

URBACT Health&Greenspace network

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Impacts of urban green spaces on social and individual wellbeing



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General context

According to the WHO Ottawa Charter signed in 1986 Health Promotion is “the process of enabling people to increase control over, and to improve, their health”. Over years health has been no more defined as a lack of disease but as the capability of an individual to manage and to face daily life

Wellbeing

From a theoretical point of view wellbeing has been defined by psychologists from a subjective perspective, an approach that has been criticized by Amartya Sen, economist and philosopher, who views wellbeing as a primarily objective. While most studies either use objective or subjective measures for wellbeing, some authors suggest the joint use of the two approaches in order to have a better insight into the relationship between people’s capabilities and their choices or behaviour¹. Sen’s capability approach defines wellbeing as the freedom of choice to achieve valuable functioning (the doings and beings) which one has reason to value most for his or her personal life². The functioning can go from very elementary ones, such as being well-nourished, having a house, avoiding

Social cohesion

People possess a certain amount of economic, social, cultural and psychological and health capital that constitutes individual capability and, in turn, impacts on peoples’ wellbeing over time. According to Putnam⁴ social capital concerns the level of trust in other people and the social networks people are involved in but also the membership of associations and organizations. Among other factors, social cohesion helps to increase individual social and psychological capital with a positive impact on subjective wellbeing. The concept of social cohesion has been defined in different ways, but it could be synthesized as the sense of togetherness, resilience, and orientation towards common goods and it includes feelings of trust, acceptance, belonging and connectedness⁵. Individuals can access to resources to increase the sense of connection among people via membership in a group or community.

Studies show how social cohesion is associated with various physical and psychological health benefits on the general population or specific social groups,

difficulties not only in order to be healthy but also to improve his/her general well-being. In this framework health promotion focus becomes the individual well-being, taking into consideration the totality of pleasures and pains, in other words the quality of life, that is broader than health.

premature mortality or serious diseases, to more complex and sophisticated achievements, as self-respect, living the community life, being happy, living in green environment, and so on. The capability to achieve different functioning depends on the individuals’ opportunities and an autonomy to act, that are conditioned also by societal and economic barriers or constraints³. Wellbeing outcomes are affected by incomes, employment, health but also the quality of the place of living, including the quality and quantity of green spaces in urban contexts. Strongly connected to individual wellbeing we find the social wellbeing, as people are mutually dependent, they need to rely on others, be loved and give love.

such as older people⁶. The likelihood of mental illness is lessened with the increase of social capital and social cohesion even if this relationship between mental health and urban green spaces is mixed and scientists call for more well-designed and longitudinal studies^{7 8}. Studies show also positive effects of social cohesion on specific health challenges related to obesity, stroke, cognitive decline and on health-related behaviours such as smoking, alcohol consumption and the access to preventive health services⁹.

Social cohesion and urban green spaces

Urban green spaces – gardens, parks, greenways and other areas with grass, shrubs and trees - facilitate and encourage positive social interactions that foster social cohesion and, in turn, enhance health and wellbeing¹⁰. In these areas people gather for leisure and recreational purposes. Social interaction in green spaces can provide relief from the daily routine, increase the sense of community belongings, sustain social bonding ties and build

bridges. People who spend the majority of time indoors with a nature deficit have less opportunities for social engagement and have a reduced potential to develop social cohesion¹¹. On the other hand, literature reviews show that the presence and the quality of urban green spaces influence positively social cohesion, such as the sense of community.

Social wellbeing impacts of urban green spaces

The urban green spaces have a relevant impact on residents' wellbeing. According to the European Environment Agency every 10% increase in green spaces has been associated with an increase of five years of life expectancy¹². However, the positive impact is not only on the length of life but also on its quality. Evidence shows that to have access to natural environments improve individual and community wellbeing.

Jennings and Bamkole¹³ summarize the main factors that relate urban green spaces to social interactions and consequently to social dimension of health: open parks design to encourage active recreational activities, the availability of sidewalks, improved access to parks through quality

transportation options, shaded areas that support relaxing environments, functional playgrounds, and the extent of organized activities.

