

PERFECT
expert paper 2



planning for green infrastructure – the green space factor and learning from europe



By Peter Massini

Lead – Green Infrastructure, Greater London Authority
and Henry Smith

Projects and Policy Manager, Town and Country Planning Association

PERFECT project – Planning for Environment and Resource eFFiciency in European Cities and Towns

PERFECT Expert Paper 2: *Planning for Green Infrastructure – the Green Space Factor and Learning from Europe*

By Peter Massini and Henry Smith

Peter Massini is Lead – Green Infrastructure at the Greater London Authority and Henry Smith is Projects and Policy Manager, Town and Country Planning Association. This Expert Paper has been prepared on behalf of the PERFECT project.

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About PERFECT

PERFECT (Planning for Environment and Resource eFFiciency in European Cities and Towns) is a five-year project, running from January 2017 to December 2021, co-funded by Interreg Europe. It aims to demonstrate how the multiple uses of green infrastructure can provide social, economic and environmental benefits. It will raise awareness of this potential, influence the policy-making process, and encourage greater investment in green infrastructure.

To find out more about PERFECT, visit <http://www.interregeurope.eu/perfect/>
Or contact: Henry Smith, Project Manager – PERFECT,
TCPA, 17 Carlton House Terrace, London SW1Y 5AS, United Kingdom
e: henry.smith@tcpa.org.uk t: +44 (0)20 7930 8903
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Foreword

Regions across Europe face similar challenges. Identifying solutions together is far more efficient than going about it alone. Through inter-regional learning we can inspire one another, discover what works best, and develop innovative approaches.

As the only territorial co-operation programme covering all regions in the European Union, Norway and Switzerland, Interreg Europe helps regional and local governments to share their experiences in order to develop and deliver better policies. Thematically, the programme covers four strategic topics: research and innovation; SME (small and medium-sized enterprise) competitiveness; the low-carbon economy; and environment and resource efficiency. Interreg Europe contributes to European cohesion, as well as the development of policies aimed at delivering a smarter and greener Europe.

Supported by the European Regional Development Fund with €359 million from 2014 to 2020, Interreg Europe fosters inter-regional learning through co-operation projects and a Policy Learning Platform. The programme supports more than 200 projects, with the participation of almost all regions in Europe. Furthermore, the Policy Learning Platform offers a good practice database, networking opportunities, and thematic advice to anyone interested in the programme's priorities. The peer reviews offered are another excellent tool enabling regions in Europe to exchange and learn.

Policy learning and capacity building among policy-makers and public authorities enhances the efficiency of public intervention and yields benefits to the citizens as well – with proven results. In 2018, we ran a study on the impacts of inter-regional co-operation. Based on the results of INTERREG IVC projects implemented in 2008-2014, inter-regional co-operation demonstrably leads to policy changes and delivers long-term impacts in the regions. Furthermore, beyond the immediate benefits gained by the partners involved, the broader impacts continue to be observed even after project closure.

Monitoring the exchanges of experience in projects implemented all over Europe, we truly see the value of inter-regional learning in creating solutions to our common challenges. As demonstrated in this Expert Paper, drawing on the results of the GRaBS project (INTERREG IVC) and the ongoing work in the PERFECT project (Interreg Europe), there are already excellent examples of the added value of inter-regional learning, and the currently active projects continue to provide new inspiration for the future.

Erwin Siweris
Programme Director
Interreg Europe

1 Introduction



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The purpose of this Expert Paper

The primary purpose of this Expert Paper is to demonstrate ways to create better outcomes from the development of urban areas through planning for green infrastructure (also known as nature-based solutions). Its objective is to influence the development of strategies and plans for the future of urban areas by highlighting innovative ways in which green infrastructure can be secured through the development of the built environment.

Creating greener towns and cities can lead to benefits for the health and wellbeing of the population. Green infrastructure also plays a multi-functional role in reducing flood risk, increasing competitiveness, improving resilience to extreme temperatures, and conserving biodiversity. Consequently, it is increasingly acknowledged that green infrastructure is essential for the economic and environmental sustainability of our towns and cities.

