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Green space, health benefits and Chesterfield

The biggest cause of death, morbidity, disability, health inequalities and low perceptions of wellbeing are caused by avoidable and connected chronic diseases and conditions. Prevention is needed to tackle wider social influences on health, as is the empowerment of individuals so they are able to make their own healthy choices and communities are able to address their own needs. To prevent these conditions from developing and to ensure that people have healthy lives, it is important to provide them with a healthy environment throughout all stages of life.

The presence and use of green space has been proven to benefit health in a variety of ways. The 2010 Marmot Review acknowledges how green space is associated with a decrease in health complaints, blood pressure and cholesterol, improved mental health and reduced stress levels, perceived better general health and the ability to face problems. Some of these health benefits occur as proximity to green space is more likely to encourage physical activity and enable people to meet their recommended daily amount of exercise. As exercise in more natural, outdoor environments has been found to be one of the most beneficial types of exercise, the risk of developing cardiovascular disease and other associated risks such as hypertension is reduced.

The presence of green space can also have a positive influence on mental health. Modern lifestyles and urban living can contribute to increasing levels of stress, anxiety and depression; however, contact with natural environments can be calming and help improve mental wellbeing as areas of tranquillity enable relaxation to take place (Natural England, 2012). Green spaces provide opportunities to increase social contact, promote social inclusion and create community ties and support systems, therefore reducing social tensions and isolation.

Each community is affected by the quality of environment that surrounds it, this includes: pollution, air quality, noise, the availability of green and open spaces, transport, housing, access to good quality food and social isolation. Access to, and use of, green space is varied and often linked to socio-economic status. The HM Government's White Paper: Healthy Lives, Healthy People (2011) notes how health inequalities in Britain have been getting worse and it is now estimated that people living in the poorest areas will on average, die 7 years earlier than people living in richer areas. Those in the poorest areas will also spend up to 17 more years living in poor health, with higher rates of mental illness, harm from alcohol, drugs and smoking, and of childhood emotional and behavioural problems.

Deprived communities in England are 10 times less likely to live in the greenest areas. Long term conditions such as obesity, diabetes, heart disease and dementia are much more prevalent in these communities and are possibly explained by the chronic stress of poverty and living in a hostile environment. Areas which appear unsafe and intimidating will discourage activity, but by improving the environment it is possible to make physical activity and contact with nature part of everyday life. Across all socio-economic groups, this is associated with improved mental and physical health.

Recent research conducted regarding access to, use, quality and quantity of green space and its impact on physical and mental health, social contact and the influence of socio-economic status

Green space benefits health through physical activity, relief from stress and fatigue and facilitation of social contact. To receive the full health benefits that green space makes available, there are a number of factors which must be considered, such as what influences whether or not people use green space and what they use it for. A wide range of research in a variety of countries has been conducted and looks into such features.

DISTANCE FROM GREEN SPACE IMPACTS PHYSICAL AND MENTAL HEALTH

Distance from useable green space is one reoccurring factor which has been found to influence people's use of green space. Research conducted by Coombes et al (2010) in Bristol found that the further participants were from green space, the less likely they were to use it. This influenced their health as they were less likely to meet recommended physical activity levels and therefore more likely to be overweight or obese. In Auckland, New Zealand, Nutsford et al (2013) also found that being closer to green space had positive health benefits. These benefits however, were related to mental wellbeing. In areas with a greater proportion of green space and with shorter distances to it, the population was found to have lower levels of anxiety and mood disorder treatments than in areas further away and with less available space. Van den Berg et al (2010) also found that residents who lived within a 3km radius of green space were able to deal with stressful life events better than those who didn't, and subsequently experienced fewer health complaints. These results were said to be associated with nature-based coping strategies which enabled people to be more relaxed and calm during worrying times.