These authors developed a conceptual framework (Figure 1) to illustrate the relationship between cultural ecosystem services from urban green spaces and social cohesion (as a social determinant of health) with social and health outcomes, where social determinants of health are an overarching domain that includes the conditions for living, working, learning and playing. The presence and/or access to urban green spaces stimulate activities that contribute to enhance various health benefits.

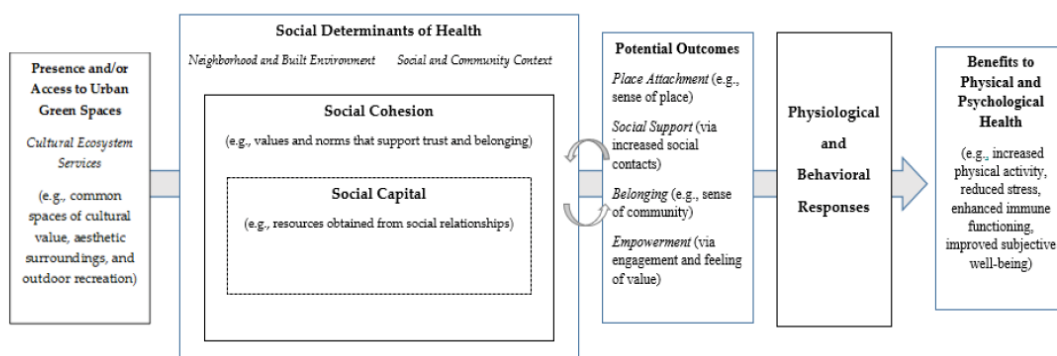


Figure 1. Jennings and Bamkole's conceptual framework illustrating the relationship between cultural ecosystem services from urban green spaces and social cohesion

Source: Jennings, V., & Bamkole, O. (2019). The relationship between social cohesion and urban green space: An avenue for health promotion. *International journal of environmental research and public health*, 16(3), 452.

Pathways to improve wellbeing with the help of urban green spaces

The role of green spaces in strengthening communities and social groups

Urban green spaces have a high value for communities, being the focal points for groups meetings. Indeed, urban green spaces contribute to build a sense of community among residents, promote social interaction, develop social ties and community cohesion. They provide places for social and cultural interaction in informal contacts (place to meet and celebrate with others) and more formal participation in social events (like music performances, concerts, dance up), social inclusion, recreation, individual and group sport activities, aesthetic pleasure and wildlife. As natural meeting points, urban green spaces increase the sense of identity and belonging, support civic society, increase individual social capital, and play a relevant role in any community development. All kind of people, without cultural, religious, ethnic distinctions, can access to these opportunities¹⁴.

Green spaces can provide an appropriate setting for performing various cultural activities, such as public readings, exhibitions, dance and music, plays, drama, and to paint.

Urban green spaces are central spaces for community volunteer groups that provide facilities and activities, and in often they are in charge of the conservation and maintenance of the greenery.

Parks and gardens facilitate collective participatory projects with community involvement and engagement, that can occur at 'making' level (design, plan or construction of new sites), or at 'keeping' level (fundraising, input to management decisions, maintaining vegetation, etc.)¹⁵.

To develop community programs in urban green spaces local authorities should engage and actively involve individuals and social groups through discussion groups and consultations in order to organize with the users' involvement artistic events, sport activities, ethnic minority background activities, leisure programs, community gardens, etc. Through participatory approaches active community groups can share with local authorities the responsibility of tasks, and at the same time partnerships are promoted among different groups.

However, the community involvement requires a change of paradigm with the need to move away

from applying top-down approaches towards public participation in decision-making linked to urban green spaces that increase the sense of ownership of green spaces, resulting in more care, creativity and innovation. Civic society involvement enhances the quality of experiences in urban green spaces and can support long-term sustainability through contributing to creative and innovative approaches for funding. But, in order to ensure community involvement and engagement a change of institutional culture of local government and changes in users' culture is necessary. International policies¹⁶ have encouraged users' participation in the diverse phases of public green spaces development, but for achieving this goal citizens should be informed and motivated to become active in designing, planning and maintaining public green spaces and to promote community programs in these spaces¹⁷. Empirical studies show user or administrator benefits from participation¹⁸ but a lack of knowledge has been found at the level how participation affects quality of green spaces. Fors and her colleagues suggested that further research is needed to shed light on how the application of participative approaches in different development phases can improve physical quality of green spaces¹⁹.