This Expert Paper draws on a decade of the TCPA's international experience to highlight how the planning system can be used as a unique means to deliver these benefits, through facilitating collaborative working and taking a holistic approach to place-making. In particular, it tracks the use of the Green Space Factor (GSF) as a tool to deliver high-quality places in various cities across Europe, and includes a section prepared on behalf of the Greater London Authority on how it has adapted and included the GSF in the draft new London Plan.

The transfer of the principles of the GSF between cities and regions across Europe has been facilitated through inter-regional projects that have shared experience and expertise among public sector policy-makers and practitioners. This Expert Paper highlights the outcomes of those projects and makes the case that it is valuable for public administrations

to participate in international projects, in order to learn how other cities and regions have developed policy approaches to address similar challenges.

Who is this Expert Paper for?

This Expert Paper is intended for an audience of policy-makers and practitioners working in public sector organisations at a local level, and their delivery partners. It demonstrates how the GSF can be a useful tool in creating greener cities, shows how it works, and sets out examples of how it has been applied.

The Expert Paper is also targeted at national and international organisations responsible for setting policy frameworks and investment strategies, as it details how high-quality outcomes for people across Europe can be delivered through a robust planning system.

The structure of this Expert Paper

Section 2 of the Expert Paper explains what green infrastructure is and why we need to invest in it, based on its multiple benefits for cities and regions in Europe.

Section 3 describes the importance of planning for green infrastructure and the different components of a successful planning system that are crucial to creating economically viable, green and prosperous areas.

Section 4 provides an overview of the GSF and includes case studies from across Europe highlighting different approaches to the use of the tool. This section also highlights the value of inter-regional learning projects in sharing experience on planning for green infrastructure and the use of the GSF.

Section 5 gives a detailed explanation of how the Greater London Authority has developed its Urban Greening Factor – learning from the use of the GSF – and why it has chosen to adopt this policy.

2 What is green infrastructure, and why is it important?



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What is green infrastructure?

Green infrastructure can include a wide range of features, such as parks, gardens, green spaces, green roofs, green walls, street trees, meadows, wetlands, rivers, canals, and lakes.

There is general agreement that green infrastructure:

- should be considered as a network, not just a single site;
- operates at a range of different scales – for example from a rain garden to a floodplain; and
- is multi-functional – it is designed and managed to provide a range of different benefits simultaneously.

Why is green infrastructure important?

There is abundant research demonstrating that green infrastructure provides a range of economic, social and environmental benefits, including:

- improving people's mental and physical health;
- reducing air pollution and improving water quality;
- protecting against climate change – for instance by helping to reduce flood risk, storing water for times of drought, storing carbon, or preventing soil erosion;
- providing jobs and contributing to economic competitiveness;
- increasing biodiversity;
- encouraging local food growing, healthy eating, and healthy-food environments;
- encouraging active travel and safer roads; and
- using limited land efficiently by providing multiple benefits simultaneously.¹

1 See *Planning for Green and Prosperous Places*. TCPA, Jan. 2018. <https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=db632de1-38cc-468a-9401-0599b0bea52b>

Furthermore, high-quality green infrastructure contributes to making places more attractive to investors and increases property values.

Green infrastructure is an important part of the world's 'natural capital', i.e. the resources that nature provides for us and on which our economy – and our lives – depend. Natural capital includes assets such as land, minerals, soil, water, air, and all living things.

EU policies on green infrastructure

The view of the European Union (EU) is that green infrastructure should be integrated into most EU policies, and that it is also important in the better implementation of spatial planning tools. It should also be considered during Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA). Green infrastructure is recognised as contributing to facilitating smart and sustainable growth.

EU Green Infrastructure Strategy

The EU Green Infrastructure Strategy advocates the full integration of green infrastructure into a wide range of policies so that it becomes a standard component of development across the EU. The strategy recognises that green infrastructure solutions are particularly important in urban environments, where more than 60% of the EU population lives and where the multiple benefits of green infrastructure can have the greatest impact.²

Investing in high-quality green infrastructure

The European Commission's *Building a Green Infrastructure for Europe* states that:
*'Investing into Green Infrastructure (GI) makes sound economic sense – a single area of land can offer multiple benefits, provided its ecosystems are in a healthy condition. Such healthy ecosystems, which are powered by the diversity of life within them, provide society with a stream of valuable, economically important goods and services such as clean water and air, carbon storage, pollination etc. They also play a central role in fighting climate change impacts by protecting us against floods and other environmental disasters.'*³