PHYSICAL AND PSYCHOLOGICAL BOUNDARIES (INC. GENDER)

Nevertheless, even if green space is available in the community, people may not be able to use it due to physical and psychological barriers. Physical boundaries such as busy roads, fences, and poorly visible paths and signs were found to deter people from using the Thames Chase Community Forest in Upminster, London (Kessel et al, 2008). Size, attractiveness, appropriateness and personal perceptions of safety were also found to be important determining factors in whether or not people would use the community forest. UK-wide research by Richardson and Mitchell (2010) discovered that when faced with more green space, male cardiovascular and respiratory disease mortality rates decreased. However, women did not receive the same benefits. This was due to women not actively using the space as they either had concerns over their own personal safety, or their lifestyle (child care etc.) made it difficult to do so. It is therefore important to note that the benefits of green space vary depending on the population subgroup in question. Kessel et al (2008) also found that the health benefits of green space weren't recognised by some socio-demographic groups, and if they were, they weren't necessarily prioritised.

INFLUENCE OF SOCIO-ECONOMIC STATUS

In the Netherlands, Maas et al (2006) found that having a lack of good quality green space had the most effect on people from lower socio-economic groups. This was because these people cannot afford to move house or travel elsewhere to experience other green space. However, when faced with good quality green space, there were strong relations between perceived general health and lower socio-economic groups. This is because groups who tend to spend more time in their own home environment, such as the unemployed or elderly, receive the most health benefits from the presence of green space. This piece of research found that in areas where 90% of the surrounding environment of the home is green, only 10.2% of the residents felt unhealthy compared to areas

with 10% green environment, in which 15.5% of residents felt unhealthy. In areas of deprivation, poverty-related stress is also common. Mitchell and Popham's (2008) English study found that if these communities had improved environments they would be more protected from such stress and also increase their physical activity levels which would reduce mortality from circulatory disease.

USE OF GREEN SPACE DEPENDS ON ACTIVITIES AND FACILITIES

Park use however, isn't always determined by socio-economic status. To encourage the use green space research has suggested that specific facilities need to be in place, such as well-maintained paths or cycle routes (Coombes et al, 2010). Various studies such as the research conducted for Openspace by Thompson et al (2010) suggest that deprived areas have fewer appropriate facilities. Taking place in six deprived and ethnically diverse study areas - two in the Greater Manchester area, two in the West Midlands and two in London, 46% of people said they would use their local green space more if it had better facilities, such as cafés, toilets etc. By using their green space more, 60% of interviewees thought their overall physical health would improve, 48% thought it could improve their mental health, and 46% thought it would make them feel better about their relationships with family and friends. This research shows that people are more likely to use the space available to them if it is of a high quality, containing a variety of facilities.

However, Cohen et al (2013) found that when comparing 12 high-poverty and 12 low-poverty neighbourhoods in America, parks had the same standard of facilities. The number of people using the park was instead influenced by the number and type of programmed activities. By making sure the space was utilised through creating competitions, events and classes, the number of park users increased. Nutsford et al (2013) reinforce the importance of being actively involved in green space as their research found that there was very little impact on the health of participants who just observed green space up to 300m from their home.

PHYSICAL ACTIVITY IN GREEN SPACE

Whilst Hillsdon et al's (2006) research found no evidence of a relationship between the levels of green space and physical activity levels in the elderly population of Norwich, many other studies have acknowledged that green space provides great opportunities for exercise which will subsequently reduce health issues. In New South Wales, Australia, residents over the age of 45 that lived in greener areas were more active and also at lower risk of psychological distress, showing that exercise can benefit both physical and mental health. Richardson et al (2013) also found that in areas of New Zealand with >15% green space availability there was reduced cardiovascular disease, but this was not just due to exercise. Psychosocial factors also played a role as reduced anxiety, stress and social isolation also influence cardiovascular issues. This research did not find strong direct links between green space and levels of obesity as it was concluded that other risk factors such as diet may be more influential.

SOCIAL CONTACT IN GREEN SPACE

Using green space also provides an opportunity to boost social contact and therefore improve health. In the Netherlands, Maas et al (2009) found that green space was used as a place to meet, for group activities and to build relationships. Results showed that being socially engaged within the community led to living longer lives and better physical and mental health. The strongest relations

were found within a 1km radius of the home. People were also more likely to use the green space for social contact if it contained features that facilitated it, such as benches for sitting and trees for shelter and as noise buffers. Participants who had less green space available reported feelings of loneliness and a lack of social support.