Definitely, local authorities play a key role in ensuring that a common vision is developed with the involvement of different participants that should address factors linked to the quality of public green spaces, such as a pleasant environment, ecological values, participative action and accessibility, and economic benefits for local communities.

Finally, as a reaction to a so-called new libertarian political approach to public good, self-organized parks also began to spread as a result of broader social movements, some developed in opposition to local authorities, others in cooperation with urban planners. For instance, in Berlin according to Rosol there has been a shift over time of the role and involvement of the local authorities from antagonism towards a kind of self-determined land use²⁰.

Box 1 - Open Gardens Program in Poznan, Poland

In Poznan, Poland an 'Open Gardens' programme was initiated in 2017 for unlocking green spaces of public institutions for local communities. Under the programme part of the yards of kindergartens are made accessible for residents.

The idea for Open Gardens came about as a response to the fact that central districts of Poznan lack easily accessible green space and suffer from their uneven distribution. Principally in old, historical neighbourhoods the urban fabric is so dense that there is physically no space to create new green areas. Therefore, the aim of the program is to make better use of existing green spaces in these districts, making them available for as many users as possible. According to the concept a part of the kindergarten yard is made accessible for the local community in a controlled manner.

A pilot project of the program was implemented in a kindergarten in Wilda district of Poznan from March 2017 till June 2018 based on a participative approach. The entire kindergarten community with the children, the preschool teachers, and the parents were engaged in the planning process together with the local community and the district council under the supervision of a landscape architect. A series of three workshops were organized to discuss the needs and concerns of potential users.

As a result of the planning process a place was developed where children can learn about nature, adults can relax, and local residents can grow plants. The local community is allowed to use a designated part of the yard that is separated by a low fence from the rest of the area. The larger preschool part of the yard, accessible only for children, was revitalized through greening and the provision of play facilities. In the 'open garden zone' raised beds, hammocks, a gazebo, seats, an insect hotel, and a composter were installed. All these features aim at fostering social interactions. In the summer season the garden is open from Monday to Friday from 1 PM to 8 PM, and in winter from 1 PM to 5 PM. Until 1 PM the entire yard is used by pre-schoolers. On weekends the garden is opened on individual requests to host get-togethers or workshops.

Following the pandemic additional kindergartens are planned to be opened in Poznan for local communities under the programme The scope of the scheme will also be broadened to include also allotment gardens, where common spaces are foreseen to be opened to host various community events.



Source: City of Poznan

Box 2 - Sonning Common Green Gym, Oxfordshire, UK

The Green Gym is a program put in practice in Sonning Common, Oxfordshire, UK since 1997 on the principle of creating a healthy natural environment and improve people's wellbeing and health. The program is now spread around UK with thousands of volunteers involved. Different work sessions take place in diverse sites in urban spaces (including parks and allotments) or in the countryside. Tasks vary by location so that people with different abilities or difficulties can find the right place. Each session lasts about 3 hours and is led by two team leaders who are responsible for the smooth running of the session. All the sessions follow roughly the following format:

- 'Tool Talk': the safe handling and correct use of tools are discussed as well as the aim of the day.
- 'Warm up': exercises to prepare muscles for activity and reduce the risk of injury.
- 'Work session': always includes light and heavy tasks, there is something for everybody. Most of the activities are made by hand to burn the calories and to get the blood flowing.
- 'Refreshment': time to share food and cakes but also for chatting.
- 'Work session'
- 'Gather up tools': tools are collected and checked if something is missing.
- 'Cool down': exercises to prevent stiffness.

In addition to improving fitness, the participants valued the scheme as a means of enhancing mental wellbeing, being stimulated by nature and enjoying social contact, and as a flexible way in which to attain a valued productive role. Even if the program has adults as main target, children are also welcome. They have to be accompanied by an adult, and children's tools are also provided. The flexibility and diversity of tasks at the Green Gym suggest that it has the potential to enable occupationally deprived individuals, including those who have experienced social exclusion through mental ill-health, to access a productive occupation in the community^{21, 22}.