This is the context within which the Interreg Europe PERFECT project operates – to maximise the opportunities for investment in multi-functional green infrastructure by influencing policy-makers so that they improve investment and planning strategies.⁴

2 *Green Infrastructure (GI) – Enhancing Europe's Natural Capital*. COM(2013) 249 final. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. European Commission, May 2013. https://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF

3 *Building a Green Infrastructure for Europe*. European Commission, 2013
http://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructure_broc.pdf

4 See the PERFECT project website, at <https://www.interregeurope.eu/perfect/>

3 Planning for green infrastructure



jamesteohart/Shutterstock

The purpose of planning

Town planning is a vital means of securing the long-term wellbeing of our communities. At its best, good planning has a transformational role to play in shaping the places in which we live and the quality of life of our society – enabling the efficient use of resources and infrastructure, with multiple benefits to society, the environment and the economy.

To be effective, the planning system must be capable of dealing not simply with land use but with the broader social, environmental and economic implications of change for people and places. The challenge is that it must strike a balance, in which the development needs of our communities are met in the most sustainable ways.

Working in partnership to create great places

Effective delivery of multi-functional green infrastructure depends on a co-ordinated, place-based approach which is sensitive to local needs and aspirations and the local landscape and topography. Planning is uniquely placed to bring together a range of professionals and key stakeholders across sectors to create a holistic vision of what the future of an area could be. Creating great places needs strong partnership working, and an effective planning system must be flexible and encourage a dialogue between competing interests during the development process.

Good planning is the product of a collaborative process of developing and implementing policies. This Expert Paper gives details of a policy tool that encourages clear communication between public administrations and developers, enabling them to work together to produce greener places.

4 The Green Space Factor – and European case studies



PIXEL to the PEOPLE/Shutterstock

Introduction to the Green Space Factor

The Green Space Factor (GSF) is a way of determining green infrastructure requirements for new development. It is used within the policies of many municipalities to set requirements that developers must agree to before planning permission for a site is granted. The aim is to ensure that, in creating places, green infrastructure is planned at the earliest stages.

The GSF has been adapted in different ways across Europe. Its adaptability has been one of the reasons that it has been successfully transferred between cities, as it can be altered to suit various political, planning and cultural contexts.

This section gives a general overview of the GSF and its principles and objectives, outlines different variations and approaches, and offers case study examples of where it has been used.

How the GSF works

The GSF works by setting out in planning policy a municipality's expectations on how green a new development should be if it is to secure planning approval, with a particular focus on the *function* of the green elements provided, as well as their quantity.

The GSF policy sets out 'factors' (between 0 and 1) for various surface cover types – hard, sealed surfaces are given a score of 0, and the greenest and most natural surfaces a score of 1. A GSF score for a particular site is calculated by multiplying the area of that surface cover type by the factor that is assigned to it. The resulting scores for each surface cover

type are added together, and the result is divided by the overall site area to give an overall GSF score between 0 and 1.

Municipalities can set different thresholds for their expectations. The principle of the GSF approach is to act as an enabler, by facilitating discussions between the developer and the municipality about how to achieve a target score and deliver great places in which people can thrive.

Benefits of the GSF

One of the benefits of the GSF is that it encourages collaborative working across the public and private sectors through a planning tool which is flexible and easy to understand in delivering green infrastructure in new development.

The approach can help all parties in the development process. Developers are able to adapt masterplans and designs within a clear policy framework to reflect changing demands and circumstances. Municipalities can engage proactively with developers and the community to secure their place-making objectives. New and existing communities benefit from developments that incorporate the multi-functionality of green infrastructure.

The GSF is especially relevant to towns and cities that are having to densify to accommodate growth. Where there is pressure on the use of land and where space for traditional parks and green spaces is in shortest supply, the GSF can ensure that green infrastructure is embedded into the built environment, thereby offsetting some of the adverse impacts of increased density.

The GSF can also help those policy-makers and politicians in other policy areas to understand the potential benefits of green infrastructure for their areas of responsibility, thus encouraging them to support the case for more greenery in cities.