The above research shows that when creating or developing green space, there are a variety of factors which need to be taken into consideration. Ideally, green space should be around 1-3km away from homes, enabling people to benefit from their relaxing properties and enable them to participate in physical activity. So that people can access this space, physical boundaries such as busy main roads, and psychological boundaries such as the area appearing unsafe, should be kept to a minimum. The populations that will benefit most from useable green space are lower socio-economic groups and people who spend more time within their own home. Therefore, deprived areas should be a high priority. To attract more users to the space, the research suggests that suitable, well maintained facilities and organised activities are necessary to provide an environment which facilitates physical activity and promotes social contact. However, even if all of these elements are implemented, it is still crucial that residents are made aware of the health benefits that using green space gives

Current examples of green space being utilised in the UK

Throughout the UK there are a wide range of examples showing how green space can be best utilised in order to create a healthy and sustainable environment. This may consist of already green areas being improved or completely transforming a derelict urban area which contains no aspects of the natural environment. The examples below show how ideas such as community gardens, information centres and urban orchards can really transform an area.

Green space used to provide information and facilitate learning

- [Hawthorns Urban Wildlife Centre](#), Southampton – by providing members of the public with information regarding the wildlife in the area it is likely that they will become more knowledgeable and have more respect concerning the natural environment. This will also encourage people to use the area more
- [Route to Health](#), Cannock Chase – an arts and health trail created by local artists, students, schools and community groups which aims to generate interest and provide information regarding the health benefits of the natural environment in an informal way. It targets those who don't typically access the forest environment
- [Green Shoots](#), New Cross – a project which uses the environment to offer the community a wide variety of courses, such as beekeeping and circus training, whilst also offering educational opportunities such as presentation skills and children's numeracy
- [Green for Go!, Leeds](#) – helping unemployed adults who may have learning, mental and physical conditions to meet in a safe environment whilst participating in outdoor activities such as caring for allotments and taking part in conservation tasks. An Open College Network certificate may be achieved.

Green space as a way for bringing communities together whilst making healthier choices

- [Springfield Park Community Resource Centre](#), Cheltenham – originally shunned by nearby residents due to concerns over safety, after consultation with the locals this centre was transformed and resulted in community pride and involvement in the area. The new design has led to reduced vandalism and anti-social behaviour
- [Leechwell Garden Association](#), Totnes – to encourage more people to use this green space extra features were introduced such as a natural play structure, a pergola and benches. A public art competition also took place with the winning entry being placed in the park
- [Sandford Court](#), Hackney – the creation of a community garden enabled the growth of fresh food in an environment where space was limited. The community also designed and painted a mural to brighten up the estate
- [St Mark's House Estate](#), Northampton – this deprived area now has a self-sustaining garden containing water butts, structures made from recycled materials and plants grown from seed. Plans are in place to build allotments and large numbers have already signed up for them. The community are working together and taking an interest in their environment
- [Incredible Edible](#), Todmorden – a community project which grows food in public space such as herb gardens at the train station and vegetables and orchards planted around the town centre, available for everyone to help themselves to. Businesses, schools and services have all got involved and a wide variety of projects have been created including; a History Project, Every Egg Matters and the development of donated Greenfield sites. After its success the idea spread to Bristol which wants to become the UK's first Edible city
- [Edible Bankside](#), London – members of the public are brought together and develop urban green spaces and take part in local food-growing projects. When residents attend a fun day they are given a free container with compost, seeds and plants to take away and grow themselves. Local schools have also been targeted. Their research has shown that if children grow their own vegetables, they are more likely to eat them. (The Bankside Open Spaces Trust also develops other parks and spaces in this area)