Source: <https://sonningcommon.tcv.org.uk>, <https://www.tcv.org.uk/greengym>

Community gardening

Broadly, community gardens can be defined as open spaces (public or private) managed and operated by members of the community for growing vegetables, fruits, flowers and even livestock. There are different ways to set up a community garden, such as installing raised beds on an empty lot where neighbours can cultivate and pick products without pre-defined tasks, or establishing allotment gardens, in which community members can rent individual plots for a

monthly or annual fee. But it can also be a private garden where products are shared in exchange for volunteer labour. Community gardens can have a closed or open gate policy, and some are run according to organic cultivation policies or specific rules linked to the use of chemical products.

Scientific literature shows several benefits of community gardens at individual, collective and environmental levels. They create or increase the sense of community or of belonging among

neighbours, offer opportunities for physical activities, sunshine and healthy nutrition with a positive impact on mental health.

Researches show a range of wellbeing and health benefits of community gardens especially for vulnerable populations, groups of people who are likely to fall or remain below a certain welfare threshold due to factors outside of their control, like age, ethnicity, illness, lower socioeconomic status. Malberg Dyg and her colleagues' review shows that being involved in community gardening has positive effects on relationships and social connections, and on local communities, with consistent results among studies involving refugee and ethnic minority populations, disadvantaged youth and elderly²³. Gardeners reported greater social support than non-gardeners, having more opportunities to develop new relationships²⁴. A

Seclusion and areas for reflections in green spaces and individual wellbeing

We have explored how relevant is the role of urban green spaces in reinforcing social relationship and community bonds, but sometimes for their wellbeing people need to enjoy the state of being private and away from other people, to find a relief from the pressure of urban living. Urban green spaces are also those places outside home where people can experience and enjoy nature, plants, trees, birdsongs, and the sound of water in a state of seclusion. In public green spaces one can be in touch with the natural cycle of the seasons. Surroundings are perceived with all sensory modalities, including visual (sight), auditory (hearing), olfactory (smells) and tactile (touch), with a synergistic effect. Sight is relevant as a visual sense of beauty and colour, hearing allows one to sense the sounds of water, birds and other animals, the sense of smell helps one to be aware of the scents from flowers in bloom, and touch to feel the soil while working with it or the breeze upon the skin³¹. Design targeting individual use can support activities like observation of nature (sensory

Education in green space

A research by the University College London revealed that living in areas with more green spaces does not just enhance health and wellbeing outcomes, but could also improve specific cognitive functions in children. The findings suggest that exposure to greenspace may help develop a better spatial working memory, which in turn can improve children's academic achievement and particularly their mathematics performance.³³ A study from

study from Australia has revealed that refugees were able to connect to the new country through community garden participation²⁵. Growing vegetables in community gardens with youth programs was found to improve interpersonal skills, informal social control, cognitive and behavioural competencies and nutrition²⁶. Garden participation strengthens social involvement and connections, improves mutual trust, and civic engagement and contributes to community building, indirectly leading to better health outcomes^{27 28}. Gardens may also serve as effective tools for health promotion among refugees and immigrants²⁹. Furthermore, collective gardens function as an interface between city, nature, and agriculture, that could work toward a sustainable city³⁰.

perceptions) and mindfulness journeys (pathways, labyrinths and sites for reflection).

Walking alone, reading a book, lying with closed eyes on the lawn, having an immersive walk in the woods, sleeping away from the bustle or simply from others are some of the experiences that sometimes people need to do alone in order to get out of stress, to relax, to find their own wellbeing. In urban green spaces men and women can take a rest from the frenetic activities of the city life, or simply from their chaotic life. In case of appropriate dimensions and design it is possible in many public parks to have an immersive, tranquil experience, being surrounded by the sounds of nature.

Nevertheless, there is a lack of scientific literature about the impact of urban green spaces in general, and of areas explicitly dedicated to individual reflections, on positive seclusion and relaxation³².