Limitations of the GSF

The GSF is designed to help assess new development proposals. Importantly, it needs to be applied within a wider policy framework on green infrastructure. It must be set within a suite of policies and strategies that establish the vision and objectives for green infrastructure and wider policy objectives on biodiversity, health, and climate change adaptation. It is not intended to be a replacement for policies to ensure the preservation of existing parks, green spaces, and other natural assets

It has been argued that there are potential risks from using the GSF, as it could provide a justification for developing on existing green space, offset by the provision of alternative or compensatory green infrastructure within the development. However, this is not the purpose of the GSF, and such circumstances should not arise if the GSF is set within a wider policy framework.

An argument has also been made that the application of the GSF in different municipalities and jurisdictions can be problematic if local circumstances are not properly considered. This emphasises the need for all land use planning policy to be applied with full regard to local circumstances and with clear definitions applicable to the local context.⁵

5 *Urban Greening Factor for London*. Research Report. The Ecology Consultancy, for the Greater London Authority, Jul. 2017. https://www.london.gov.uk/sites/default/files/urban_greening_factor_for_london_final_report.pdf

Case study: Malmö – the GSF and the Green Points System

Overview



Green courtyard at Western Harbour, Malmö

The story of the GSF in Malmö is part of Malmö's journey from an industrial city in economic crisis to a modern, sustainable city.⁶

The GSF was first used in Malmö for the development of the Western Harbour, one of Malmö's largest construction projects, with a planned population of 20,000. The project was launched in 2001 and is due for completion after 2030.⁷ This major redevelopment has been underpinned by a commitment to the natural environment and high-quality place-making. This commitment to green infrastructure is part of the city's overall plan. The Comprehensive Plan for Malmö, adopted in 2018, is ambitious about creating a greener city, despite densification. To achieve this, the plan requires innovation on issues such as space efficiency and maintenance and 'increased multi-functionality of green areas'.⁸

6 A Kruse: *The Green Space Factor and the Green Points System*. GRaBS Expert Paper 6. GRaBS project. TCPA, Apr. 2011. <https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=c6ecd8bc-a066-435f-80d6-d58e47ab39a7>

7 See Malmö City Council's 'Western Harbour' webpage, at <https://malmo.se/Nice-to-know-about-Malmo/Sustainable-Malmo-/Sustainable-Urban-Development/Western-Harbour.html>

8 *Comprehensive Plan for Malmö: Summary in English*. Malmö City Council, May 2018. https://malmo.se/download/18.cb832751656711ccfb1673/1535372065627/OP_english_summary_lores.pdf

Box 1

Transferring the use of the GSF through international projects

Adapting towns and cities to climate change and the threat of extreme weather events is a growing challenge. To help communities cope with what is to come, the TCPA-led GRaBS (Green and Blue Space adaptation for urban areas and ecotowns) project – an INTERREG IVC project with 14 partners drawn from across Europe – provided urban designers, architects and planners with the tools and know-how to make buildings and outdoor spaces more resilient to the potential threats posed by climate change, such as flooding and intense heat.^a The project won a RegioStars Award for Sustainable Growth in 2012.^b

The GSF, as presented in GRaBS, proved to be a particular success story of the power of exchanging experience between partners and regions. Through GRaBS, the GSF was transferred from the City of Malmö to Southampton, and applied to green infrastructure policies in the North West of England.^c Tangible local improvements to policies were witnessed during the lifetime of the project, through enhancing the capacity of staff and politicians working at a local level to create greener regions across Europe.

a See the GRaBS Resource Archive, at <https://www.tcpa.org.uk/grabs-resource-archive>

b *RegioStars Awards – 10 years of Success Stories*. European Commission Directorate-General for Regional and Urban Policy. Publications Office of the European Union, 2017. http://ec.europa.eu/regional_policy/sources/projects/regiostars/doc/regiostars/2017/regio_stars_10years_en.pdf

c *Green Infrastructure to Combat Climate Change*. Consultation Draft Action Plan for Cheshire, Cumbria, Greater Manchester, Lancashire, and Merseyside. Community Forests North West, Sept. 2010. http://www.greeninfrastructurewn.co.uk/resources/GI_and_CC_Action_Plan_Consultation_Draft_02.09.10.pdf

The GSF plays a key role in the delivery of this vision across the city and is prescribed for each detailed development plan.

