economy.

Accessible, quality green spaces also allow sports and play to increase leisure time activity. Supporting local sports clubs with facilities, giving spaces for community groups and the provision of playgrounds can all enable people at all ages to be more active. We can harness the natural environment to increase physical activity in our community, and be healthier as a result.



POLICY

Chief Medical Officer Recommendations [25]:

1. Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of ten minutes or more – one way to approach this is to do 30 minutes on at least five days a week.
2. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
3. Adults should also undertake physical activity to improve muscle strength on at least two days a week.
4. All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

RESEARCH

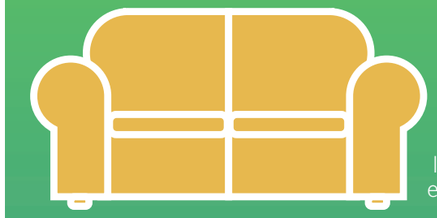
Analysis of the Danish National Health Survey [26] was able to assess self-reported distances to green spaces, BMI and exercise habits. It revealed that those who reported living over 1km, compared with less than 300m, to green space were more likely to be obese and less likely to exercise. Although based on self-reporting which may be biased, this study highlights the potential benefit of encouraging physical exercise through proximity to green space.

A study [27] in Bristol, UK, used data from the 2005 Bristol Quality of Life in your Neighbourhood survey of 6,821 adults and matched it with a mapping database of neighbourhood and green space information. After statistical analysis, they found that the amount of use reduced with increased distance from the green space, and those living near a formal park were most likely to achieve the recommended amounts of physical activity and were less likely to be overweight.

IN OUR AREA

In Reading, current data shows 65.8% of adults (18-65) report meeting the physical activity guidelines set out by the Chief Medical Officer, yet 19.2% of adults complete less than 30 minutes exercise per week [28]. Just over half (53.6%) of adults do any walking at least 5 times per week. 71% of 15 year olds are sedentary for over seven hours per day on average. A study by NHS Digital using an accelerometer found however that only 6% of men and 4% of women met the required levels of activity [29].

Over half of Reading's adults are overweight or obese (55.3%), and this starts in childhood – 32.9% of Year 6 children are overweight or obese. 8,568/4.7% have diabetes, 26,261/11.2% people are living with high blood pressure and 4,271/1.8% suffer from heart disease. 108 people were admitted to hospital last year having broken their hip. [30] [31]



19%
Completing less than 30 min exercise per week

55%
Overweight or obese

66%
Performed the recommended physical activity (based on self-reported surveys)

But only **6%** of men and **4%** of women meet the recommended activity levels when objectively measured with an accelerometer

Source: Health Survey for England 2008

If people were more active, what could we reduce?

26,261 (11.2%) with high blood pressure

8,568 (4.7%) with diabetes

4,271 (1.8%) with heart disease

108 admissions for hip fractures

CASE STUDY: READING WALKS

By Luke Lloyd, Programme Manager at the Leisure and Recreation Service, Reading Borough Council

There is considerable evidence to show that walking has many benefits to a person's physical, social and mental wellbeing and can help to reduce risk of diseases such as cancer and coronary heart disease.

Walking has been described as a 'near perfect exercise' particularly to those who get little or no exercise or live in areas of poor health, As well as the health benefits it also offers people safe access to their local parks and green space.

Walking For Health enables local organisations to set up and run local, volunteer led health walks. Reading Walks has been running for a number of years and aims to enhance the quality of life of residents in Reading by offering them community based led walks, run by our volunteer walk leaders.

The main objectives of the walking for health programme are:

- Engage with older and isolated people in the community.
- Increase people's physical activity levels
- Increase independence.
- Discovery of people's local community and green space and decrease social isolation.
- Reduce health inequalities and enhance quality of life for people in Reading

With administrative support from Reading Sport and Leisure, volunteers now lead 5 regular walks in the area. Over 300 people have been involved, walking a total of 171 hours between them this year.