Taiwan showed similar results, suggesting that higher surrounding greenness contributes to a better English and Mathematics academic performance in students from elementary school, secondary school and higher education regardless of sociodemographic characteristics³⁴. The type of vegetation influences the impact green space has on academic performance. Evidence indicates that children studying in schools with more trees had

higher test scores advanced in Mathematics and Reading. On the other hand, such relationship was not found in case of grass and shrubs.³⁵

If a school is not just simply surrounded by green spaces, but outdoor learning activities are also

organized in these areas as part of the curriculum, that can bring a range of additional benefits to the students. Outdoor learning can be undertaken as part of fieldwork in various natural sites and forest schools, or outdoor visits to parks, forests, nature centres and gardens.

Box 3 - Forest School in Baggot Estate, Limerick, Ireland

Baggot Estate is a public park west of Limerick city, Ireland. Once a week from September to December 2020 a local primary school for children with a hearing impairment delivered a Forest School in Baggot Estate. Each session lasted three hours with children from 2nd to 6th class (8-12 years old) engaged in outdoor learning. The teacher who is a Forest School Leader, used the outdoor space to engage students in their learning but also helping to maintain social distancing as per government guidance for teaching and learning due to COVID-19.

Before each session the teacher and two students prepared an area in the estate for the Forest School. This included establishing boundaries which were extended each week. Informed by the primary school curriculum activities were linked to subject areas such as, social, environmental and science education, art and craft, English, social personal and health education, mindfulness, imaginative play and physical education, including balance and movement. Under the scheme other schools are encouraged to engage in similar activities in Limerick.



Image: Forest School Ireland

In 1994 in California an assessment of schools incorporating outdoor learning into their curriculum showed that secondary students from schools undertaking outdoor learning activities scored higher in a number of fields, such as reading, science and maths than students from traditional schools.³⁶

The findings of a study conducted in Amsterdam show that the proximity of green spaces strongly

stimulate environmental education fieldwork. Visits to neighbouring green spaces were found to encourage teachers to organize more excursions that are further away from the school. The teachers involved in the study reported that lessons become more vivid helping pupils to stay focussed more easily.³⁷

Environmental field studies in ecology organized for school children were also found to improve social skills of the students.³⁸

Outdoor learning can take place not just outside the school's premises, but also in green schoolyards, which are used as 'outdoor classrooms'³⁹. Sealed school grounds can be transformed into educational spaces, natural play spaces, educational organic gardens with raised beds, larger well-treed areas, or wildflower meadows. Numerous subjects can be taught in green schoolyards that are turned into outdoor classrooms, such as reading, writing, mathematics, sciences, environmental education, social studies, art and drama.^{40, 41}

In a research undertaken in Boston, 60% of the interviewed educators involved in school grounds programmes reported that their school garden schemes improved academic achievements in the fields of mathematics, sciences, language, art and reading.⁴² Schoolyards that are specifically designed to support learning can have a calming effect on students⁴³, can reduce anti-social behaviour and build a stronger sense of community⁴⁴. Children attending outdoor day-care facilities in schoolyards in any weather conditions were found to take fewer sick days than those attending conventional day-care facilities⁴⁵.

Physical activity in green space

According to World Health Organization (WHO) physical inactivity is the fourth leading risk factor for global mortality.⁴⁷ A study by the University of Cambridge indicated that almost 4 million premature deaths are being averted worldwide every year by people maintaining physical activity.⁴⁸

Availability of green space and greater levels of physical activity are strongly linked, as well as the associated health benefits. A study by the University of Oxford revealed that people who live in the greenest areas of England were more likely to undertake increased amounts of physical activity⁴⁹. Parks provide places for people to engage in physical activity. Large and attractive parks were found to promote walking for health benefits⁵⁰.