Using trees to transform urban public space

- [Community Orchard](#), Stockport – by planting an orchard in each ward of the borough people will hopefully understand where their food comes from whilst being in a relaxing and peaceful environment. Fruit trees which used to exist in the area will be planted to maintain local species and wildlife. To survive, local commitment is essential but this projects offers great opportunity to improve physical and mental health
- [Treemendous York Group](#) – to improve the appearance of the urban environment, help local food growing initiatives and combat air pollution, this project aimed to plant 50,000 fruit and nut trees around the city in school grounds and public spaces
- [Green Streets](#), Manchester – a project aiming to put trees and other greenery in densely populated, terraced neighbourhoods which are often deprived. The residents are consulted on what they would like to see on their street and the design on each street is specific to their requests. Local people are involved in the planting and maintenance of the trees

Actively engaging various social groups to work together

- [Mundella Park, Nottingham](#) – after clearing a small patch of land, local school children planted flowers, bulbs and strawberries and also designed a mural with the help of their

parents. This gave an opportunity for people to get to know each other and became a place that the community want to look after together

- [Queen Street Guerrilla Gardening](#), Dundee – a group of teachers and secondary school pupils took part in day and night time sessions to transform a local eye-sore that no one claimed to own. A wildflower meadow was created and continues to be maintained by the students. Rubbish has been removed, bird and bee boxes installed and future plans of a herb garden are in place
- [Digging New Boarders](#), Hereford – elderly allotment plot-holders noticed how the skate park next-door was bare and void of vegetation. By working with the young people who used the skate park, the area was transformed. Allotment members taught the children how to use garden tools for a variety of jobs and relations between the two groups were vastly improved. Monthly meetings to share project ideas now take place in the hope to improve the area further
- [Breathing Spaces Project](#), Bradford – a city farm which targets young people (particularly those with mental health conditions or that have struggled with mainstream schooling) and aims to improve their mental health and wellbeing through eco-therapy. Activities such as building fences, caring for animals and growing fruit and vegetables all take place and the group has also produced their own cookbook

Local areas which could benefit from improvements or transformation and why

Using Public Health England's 2014 Health Profile for Chesterfield, it is clear to see that the health of people in Chesterfield varies compared to the England average. Not only is deprivation higher than average, with about 3,800 children living in poverty, but inequality is also apparent. Life expectancy for men in the most deprived areas of Chesterfield is 10 years lower than for men in the least deprived areas (8 years in 2013), and for women it is 7.6 years lower (5.2 in 2013). These figures show that inequality is on the rise and suggests that something needs to be done to target and reduce it.

Whilst adult and childhood obesity levels have reduced since 2013, other health indicators, such as recorded diabetes, early death from cardiovascular problems and hospital stays for self-harm are all worse than England's average. Only rates of statutory homelessness, TB and of people killed or injured on roads are significantly better than England's average. By improving the green space within Chesterfield, it is hoped that health would also improve.

The current and future use of green space in Chesterfield

There are a range of projects and activities that currently take place in Chesterfield's green spaces and some which are planned for the future. Many have health benefits as a primary or secondary outcome. By teaching communities about gardening or encouraging them to engage with each other, healthier lifestyles should emerge as physical and mental health and wellbeing improves. Some examples are listed below:

- Loundsely Green Community Centre have recently created a new community garden containing raised beds, water butts etc. in order to plant herbs and vegetables for everyone to enjoy and help maintain. Actively involving the community will help build relations and growing food should also encourage healthier eating