Communities and Health Inequalities

The wider determinants of health, as described in the introduction, have an important role in shaping our health and wellbeing. They were a key focus of the Marmot Review [32], which examined the health of our nation and identified a number of inequalities across our society – those of a lower socio-economic class have a lower life expectancy, a higher frequency of many diseases and poorer mental health. The mechanisms between a lower socio-economic class and poorer health are complex, but can include low quality housing, less healthy diets and lower educational achievement.

Green spaces have been shown to reduce these health inequalities, as the benefits of the natural environment may have a stronger effect for those in lower socio-economic groups. This may be in part due to smaller personal gardens and less aesthetic features in neighbourhoods, but there are often more barriers to the use of green spaces as well – such as crime, traffic and social isolation, which itself has been shown to be associated with increased mortality [33].

An important task of public health is to ensure improvements to health occur throughout society, and inequalities in our area are reduced. Improving green spaces in particular areas of deprivation or using initiatives that reduce isolation and loneliness might be one of the means for us to eliminate health inequalities in our area and improve our communities.

POLICY

The Marmot Review [32] of 2010 is a key piece of work that identifies many of the health inequalities in our society and gives recommendations for change. Policy Objective E, 'Create and develop healthy and sustainable places and communities' has a number of aims for the improvement and development of green spaces across the social gradient.

PRIORITY OBJECTIVES:

- Develop common policies to reduce the scale and impact of climate change and health inequalities
- Improve community capital and reduce social isolation across the social gradient

RECOMMENDATIONS:

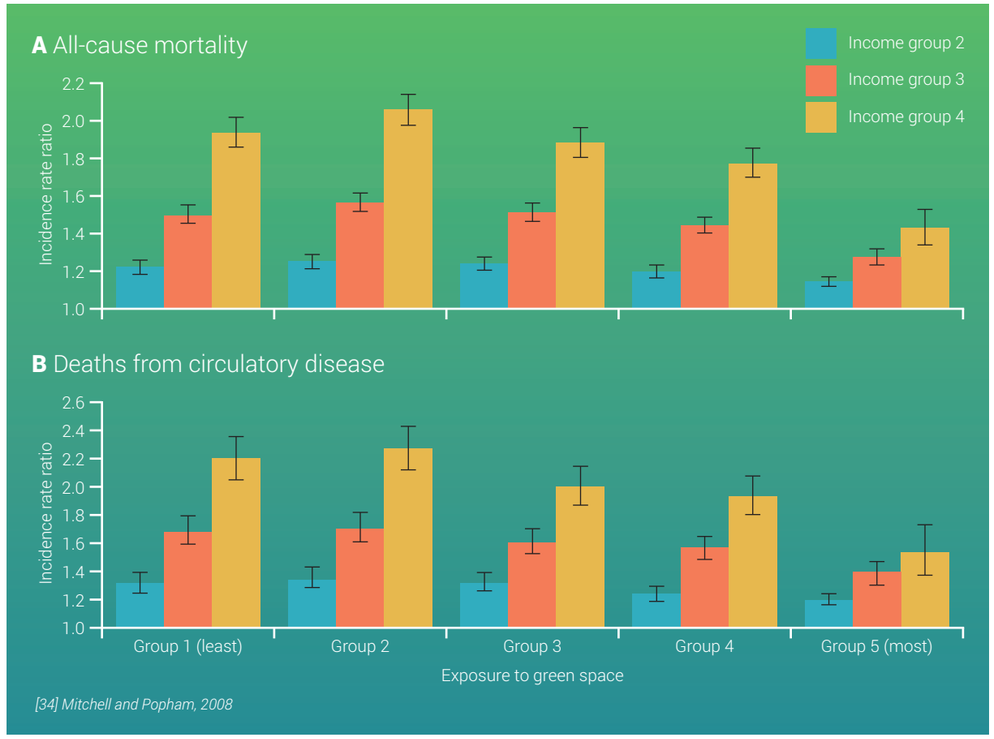
- E1: Prioritise policies and interventions that both reduce health inequalities and mitigate climate change, by:
  - Improving active travel across the social gradient
  - Improving good quality open and green spaces available across the social gradient
- E2: Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality.
- E3: Support locally developed and evidence-based community regeneration programmes that:
  - Remove barriers to community participation and action
  - Reduce social isolation.