Several studies pointed to the role of natural factors of urban green open space in promoting physical activity suggesting that grass, trees, or flowers, cleanliness, maintenance, and aesthetics of the urban green open space were positively associated with physical activity.⁵¹

Evidence suggests that out of all the relevant factors, close access to the site is the most relevant

The team of Out Teach Landscape Architecture, a non-profit organization based in the United States, has provided a guidance on creating quickly and inexpensively outdoor learning spaces.⁴⁶ Their most important recommendations include the following:

- a spot with natural shade should be identified for an outdoor learning space;
- the site should be located near school doors so that it can be accessed and left quickly,
- proximity to playgrounds and sport fields should be avoided, to prevent distraction during the class,
- a whiteboard should be installed at the site, as teachers are less likely to use the outdoor classroom regularly if they need to bring along the equipment,
- tree stumps can be used as inexpensive seating,
- it is essential to provide a waterproof storage option near the whiteboard, where markers, wipes, cleaners, pencil and paper can be kept.

one that contributes to increased physical activity in green space. People who are within walking distance of a park are more likely to use it and the recreation services provided at the site, than those who are not.⁵²

In a study, Kostrzewska from the Gdansk University of Technology, apart from highlighting the relevance of proximity to the place of residence, lists a number of other relevant features that should be considered during green space design that aims at increased physical activity⁵³:

- public spaces to be activated should be connected into a cohesive system that allows active mobility among different city areas,
- to facilitate active and safe travels, bicycle stands and parking spaces should be provided near the activity areas,
- the facilities to be installed should be diverse and multifunctional to encourage all age groups to undertake physical activity,

- the design needs to be adapted to the local context and the surrounding landscape,
- the green activity and recreation spaces should allow use all year round and in all weather conditions, due to good lighting, and various architectural features protecting from sun, wind, rain, or snow.

The development of large, open areas can maximize outdoor space appropriate for physical activity⁵⁴. Park activity features (walking paths, play spaces, sport fields) should be complemented by good quality support features such as benches for rest and observation, shading, water fountains, and restrooms to attract higher visitation⁵⁵. A review of studies provided evidence that neighbourhood spaces that encourage social interaction also stimulate physical activity⁵⁶. As green activity spaces also have an important social function providing a meeting place for local communities, urban furniture that supports social interactions such as proper seating are particularly relevant in design⁵⁷.

A review of studies provided evidence that neighbourhood spaces that encourage social interaction also stimulate physical activity.

Mixed-use parks, that facilitate a variety of activities and provide numerous reasons for more people to walk, show higher levels of physical activity⁵⁸. Access to activity spaces depends on good connectivity. There is a need to improve travel connections to park and recreation facilities⁵⁹. A greater variety of paths and a higher density of intersections within and next to parks supports more walking and physical activity⁶⁰.

Proper design of park space and various facilities alone is not sufficient to physically activate visitors in green spaces, since as evidence shows that the organization of social programs and actions are also essential in bringing active park use to a higher level⁶¹.

Scheduling a wider menu of organized park activities and recreation programs targeting various groups of society can effectively improve the potential of green spaces for supporting physical activity^{62, 63}. Onsite and offsite promotion of park programs have an important role in increasing awareness of organized park opportunities and in achieving higher levels of active use of green space⁶⁴.

Box 4 - Physical activity taken outside in the Active Parks programme in Birmingham, UK

The Birmingham Active Parks scheme offers free physical activity sessions at various parks across the city with the aim to encourage people to enjoy being active, to improve their health and wellbeing, and to strengthen local communities. The sessions run throughout the year and include a wide range of activities, such as led walks, running, cycling, frisbee, Tai Chi, Zumba, boules, skipping, rowing, tennis, gardening, orienteering, or nature play.

Active Parks was meant to animate previously underused parks, and aimed to tackle social inequalities. The programme first started as a pilot project in 2013 in six parks, and then over the years it was gradually rolled out to over 80 parks and green spaces across Birmingham. The activities were specifically designed to engage those who would not normally use traditional sports facilities. The scheme has successfully engaged groups of society that are typically underrepresented in sport activity, such as women and ethnic minorities. In many activities children are involved helping mothers who have difficulties with child care. In 2016 over 80% of participants came from the most deprived areas of the city. The activities successfully engaged young children and the elderly. In case equipment is needed for the sessions a van is used by the Active Parks team to transfer them around various sites.