How the GSF has been used

The GSF was adapted in Malmö from Germany, where it was used initially in Berlin as the Biotope Area Factor.⁹ The aim of the GSF in Malmö is to secure a certain amount of green cover on a development site, and to minimise the degree of sealed or paved surfaces. It applies to the whole development, taking into account both the building areas and the open space.

The city's green space strategy says that the GSF should be used for both new buildings and major refurbishments. The GSF needs to be raised early in discussions between the municipality and the developer, and secured in developer agreements. The GSF for residential properties and schools is set at 0.6, and for offices at 0.5.¹⁰

Evolution of the GSF and the Green Points system

The City of Malmö found that the policy could incentivise surface cover types of a higher functionality than others by assigning them a higher factor. It was also possible to layer different surface cover types to achieve a higher GSF score – for example, an area of grass

9 *The Biotope Area Factor as an Ecological Parameter*. Landschaft Planen & Bauen and Becker Giseke Mohren Richard, Dec. 1990. https://www.berlin.de/senuvk/umwelt/landschaftsplanung/bff/download/Auszug_BFF_Gutachten_1990_eng.pdf

10 *Riktlinjer för Grönyte-faktor*. Malmö City Council, Dec. 2014. <https://malmo.se/download/18.270ce2fa16316b5786c7079/1526295486614/gr%C3%B6nytefaktordec%2B2014.pdf>

covered by trees results in a higher GSF score than that of an area of grass with no tree cover.

However, the city discovered that the policy did not fully encompass the quality of the green cover provided – for instance, using this approach a mown and manicured lawn was deemed to be of a value equal to that of a more natural meadow which supports greater biodiversity. Equally, an extensive green roof with a thin growing substrate for vegetation was scored as being of equal value to an intensive green roof with a thicker substrate which supports increased biodiversity and can help to intercept more rainwater.

To overcome this issue, in a subsequent phase of the Western Harbour development, 'Green Points' were added to the Green Space Factor to promote certain additional qualities. Developers were given a list of 35 features that achieved additional Green Points and were required to choose ten of them. Some of the points aimed to aid biodiversity, such as the inclusion of bat boxes and wild flowers, while others were included to improve the architectural qualities of the development or help with stormwater management. This system of Green Points has been further modified in later developments.

Conclusion

Malmö has responded to the outcomes of its use of the GSF to date and the policy has evolved. It has been used over the course of the redevelopment of the Western Harbour and is now required for developments across the entire city, to secure contributions to the city's liveability and resilience.

Case study: Southampton – the first UK local authority to adopt the Green Space Factor

Introduction

Southampton is the principal city in central southern England and the third-largest city in the South East outside London.¹¹ A key part of Southampton City Council's vision is to create a green and attractive city in which people are proud to live and work.¹² Southampton City Council's commitment to achieving this vision is set out in its Green Space Strategy. This strategy seeks to enhance the city's 'green grid' by promoting strategic links between green infrastructure such as open spaces, green roofs, and areas with high levels of tree coverage.¹³

Use of the GSF

In March 2015, the council adopted the Southampton City Centre Area Action Plan, which aims to maximise opportunities offered by new development to create green infrastructure, including pocket parks and sustainable urban drainage solutions, thereby contributing to the green grid.¹⁴ The plan includes a policy that requires all developments,

11 *Local Development Framework Core Strategy Development Plan Document*. Amended Version incorporating the Core Strategy Partial Review March 2015. Southampton City Council, Mar. 2015. https://www.southampton.gov.uk/policies/amended-core-strategy-inc-cspr-final-13-03-2015_tcm63-371354.pdf

12 *Southampton City Council Strategy 2016-2020*. Southampton City Council. https://www.southampton.gov.uk/images/council%20strategy%202016-20v2_tcm63-395672.pdf

13 *Green Spaces, Great Places: Southampton's Green Space Strategy Summary and Action Plan*. Southampton City Council, 2007. https://www.southampton.gov.uk/policies/green%20space%20strategy%20summary%20and%20action%20plan_tcm63-363566.pdf

14 *Planning Southampton City Centre City Centre Action Plan*. Southampton City Council, Mar. 2015. http://www.southampton.gov.uk/images/ccap-18-march-2015_tcm63-371356.pdf