- Transition Chesterfield's annual Potato Day encourages people to take their first step in growing their own food and any leftover produce is donated to schools to be planted and to help educate children. The money raised from this day helps to pay for the plantation of fruit trees and other edible plants in public places
- 45 fruit trees have been planted in Grangewood by the local school to improve the quality of the environment in that area whilst also aiming to promote healthy lifestyles and healthy eating. By teaching the children about these aspects and involving them, the project should provide longevity as they will continue to maintain the project
- Estate Improvement Budgets have provided some funding to facilitate the planting of crops in some areas. Communities involved have already arranged when they will be cropped so that the food isn't wasted, this will then be sold on or given to charity
- 10 areas around the borough are being close-cut less to create 'wild' areas where pollinating insects can thrive in a wild habitat as the natural environment flourishes. The public will benefit from the health boosting properties that nature provides
- 30 fruit trees and four walnut trees have been planted behind Staveley's Healthy Living Centre. The public are free to help themselves to the produce of the trees. This provides everyone with an opportunity to access free healthy food on a regular basis
- New development of Queens Park Leisure Centre will contain a greenway consisting of various ecosystems (woodland, grassland, wetland etc.) with signs providing information and identification of the various flora and fauna species. This will enable people to experience different types of nature that they may not be used to, whilst encouraging active transport
- In Brimington Cemetery 30 bird boxes have been put up and a wild area created so that visitors can reminisce and remember lost loved ones whilst in a calming, natural environment where wildlife live undisturbed - A similar project is happening at Spital Cemetery where poppies are being planted for World War commemoration
- Pollinating the Peak, 30th April 2015 Winding Wheel – A project which looks at areas within Chesterfield and determines where bees are flourishing or threatened. Chesterfield College are creating woven bee sculptures to be placed on West Bars roundabout and a wooden sculpture of a nesting queen bee will be placed in the grounds of St Mary's Church. By providing the public with the necessary information, it is hoped that they will have more respect for the environment and the fear of bees is reduced. By fearing bees and nature less people will hopefully use the natural environment more
- The three Borough Parks contain a variety of facilities including play areas, cafés, green gyms and lakes for fishing. Graded cycle paths are being implemented in Poolsbrook and being linked with Holmebrook to encourage people to use healthier transport methods and spend more time doing so
- It is possible to volunteer at Poolsbrook Country Park and Holmebrook Valley Park. This enables people to give something back to the community whilst being recognised for their work. It also provides people with a regular place for social contact and physical activity

Potential projects to be implemented in Chesterfield

Chesterfield has an abundance of green space and therefore, rather than create new space, the ideal scenario would be to improve that space. It is important to attract more people to these areas and encourage them to be more active, more often.

Whilst there are lots of green areas, this does not necessarily mean they are of a good quality or have any recreational value. Previous assessment on quality of green space by Chesterfield Borough Council found that many of the smaller sites lacked signs indicating ownership, entrance and boundaries. Many needed refurbishment and repair of basic facilities such as paths and fences. Community involvement in the management of the vast majority of the smaller green spaces was notably absent. Friends groups in Chesterfield currently exist for Queen's Park, Stand Road Park,

Eastwood Park, Homebrook Valley Park, Poolsbrook Country Park, the Inkerman and Pevensey Green.

In areas of deprivation and where community involvement is low, development workers would be needed to engage residents determine their wants/needs and encourage them to be active in the design and management processes regarding their open green spaces. Some residents may not want to get involved or reject ideas to develop previously unused land so it's important that people are aware of the benefits that green space gives. It's important to train the volunteers who wish to get involved to make sure that the schemes survive and the parks/green spaces are maintained in the future.

As Chesterfield has such a diverse demographic, the green space will need to be developed in such a way that allows all members of society to get involved. The needs of all stakeholders should be acknowledged, including those of children, teenagers, the elderly, various ethnicities, disabled and parents. By creating a space attractive to everyone, it is hoped that communities will come together to use the area and social exclusion will be a thing of the past.

A draft 'Parks and Open Spaces' strategy has been created by the Chesterfield Borough Council and shows areas of Chesterfield which are deprived of certain aspects, such as access to good quality green space. Figure 1 shows areas of multiple deprivations with low quality or deprived of open space. This suggests that the areas of highest priority for transformation are in Dunston Ward, Old Whittington Ward, Hollingwood and Inkersall Ward, and Brockwell Ward. I have attached some images taken from Google Maps of some green space available in the largest deprived areas. These images show that there are large areas of grass which are easily accessible for the communities nearby and could possibly be developed.