The evaluation of the scheme shows its effectiveness, particularly among inactive people, as 74% of the users were previously not a member of a sport facility, and 20% of the users were previously totally inactive.

Sources:

https://sportengland-production-files.s3.eu-west-2.amazonaws.com/s3fs-public/active-design-active-parks-case-study-march-2017.pdf?3irXdTM9P9mG_GjTaaLL8NOC7Aubw6uq
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<https://www.readkong.com/page/improving-the-condition-of-public-spaces-to-promote-active-1249146>

Social inequality, social inclusion and green spaces

The provision of urban green spaces has been recognised as an environmental justice issue⁶⁵. Indeed, sufficient and equitable access to urban green represents a key aspect for adequate living conditions and a healthy environment in urban areas enabling social interaction and integration. It has been recognised that greener environments contribute to reduce socio-economic health inequalities, and that differences in urban green provision are related to income, ethnographic characteristics, migration background, age, gender, education and children in households⁶⁶, and that many minority communities lack green space access⁶⁷. According to Wolch and colleagues⁶⁸ most Anglo-American studies on urban green space reveal that white and more affluent communities disproportionately benefit of the distribution of these spaces, especially public parks, that can perpetuate or even exacerbate environmental inequalities around benefits that derive from their availability. The mean distance to green space increased with neighbourhood deprivation⁶⁹. Other authors show social inequality challenges not only due to the availability of green spaces but also to the accessibility as there are also ethno-racial barriers when some minorities feel 'out of place' or 'unwelcome' or excluded from some parks clearly featured for white clientele⁷⁰. Moreover, green spaces in the more deprived neighbourhoods show more safety concerns, signs of damage and lack of

Security in green space

Parks can function as community spaces as long as they are considered safe by potential users. There is an indication that parks and other urban green spaces can in general prevent violence. In a study undertaken in Chicago in 2001 it was found that residents living in a greener urban area reported lower levels of fear, and less aggressive and violent behaviour⁷⁴. A similar relationship was seen between green space and crime in another study conducted in 2012 in Baltimore that has shown that a 10% increase in tree canopy brings about a roughly 12% decrease in crime⁷⁵.

But the type and quality of the green spaces really matters when it comes to perception of safety. In line with a study undertaken by Schroeder and Anderson undeveloped densely forested sites are associated with low security, while open areas with few trees are perceived significantly safer⁷⁶. Another study carried out by Talbot and Kaplan has found similar results indicating that well-maintained

maintenance, shortage of equipment to engage in active leisure activities, and less facilities such as seating, toilets, cafés⁷¹.

Many cities around the world have developed strategies to face this source of inequality by designing parks in poor neighbourhoods using abandoned urban land or reusing obsolete transportation infrastructure. Nevertheless, the creation of green spaces in marginalized or poor urban neighbourhood can have a paradoxical counter effect: gentrification, with the displacement of the target population for which green spaces were created due to the increase of housing costs^{72, 73}. Consequently, the risk is that in gentrifying neighbourhoods, only those with high education or high incomes take advantage of neighbourhood green space. (Green) gentrification, along with segregation, can exacerbate urban inequality.

Keeping in mind that the simple presence of green spaces is not a guarantee to social inclusion and social justice, urban planners should design green spaces to ensure adequate and equitable access keeping in mind social sustainability and environmental justice. Structural interventions, such as the development of new green space, should be planned and evaluated within the context of urban social inequality and change.

areas were preferred over more untouched and densely wooded areas, which were often associated with danger⁷⁷. View distance seems to be a decisive factor in the perception of safety in green spaces. Research suggests that at sites, where vegetation blocks views, fear of crime increases⁷⁸.

Design and maintenance of green spaces are critical in improving the public's perception of safety. Evidence suggests that investing in a combination of good design, attractive facilities, park staff and maintenance of spaces can be more effective in avoiding vandalism and anti-social behaviour, than the use of video surveillance⁷⁹. Investing in the quality of the park can result in long-term savings. as a significant proportion of parks' maintenance budgets in cities is spent on replacing vandalised items in parks⁸⁰.