Green space at
Thornhill Estate,
Southampton

and especially on identified key sites, to assess the potential of the site for appropriate green infrastructure improvements by using the council's Green Space Factor and improving the GSF score for the site. The Southampton City Centre Area Action Plan states that 'suitable qualitative improvements are to be measured using the Council's Green Space Factor'. The GSF is specifically used by Southampton City Council to enable 'an objective assessment of the quality and functionality of [green infrastructure] to produce a score for any site or area in the city centre'.¹⁵ A template spreadsheet and guidance notes are provided which give detailed definitions of different green surface types.¹⁶

Conclusion

Southampton City Council has used the GSF as an enabling tool to create greener developments and meet its ambitions for the future of the city. The GSF is used by the council to form part of a wider discussion between the council and developers about what is required, set within a broader set of green infrastructure policies. No specific score is given for what developers are required to achieve; however, it is made clear that using the GSF can help developers to meet other mandatory requirements.¹⁷

Other GSF case studies

Several other municipalities across Europe and beyond have adopted a version of the GSF, including Helsinki, Seattle, Washington DC, and Singapore.¹⁸ Partners in the PERFECT project include municipalities from seven different EU countries, all aiming to increase investment in green infrastructure. Following discussions at a project meeting focused on planning systems, and a presentation prepared by the Greater London Authority about its application of the Green Space Factor (as the Urban Greening Factor), the project partners have been working to adopt a similar approach. One such example is Bratislava Ves Municipality, which in 2018 influenced the national framework for green infrastructure in Slovakia to enable individual municipalities to take forward such planning tools.¹⁹

15 *Planning Southampton City Centre City Centre Action Plan*. Southampton City Council, Mar. 2015. http://www.southampton.gov.uk/images/ccap-18-march-2015_tcm63-371356.pdf

16 *Southampton City Council Green Space Factor Guidance Notes*. Southampton City Council, 2015. https://www.southampton.gov.uk/policies/green-space-factor-guidance-notes-2015_tcm63-371696.pdf

17 *Ibid.*

18 For further information on these case studies, see *Urban Greening Factor Study*. Green Infrastructure consultancy, for the City of London Corporation, Jul. 2018. <https://www.cityoflondon.gov.uk/services/environment-and-planning/planning/planning-policy/local-plan/Documents/urban-greening-factor-study.pdf>

19 See the PERFECT project's 'A PERFECT result – defining green infrastructure' webpage, at <https://www.interregeurope.eu/perfect/news/news-article/4762/a-perfect-result-defining-green-infrastructure/>

5 Developing an Urban Greening Factor for London



Peter Massini

Kidbrooke Village – Berkeley Homes have worked with London Wildlife Trust to ensure biodiversity net gain

Background – why the GSF was considered

Ever since the publication of the Greater London Plan of 1944, London has had a land use planning policy framework which has been effective at protecting London's major parks, green spaces and areas of nature conservation value, as well as the Green Belt that surrounds the city. This policy framework, refined and amended through successive versions of the London Plan, served the city well until the end of the last century. However, since 2000, with the emerging challenges of climate change and rapid population growth stimulated by London's strong economy, the policy framework has had to be developed further to ensure that London retains its status as one of the world's greenest cities.

Future land use policy aims to protect London's Green Belt and realise other sustainability benefits of more compact urban living, such as efficient public transport systems and reduced energy demand. Consequently, to ensure that the residents of these newer, denser neighbourhoods also benefit from living in a green city, it was necessary to develop policies which ensure that green infrastructure is integral to and embedded in new developments; the various 'green factor' approaches developed in Berlin, Malmö and other European cities seemed to be a necessary and relevant policy approach.

Development of the GSF policy and objectives

The greening of the built environment is recognised as one of the key policy interventions required to increase London's resilience to climate change and to address other concerns, such as the poor air quality. The current London Plan (published in 2016) has a number of policies that encourage the provision of green infrastructure within new developments, including policies on urban greening and green roofs.²⁰

²⁰ Policy 5.10: 'Urban greening' and Policy 5.11: 'Green roofs and development site environs'. Chapter 5: 'London's response to climate change', in *The London Plan: The Spatial Development Strategy for London Consolidated with Alterations since 2011*. Mayor London. Greater London Authority, Mar. 2016. <https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-five-londons-response>



Olympic Park – nature-based solutions are being incorporated into the new development around the park