RESEARCH

Mitchell and Popham [34] compared different socio-economic groups and the influence of green spaces on their health. Looking at people of working age in groups of increasing income and comparing them with the same groups in areas of increasing green space, they found that the difference in different health outcomes was reduced in areas with more green space. This can be seen in the graph below by the reducing size of the bars as you move left, which is areas of higher green space.

National data from the Monitor of Engagement with the Natural Environment survey, undertaken by Natural England from 2013 to 2015 [35] found that 12% of children had not visited the natural environment in the previous year, and these children were more likely to be of Black and Ethnic Minority origin or of a lower socio-economic class.

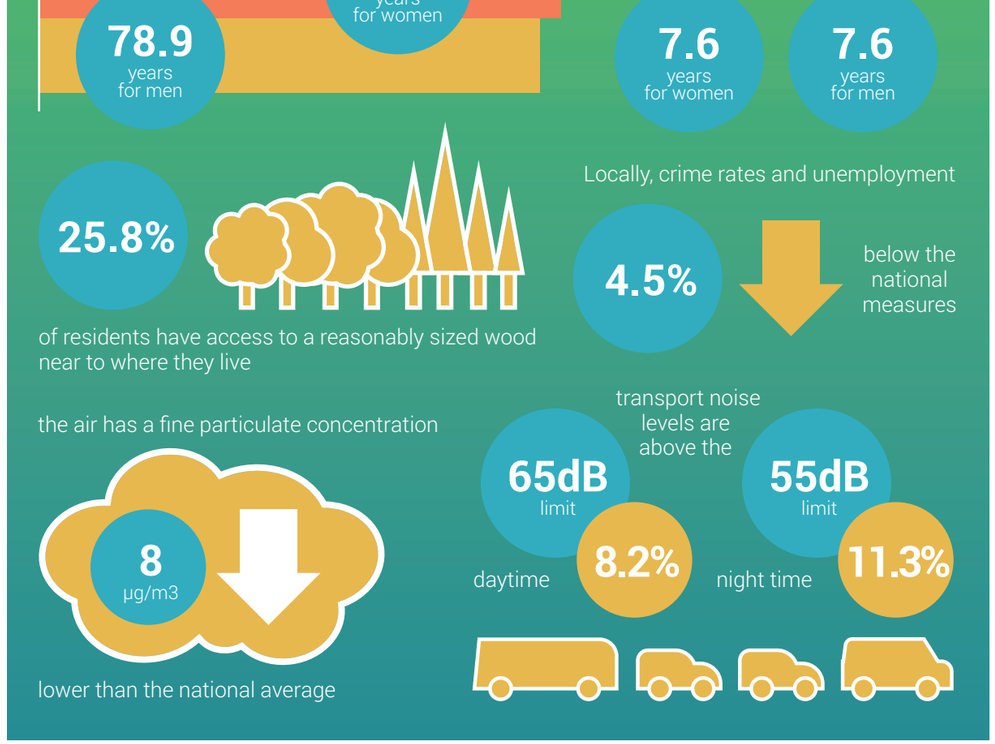
A study [36] in Chicago, USA, looked at the surrounding greenness of 98 publically owned apartment blocks. Residents were randomly assigned to any of the blocks. An examination of police data showed that there were fewer crime reports from apartment blocks with greener surrounding areas when compared to those with less green surroundings.



[34] Mitchell and Popham, 2008

IN OUR AREA

The latest data for Reading shows the average life expectancy is 83.2 years for women and 78.9 for men. However, in the most disadvantaged areas the life expectancy is estimated to be lower by 7.6 years for women and men, compared to the least disadvantaged areas. There are lots of ways to measure the potential causes – they are often the wider determinants of health discussed earlier in the report. Locally, unemployment (4.5%) is below the national rate but crime is slightly more common. In terms of pollution, the air has a fine particulate concentration of 8µg/m3 (lower than the national average), but transport noise levels are above the 65dB limit in daytime for 8.2% of residents, rising to 11.3% for the night time 55dB limit. In terms of personal isolation, only 45.2% of adult social care users have as much social contact as they would like. Only 25.8% of residents have access to a reasonably sized wood near to where they live. [37]