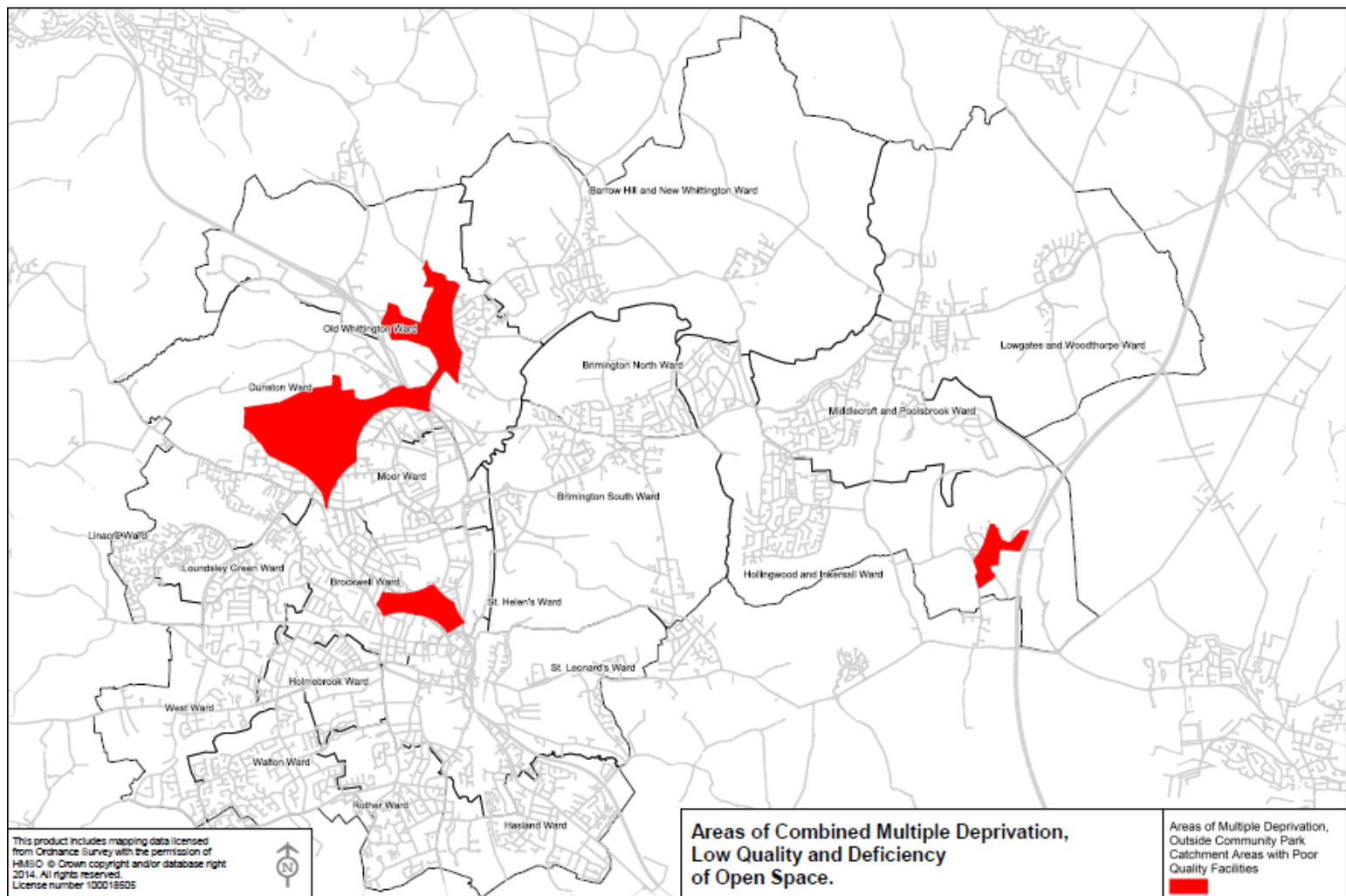


Figure 1

DUNSTON GREEN SPACE



Figure 2



Figure 4

Figure 4 shows two green spaces along Kirkstone Road, one large and one smaller. The larger space contains a LEAP and two football posts. However, these posts are obstructed by the play area. To make the most of this space, the posts could be moved elsewhere on this patch of land to enable people to use them more.