However, these policies have largely resulted in green infrastructure being included in development proposals, primarily to offset or mitigate impacts on existing green space or the natural environment, or because the most far-sighted developers have wanted to be ahead of the curve. This approach has been reasonably successful to date, and many major housing and regeneration schemes in recent years, such as Kidbrooke Village in the Royal Borough of Greenwich, have included good-quality green infrastructure.²¹

But as the city grows and densifies it will be necessary for the majority of developments to include green infrastructure. The existing London Plan will be replaced by a new London Plan in 2020. This provides the opportunity to revise and amend policy on urban greening and green roofs. Consequently, in the preparation of the new London Plan it was decided that an adapted GSF should be introduced into the policy framework to enable informed discussions between planning authorities and developers about the appropriate level of green infrastructure that should be provided to deliver locally relevant outcomes throughout the city.

A key consideration was that the policy should deliver new green infrastructure that is additional to the green space provided by existing parks and open space network. To avoid potential confusion about the purpose of the policy, it was decided not to use the term Green Space Factor but to describe it as an 'Urban Greening Factor' (UGF).

The London UGF aims to avoid some of the problems encountered early on in Malmö by describing each surface layer in more detail and by differentiating between similar layers that perform differently. For example, a green roof with a substrate depth of 150 mm or more has a higher factor than a green roof with a substrate depth of 80 mm; and flower-rich planting scores higher than an amenity lawn.

The target score is 0.3 for commercial development and 0.4 for residential development. The purpose of the policy is to raise the bar and to challenge developers and their design teams to design green infrastructure so as to meet other policy objectives, such as managing flooding, combating air pollution, increasing biodiversity, and encouraging active travel.

21 See the Kidbrooke Village website, at <https://www.kidbrookeregeneration.info/>

Outcomes and experience to date

The London Plan is the strategic policy framework for London. The vast majority of planning decisions are made by the London boroughs. The boroughs are required to translate London Plan policy into their own Local Plans to provide the basis for local planning decisions.

The new London Plan policy has been designed to allow boroughs to set their own UGF and target scores to ensure they are locally relevant. A Green Infrastructure Focus Map has also been published to assist decision-making about the appropriate and relevant green infrastructure for different parts of the city.²²

Several London boroughs have already incorporated the UGF into their own Local Plans, including Islington, Hackney, and the City of London (see below).²³⁻²⁵ Other boroughs are expected to incorporate and develop their own UGF as they prepare their Local Plans.

City of London

The Greater London Authority is divided into 33 areas with local authority responsibilities. One of these areas is the City of London – known as the financial district, the historic centre of London, or the ‘Square Mile’. There are approximately 8,000 residents in this area but over 400,000 people commute into the City to work every day.²⁶

The City of London is densely built up and is defined by the Greater London Authority as an ‘area of deficiency in access to nature’.²⁷ Using the Urban Greening Factor policy in the draft London Plan as a framework, the City of London Corporation – the governing body of the City – has developed a policy in its draft Local Plan which requires major development proposals to ‘include an Urban Greening Factor (UGF) calculation demonstrating how the development will meet the City’s UGF score of 0.3 as a minimum; and submit an operation and maintenance plan to demonstrate that the green features will remain successful throughout the life of the building’.²⁸

It is intended that the scoring system set by the Greater London Authority will be updated by the City of London to further encourage tree planting and the establishment of high-quality green roofs and green walls – in line with the specific challenges and opportunities facing the local area.²⁹

22 The Greater London Authority’s Green Infrastructure Focus Map is available at <https://maps.london.gov.uk/green-infrastructure/>

23 *Islington Local Plan. Strategic and Development Management Policies*. Islington Council, Nov. 2018. <https://www.islington.gov.uk/~media/sharepoint-lists/public-records/planningandbuildingcontrol/publicity/publicnotices/20182019/20181119localplanstrategicandmpoliciesdpdreg18nov2018reducedsize1.pdf>

24 *Hackney. A Place for Everyone. Proposed Submission Local Plan (Local Plan 2033)*. Hackney Council, Nov. 2018. <https://hackney.gov.uk/article/4275/Local-plan-2033-LP33->

25 *City Plan 2036: Shaping the Future City. City of London Local Plan: Draft for Consultation*. City of London Corporation, Nov. 2018. <https://www.cityoflondon.gov.uk/services/environment-and-planning/planning/planning-policy/local-plan/Documents/draft-city-plan-2036.pdf>