Open views and visibility are essential to perceived security⁸¹. Visibility is as much about being seen as about being able to see around. For people to feel safe and secure in public spaces, other people need to be present in accordance with the concept of “eyes on the street” proposed by Jane Jacobs⁸². Therefore, the animation green spaces with a range of activities is relevant in improving perceived safety. Parks that are heavily programmed on a regular basis tend to attract more visitors. After dark, carefully designed lighting can promote positive activities in parks reducing violence⁸³. Maintenance of greenery is another essential factor, as low levels of maintenance in urban green areas were found to result in reduced perceptions of safety⁸⁴.

The Commission for Architecture and the Built Environment (CABE), a former non-departmental public body of the UK government responsible for advising on architecture and urban design, which was merged in 2011 into the Design Council, had provided recommendations for preventing anti-social behaviour in green spaces^{85, 86}:

- a clarity of the design with open vistas and clear sight lines should be ensured,
- exits should be visible and long corridors with no alternative ways out should be avoided,
- positive features that attract people to parks, such as play spaces, flower and herb beds, water features and boardwalks should be developed,
- in the design passive surveillance from surrounding areas should be exploited; cafés, apartments, stores and offices within parks or nearby have a great potential in this regard,
- to be able to create a public space that is attractive for various user groups, it is important to involve early on the community in the design and maintenance of the green space,

- there are significant benefits of involving ‘problem’ groups or various under-represented groups in the revitalisation of green spaces, so that they feel a sense of ownership,
- the establishment of ‘parks’ friends’ groups’ can lead to significant improvements in levels of anti-social behaviour, since such groups can support informal surveillance,
- introducing a park warden service, ensuring that park staff is patrolling larger parks can dramatically increase the perception of safety among visitors.

A guide produced by Toronto Parks & Recreation also highlights a number of aspects to consider to create safer parks⁸⁷:

- the layout of the park should be easily understood, entrances and exits should be easy to locate, focal points should be clearly visible,
- the edges of the park should be open, allowing the passer-by to see into the park and park users to look out,
- the location and clustering of activity areas, such as play spaces and sports fields should allow informal surveillance,
- a diversity of physical features, vegetation and activities is likely to result in attractive environments and frequent use,
- it is beneficial to locate washrooms beside major activity areas,
- lighting should help in directing movement between destinations at night,
- night-time activity nodes should be located nearby street lighting.

Box 5 - Bryant Park, New York, USA: A no-go area converted into a popular social arena

Bryant Park in New York City, which once was a place for criminal activity, was transformed as a result of an extensive renovation lasting four years into one of the most welcoming and influential public spaces in the world.

After decades of deterioration from the 1960s, by the early 1980s the park became an intimidating area that was taken over by drug dealers, prostitutes and homeless people widely avoided by New Yorkers.

Poor design was the reason for the bad conditions. The park itself was elevated from the street, surrounded by high walls and covered from view by tall hedges. Sideways were connected to the park by steps at narrow entrances. The site lacked activities and amenities.

As part of the renovation starting in 1988, the park was cleaned up, graffiti were removed, damaged architectural elements were repaired. The park was lowered nearly to street level, entrances were opened up, and iron fences and shrubs were removed to improve visibility. To improve accessibility of the site, new entrances, stairs, ramps and pavements were added. New lighting was installed in the park and also on a nearby rooftop to improve the perception of safety at night.

Furthermore, a number of actions were taken to attract people into the park. More than 2000 moveable folding chair were scattered around allowing visitors to sit wherever they wanted. Two food kiosks were installed and a restaurant and outdoor cafe were built. These services operated by private companies apart from attracting visitors also provide income for the park's maintenance.

The organization of various events, activities and games, such as chess and pétanque in the newly refurbished park also proved to be a magnet for users. An outdoor movie series held at night became particularly popular among visitors. Providing access to outside programmers generates additional income for the park's operation and maintenance.

As a result of increased access and visibility, improved lighting and a range of services, events and activities provided, in seven years following the reopening of Bryant Park, crime had been reported to be reduced by 92 percent.



Image: Dominik Pearce, Unsplash

Sources:

<https://www.pps.org/projects/bryant-park>

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