CASE STUDY: SOUTHCOTE GROWALLOT

By Sharon Fitton, Project Coordinator at Food4Families

Food4families is a community programme, run by World Education Berkshire (also known as RISC), a registered charity in Reading and located in some of Readings most deprived areas. Its main aims are to enable local communities to manage land in their own neighbourhoods for the sustainable growing of food for their own consumption, encourage healthier eating and lifestyle habits and develop understanding of the broader environmental, cultural and economic aspects of sustainable food production.

Since its conception in 2009 it has developed a network of community based food-growing projects including educational work with schools, Community Gardens, Vegetable Patches and Cookery Classes.

In 2011 Food4families, in partnership with Jubilee People's Millions and local residents, transformed a patch of derelict wasteland behind the Florian Garden flats in Southcote, Reading, into a community space where local people can grow and share crops. Run entirely by volunteers and managed by a committee, with support from Food4families tutors, the plot has a number of beds, an orchard, polytunnel, tool shed, log cabin, gazebo, lean-to, pond, compost heaps and rain water butts.

The allotment is fruit of the immense work done by all the members, volunteers and tutors over the years, transforming what was a waste ground full of fly-tipped rubble into an oasis-like, peaceful, award-winning garden, providing fresh organic food for the community.

The project brings together different parts of the local community and beyond, and this diversity works towards producing cheap, healthy, fresh food via a common love of gardening, and creates a safe environment for vulnerable adults and children.

People of all ages and backgrounds are welcome and valued, whether for their experience or their youthful enthusiasm. Workshops, learning sessions, corporate volunteer days, open days and stalls are also run regularly throughout the year.

The primary beneficiaries are Southcote residents living in flats with no outdoor space, who gain access to land where they can garden and socialise. We also work with other local organisations, professional or voluntary, which may benefit from using the community allotment. There is a strong focus on local residents, BME communities and groups on low incomes.

Everything grown is distributed out amongst those who attend with the surplus being given away for a donation to local residents in Coronation Square.

Our own and others' experience and research demonstrates that urban community food growing projects provide a unique mix of skills development, dietary improvements, socializing and physical activity that improves participants' well-being, enhances the local environment and builds community capacity.

Evidence collected by The University of Reading researcher during a 2016 study of the project found:

- 66% of people attending regular gardening sessions report a general improvement in their emotional well being.
- 88% of people attending regular gardening sessions report knowing more people in their neighbourhood.
- 89% of people who reported being interested in and more able to influence what is happening with the outside space in their neighbourhood.
- 57% of people involved attending food growing sessions report eating more fruit and vegetables.
- 35% of people attending regular gardening sessions report personal fitness has improved
- An improvement in health related quality of life for residents with treatable/ long term health conditions and disabilities; 5% of participants reported poor mental or physical health
- Those participating will gain skills and knowledge from our gardening and growing activities linked to improved access to fresh food and an improved diet
- Residents gain confidence from new social contacts in their neighbourhood and reduce their isolation from others.
- A positive change in self-confidence and self-esteem for individuals and their families
- Improved links and contacts between third sector and formal health/ care service providers

For more information contact:

Sharon Fitton, F4F project coordinator - Email **sharon@risc.org.uk**
Ring **01189 586692**

OPPORTUNITIES AND CHALLENGES

New Developments and Regeneration

The planning of our local area can influence our health behaviours. Quality, easily accessible green space can enable us to exercise, accessibility to services allows walking and there can be opportunities for social engagement.

With local pressures on housing and the demand for new homes to be built in our area, there are both opportunities and challenges to the amount of quality green space. As urbanised areas already become increasingly built up, there is the need to use green areas on the peripheries of towns to provide enough quality accommodation for our population, often against the wishes of some residents. Although green views can be lost, the majority of these developments take place on private land which is not generally accessible by the public. With careful planning, new developments on previously private land could actually result in more publically accessible green space.