26 See the City of London Corporation’s website, at <https://www.cityoflondon.gov.uk/about-the-city/about-us/Pages/default.aspx>

27 See Fig. 8 in *Improving Londoners’ Access to Nature London Plan (Consolidated with Alterations since 2004). Implementation Report*. Mayor of London. Greater London Authority, Feb. 2008. <https://www.london.gov.uk/sites/default/files/uploads-access-to-nature.pdf>

28 *City Plan 2036: Shaping the Future City. City of London Local Plan: Draft for Consultation*. City of London Corporation, Nov. 2018. <https://www.cityoflondon.gov.uk/services/environment-and-planning/planning/planning-policy/local-plan/Documents/draft-city-plan-2036.pdf>

29 *Urban Greening Factor Study*. Green Infrastructure consultancy, for the City of London Corporation, Jul. 2018. <https://www.cityoflondon.gov.uk/services/environment-and-planning/planning/planning-policy/local-plan/Documents/urban-greening-factor-study.pdf>

6 Conclusion and further resources

Conclusion

The Green Space Factor is a positive example of cities and regions learning from each other to create great places. It has been adopted particularly by cities facing challenges of accommodating growth within a restricted supply of land. The GSF, and variations thereof, have been transferred to towns and cities across Europe and the globe to address variations on a problem that each of them faces – namely how to ensure that new development maximises the multiple benefits of green infrastructure in delivering resilient, healthy and environmentally friendly cities.

Further resources

- The PERFECT project is publishing a series of Factsheets to highlight the evidence available to policy-makers on the multiple benefits of green infrastructure, and is also publishing further Expert Papers on matters such as tools that can be used to put values on green infrastructure, and its benefits for mental and physical health.³⁰
- The Interreg Europe Policy Learning Platform on environment and resource efficiency includes a good practice database featuring projects from the Interreg programme and beyond.³¹ The Policy Learning Platform has also published policy briefings that highlight the positive role of green infrastructure and how it has been incorporated into policies across Europe.³²

30 See the PERFECT project library webpage, at <https://www.interregeurope.eu/perfect/library/>

31 See the Interreg Europe 'Good practices from Interreg projects and beyond' webpage, at <https://www.interregeurope.eu/policylearning/good-practices/>

32 *Protection and Sustainable Management of Heritage in Coastal and Fluvial Regions*. Policy Brief from the Policy Learning Platform on environment and resource efficiency. Interreg Europe, Sept. 2018. https://www.interregeurope.eu/fileadmin/user_upload/2018-09-24_Policy_Brief_Heritage_in_coastal_and_fluvial_regions.pdf; and *Development of Green Infrastructure in EU Regions: Nature-based Solutions Delivering Multiple Benefits*. Interreg Europe, May 2017, https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/2017-05-12_PB_TO6-Green_infrastructure-final-compressed.pdf

PERFECT

a European partnership...

The PERFECT project will demonstrate how the multiple uses of green infrastructure can provide social, economic and environmental benefits; and it will raise awareness of this potential, to influence the policy-making process and to encourage greater investment in green infrastructure.

PERFECT aims to:

- spread awareness of the value of green infrastructure for the jobs and growth agenda among a wider audience;
- identify transferable good practice;
- improve investment and stewardship by engaging managing authorities and increasing the professional capacity of key stakeholders in delivering new projects; and
- help make places more economically, socially and environmentally viable by developing action plans to take advantage of the multiple benefits of strategic investment in green infrastructure.

The PERFECT project will work to identify the multiple benefits of green infrastructure investment through EU Structural Funds Operational Programmes and other policy instruments, in order to help formulate holistic and integrated approaches to the protection and development of the natural heritage.

The PERFECT partners are: Provincial Government of Styria, Department for Environment and Spatial Planning (Austria); Social Ascention of Somogy Development, Communication and Education Nonprofit Ltd (Hungary); Municipality of Ferrara (Italy); City of Amsterdam (Netherlands); Bratislava Karlova Ves Municipality (Slovakia); Regional Development Agency of the Ljubljana Urban Region (Slovenia); Cornwall Council (UK); the Town and Country Planning Association (UK).