OLD WHITT GREEN SPACE



Figure 5

Figure 5 shows a park in Old Whittington that contains a few play structures and two goal posts. If these goal posts were relocated so that they were no longer at an angle, it would leave more room on the rest of the park and this could then be used for other activities. In the new space made available another set of goal posts could be introduced so that multiple football games could take

place at once, this would facilitate sporting tournaments and enable more people to play at once. The space could also be used as an area for social meetings if more benches were put in place and more trees and hedges planted to create noise buffers and areas of shade. Lack of shaded areas could limit the use of this green space in the summer as families with young children may be reluctant to use it. It would also give parents a space to sit and watch their children play football or whilst they're on the play equipment.

The oval shaped green space of Roecar Close could also be developed on. In contrast to the play area, this space could be used to engage the community with planting their own produce. By getting them involved with the planting of fruit trees and other similar vegetation, people will get to know each other and feel pride in their local space whilst learning valuable skills and having access to readily available healthy food. This is important in an area faced with employment, health and disability, and education and skills deprivation. Local schools could also get involved in this project to teach the children about the importance of being healthy, whilst teaching gardening skills.

OTHER CHESTERFIELD IDEAS

- A map which shows the location of all the parks in Chesterfield would be beneficial on the local council's website. There is currently a list of all the parks, however, if you're new to the area or fancy going elsewhere, it is hard to know where these places are as many are only described by their name and no location given e.g. 'Pearsons Rec'. Other possible features could include locating parks certain distances from postcodes, and listing the equipment and facilities available at each park. This could also be done for allotments and gardens
- Group fitness sessions – there are currently health walks operating in the area and whilst suitable for most, they may only appeal to some. There is a need for something more appealing to the younger generations, something which is more exciting and will get people wanting to be active e.g. introducing ParkRun to Chesterfield – A weekly free 5k timed run in parkland available to people of all abilities and ages, with some meeting for coffee afterwards. 2k junior ParkRuns also exist for children aged 4-14. Also group bike rides, buggy fitness, yoga etc. (in large, developed green space). Active and continuous promotion would be needed to begin with to boost involvement
- GP referral for health activities as mentioned above may be useful to target the needier and more deprived populations. This would provide people with information that shows how the environment can improve health. After their referral they may continue to use other facilities as they are now aware of the benefits they will receive from the natural environment
- Creating community growing areas will encourage residents to grow their own fruit and vegetables either in their garden or public area; if this is successful it may be an idea to develop allotments in these areas as the demand for such space would be evident. These projects will provide people with skills and if possible, an educational certificate may persuade more people to join.
- Involving schools in development projects will encourage the use of green space from a young age and teach skills that will benefit them throughout life. Projects such as planting things, designing play areas etc. will have a positive impact on the children but also their parents as they will subsequently get involved
- In areas containing a high proportion of elderly people, green space which incorporates local history and reinforces a local sense of place may be appealing and encourage them to use it.

By putting in plants, statues, art work or other means which relate to local characteristics and history it will stimulate the memories that people have of the area and improve mental health. This may be best placed in areas with a strong link to the industrial or mining past

- Adding simple facilities such as benches and bins and the plantation of trees and bushes for shade and as noise buffers will encourage more social interaction and a longer stay in the green space. This can be done in areas large or small and will have a massive impact. Adequate lighting is also extremely important as people will not use space if they have concerns for their safety.
- Community involvement is vital. By introducing competitions and events, it is likely that residents will want to spend time in their local green space and take more pride in it.

Possible research design

To make the most of the green space in Chesterfield, the opinions of the local residents are essential. By asking people what they would like to see and seeking their opinions on other ideas, residents may feel as if they are more involved and valued, therefore the area will hopefully be better looked after and vandalism will be kept to a minimum. By engaging the community it is hoped that the local population will feel responsible enough to take on the management of the area and hopefully form a 'friends of' or community group to deal with issues regarding the everyday running and use of the areas. If such groups are formed, a strengthened neighbourhood identity should emerge. To make sure that this occurs residents should be asked about their views through a possible variety of means such as questionnaires, interviews, focus groups and through community forums.

Possible questions include:

- What is your favourite aspect of the space?
- What is your least favourite aspect?
- What would you like to see in this area?
- How do you think the area could be improved?
- What is your favourite thing about the natural environment?
- Are you aware of the health benefits that green space provides?
- How often do you visit green space? Is it important to you?
- What do you mainly use this space for?

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