A variety of national policies and frameworks exist to assist local authorities concerning the provision of green spaces. These take the form of general advice through to specific quantifications of how much should be provided and for what purpose. These policies are often used by planning authorities to develop local policies that are relevant to the local situation.

To deliver safe, quality homes and neighbourhoods for all groups in our community it is important to find ways to balance the loss of green areas, the need for more housing and the opportunity to develop new green spaces and use investments to benefit the wider community. By engaging with the planning process and ensuring health and wellbeing of residents is considered in planning, we have the opportunity to develop new assets to improve our neighbourhoods.

POLICY

The Six Acres Standard [38] is a commonly used set of measures to guide local planners as to the amount of recreational space that should be in a community. It was developed by the National Playing Fields Association (NPFA, operating name Fields in Trust), and has existed in various forms since the 1930s with a specific recent update in 2008. It aims to inform policy that will result in the protection, improvement and green spaces focused on sport and play. Many Local Authorities include the standard in their open spaces policies.

Fields in Trust recommended benchmark guidelines - formal outdoor space [38]

Open space typology	Quantity guideline (hectares per 1000 population)	Walking guideline (walking distance: metres from dwellings)	Quality guideline
Playing pitches	1.2	1200m	• Quality appropriate to the intended level of performance, designed to appropriate technical standards • Located where they are of most value to the community to be served • Sufficiently diverse recreational use for the whole community • Appropriately landscaped • Maintained safely and to the highest possible condition with available finance • Positively managed taking account of the need for repair and replacement over time as necessary • Provision of appropriate ancillary facilities and equipment • Provision of footpaths • Designed so as to be free of the fear of harm or crime • Local authorities can set their own quality benchmark standards for playing pitches, taking into the account the level of play, topography, necessary safety margins and optimal orientation • Local authorities can set their own quality benchmark standards for play areas using the Childrens' Play Council Quality assessment tool
All outdoor sports	1.6	1200m	
Equipped/ designated play areas	0.25	LAPs -100m LEAPs - 400m NEAPs - 1000m	
Other outdoor provision (MUGAs and skateboard parks)	0.3	700m	

The National Planning Policy Framework [39] features a number of policies relating to green and open spaces. They include:

- Promoting healthy communities, through access to high quality open spaces and opportunities for sport and recreation
- Protection for existing facilities and the 'Local Green Space' designation, which can be used to afford special protection for green areas of particular local importance due to their use or features
- Protection of green belt land and the need to positively enhance beneficial use of the land through increasing access, biodiversity of improvement of damaged land

INCREASING ACCESS

Another way we can maximise the benefits of green space in our area is to make best use of existing spaces. This can be through improving the quality of already available spaces, opening previously private areas and finding new ways to encourage their use.

Access to green spaces can be increased by removing the barriers to their use. These can vary for different groups, and are not restricted to their quantity or closeness to home. Personal concerns for safety, the quality of the spaces, the weather or poor transport infrastructure can prevent people using green spaces.

Local authorities can work to remove these barriers, alongside the wide range of other organisations who aim to improve the natural environment, encourage people to use it and increase healthy behaviours. Finding new ways to collaborate and strengthening existing links can allow us to make the most of the potential benefits for the green spaces already in our area.

RESEARCH

Volunteering with the Wildlife Trusts [40] improved peoples' mental wellbeing in 6-12 weeks in a study looking at 139 people, some of which were referred by healthcare providers, who volunteered with the Wildlife Trusts as they took part in nature conservation volunteering activities. 95% of participants with low self-reported wellbeing at the start of the project reported an improvement in 6 weeks, this level increased further over the following 6 weeks. Participants reported significantly enhanced feelings of positivity, increased general health and pro-environmental behaviour, higher levels of physical activity and more contact with green space at 12 weeks.

An Australian study [41] combined an audit about public open spaces in Perth with over 1,800 personal interviews. After statistical analysis, they found that those with very good access to large, attractive open spaces were 50% more likely to report high levels of walking, when compared with those do not have access to quality public spaces. This is evidence that the proximity and quality of spaces increases their use.

POLICY

A briefing [42] from the UCL Institute of Health Equity and Public Health England suggests some ways to increase access to green spaces:

1. Create new areas of green space and improve the quality of existing green spaces.
2. Increase accessibility of green spaces and improve engagement with local people.
3. Increasing the use of good quality green space for all social groups.

The Accessible Natural Greenspace Standard (ANGSt) was developed by Natural England to aim to quantify the need for local, useable space near communities. The standards state:

'All people should have accessible natural green space:

- of at least two hectares in size, no more than 300m (five minutes' walk) from home
- at least one accessible 20 hectare site within 2km of home
- one accessible 100 hectare site within 5km of home
- one accessible 500 hectare site within 10km of home'

These criteria account for the need for immediately local smaller spaces, as well as larger areas for sports and walking and are a means by which we can measure the depth and breadth of green spaces around us. Applying the standards to our area might enable us to find particular spaces that could be opened for residents for the widest benefit.

CASE STUDY: GREEN FLAG CAMPUS AT THE UNIVERSITY OF READING

By The University of Reading

READING VOTED BEST UNIVERSITY GREEN SPACE IN THE UK

Release Date 11 October 2017

The University of Reading's Whiteknights campus has been voted among the top ten most popular green spaces in the UK.

Whiteknights, which is made up of 130 hectares of beautiful parkland, was voted for out of almost 1,800 green spaces entered into the 2017 Green Flag People's Choice Award and is the only university campus in the top 10.

The University received its seventh Green Flag Award earlier this year in recognition of its well-maintained and well-managed campus.

All Green Flag Award-winning parks and green spaces were entered into the annual poll, and the public were asked to vote for their favourite. The Green Flag Award scheme is the benchmark standard for parks and green spaces in the UK and is run by Keep Britain Tidy.

The Whiteknights campus includes a lake, woodlands and the widely enjoyed Harris Garden.

Steve Boon, Facilities Maintenance Director at the University, said: "We are delighted to have been voted in the top ten green spaces in the UK, and hugely proud to be the only university campus on that list. Our beautiful Whiteknights campus plays a huge part in attracting students and staff to the University of Reading.

"The grounds and maintenance teams work extremely hard to keep the campus looking good all year round, so I would like to thank them for their hard work and dedication, which has helped us gain this fantastic recognition."

The campus includes public rights of way and is used by local residents as well as staff and students of the university.

CONCLUSIONS

Green spaces can fundamentally define the spaces in which people live and work. The natural environment can have wide ranging health benefits for individuals and our communities and therefore have an important role to play in helping to reduce health inequalities.

Green spaces are free at the point of use and are an accessible asset for all communities, including those who may not be willing or able to pay to use other public or private facilities. It should be noted that green spaces are assets of value in their own right and are often valued for their relatively undeveloped and unspoilt nature. The quality of such spaces and their benefit to communities depends upon appropriate design and management of them.

We have examined how there is clear evidence for a range of improvements to health and wellbeing, including but not limited to:

- Mental health
- Pregnancy
- Childhood development
- Reduction in cardiovascular disease
- Increasing physical activity
- Reducing health inequalities
- Improving cohesion in communities

We have been able to showcase the wide range of success stories from the local authority and other organisations that are increasing our health and wellbeing by using the natural environment.

We also considered the current health of our population, particularly in the areas that could be improved by green spaces.

There are opportunities and challenges to using green spaces, and we have also considered some of the limitations to achieving these benefits and a few of the ways we might make more use of the assets in our area.

RECOMMENDATIONS

1. Local authorities and other agencies should continue to encourage community initiatives that make the most of natural space available, with the aim of improving mental health, increasing physical activity and strengthening communities.
2. Existing green space should be improved and any new developments should include high quality green spaces. The use of professional design and arrangements to ensure the ongoing management of natural environments should be considered if spaces are to be sustainable.
3. Opportunities to increase active transport should be considered when designing new green spaces and in the improvement of existing space.
4. Planning guidance for new developments should specifically consider the use of green and blue space to improve the health and wellbeing of residents and others using the space.
5. Local Authorities and their public health teams should foster new relationships with organisations aiming to improve the natural environment and its use.

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