SIGNpost

Tool to assess urban green network quality and to develop landscape-scale policy directions



JONO design

Introduction

The challenges of adapting to the effects of climate change, the aim of improving quality of life, and concerns over the protection and enhancement of biodiversity, have led to policy and regulatory imperatives to integrate the concept of a multi-functional green network in urban policy. However, what constitutes a 'good quality' urban 'green network' has not generally been clearly defined. In addition, existing approaches tend to focus on assessing the quality of individual green spaces rather than the quality of a green network as a whole.

A 'green network' is a matrix of green spaces that may or may not be physically connected within an urban area.

The 'quality' of a network is its ability to deliver functions and benefits that are considered to be important. The quality of a green network will reflect its connectivity and distribution within the urban environment.

SIGNpost (Spatial Indicators for a Green Network) is a tool that provides a framework for measuring, scoring and grading the quality of an urban green network, and using the results to suggest the direction that policy could take in support of network quality. The grade achieved 'signposts' a potential policy direction to improve or maintain the quality of a network. The purpose of the approach is, firstly, to better determine the quality of a green network and, secondly, to translate that improved understanding of quality into more effective policy.

Framework

The **SIGN**post framework consists of four elements.

The first element sets out six principles that are important for understanding the quality of a green network: quantity, proximity, biodiversity, linkage, cooling and flood risk.

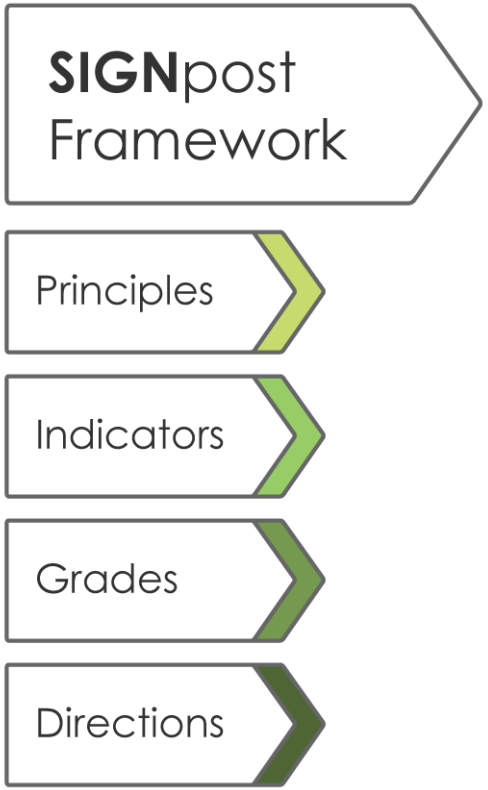
The second element uses the network quality principles as a structure within which appropriate indicators are identified as measures for network quality.

The third element provides a grading system to score the indicator results, thereby facilitating their use in informing policy and monitoring performance.

The fourth element uses the grades to provide an indication of a possible policy response, with the aim of improving or maintaining network quality.

Accordingly, the purpose of the approach is not to give specific answers but, rather, to suggest the direction that policy could take in order to improve the quality of a network. The resulting policy directions generated can then be used to assess existing planning policies found in development plans.

As such, **SIGN**post provides one method for monitoring the effectiveness of policy aims to deliver a good quality green network.



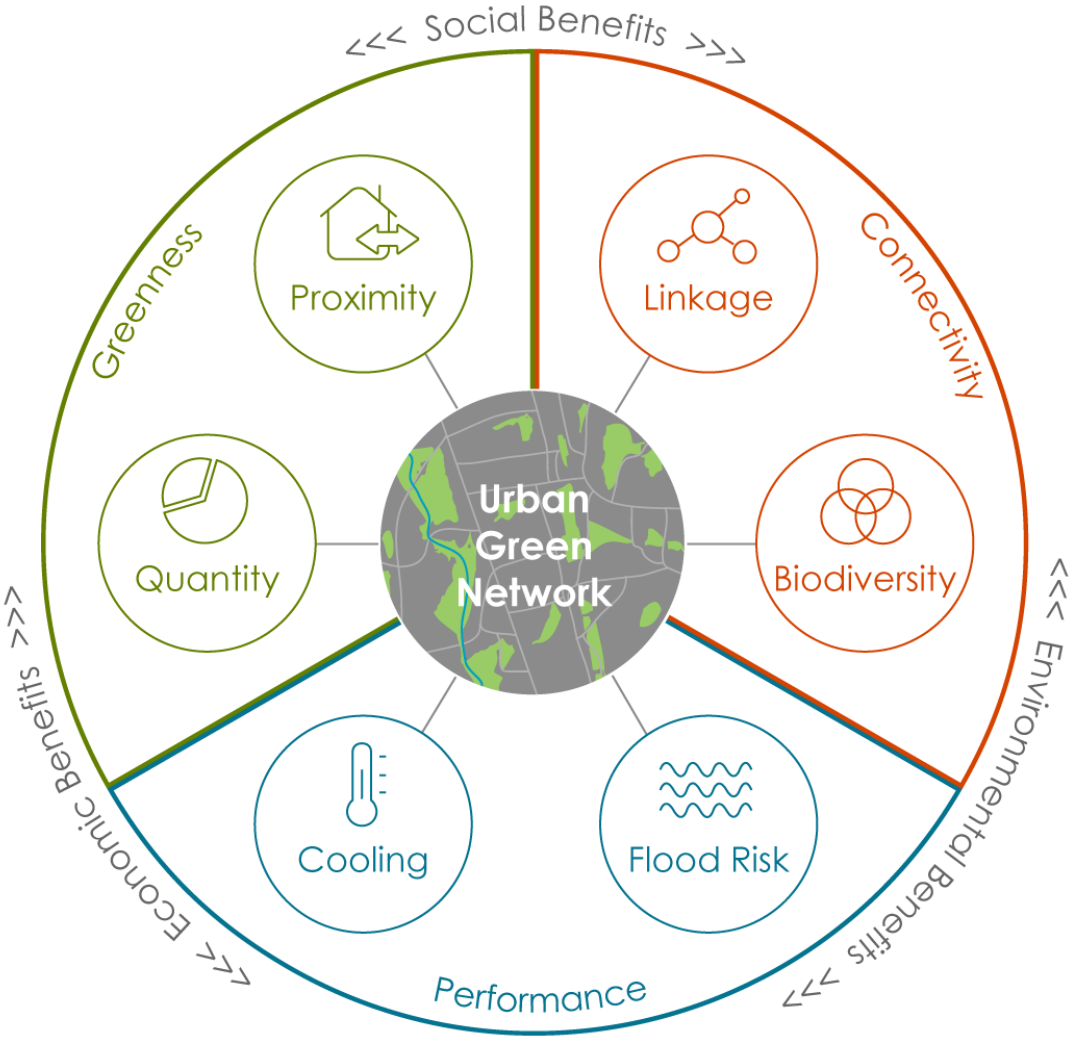
Principles

The multi-functionality of a green network means that it has a number of different purposes, for example, to give people access to green space or to provide an ecological network of habitats.

The network quality principles encompass social, environmental and economic benefit aspects of a green network and form the core elements that should be taken into account when considering quality.

The six network quality principles are: quantity; proximity; linkage; biodiversity; flood risk; and cooling. The six principles fall naturally into three groups: 'greenness', 'connectivity' and 'performance'.

The network quality principles make it easier to understand what is important by operationalising what is meant by good quality. The six principles define the scope and priorities for the next element, namely the indicator-based approach to measuring the quality of a network.



Indicators

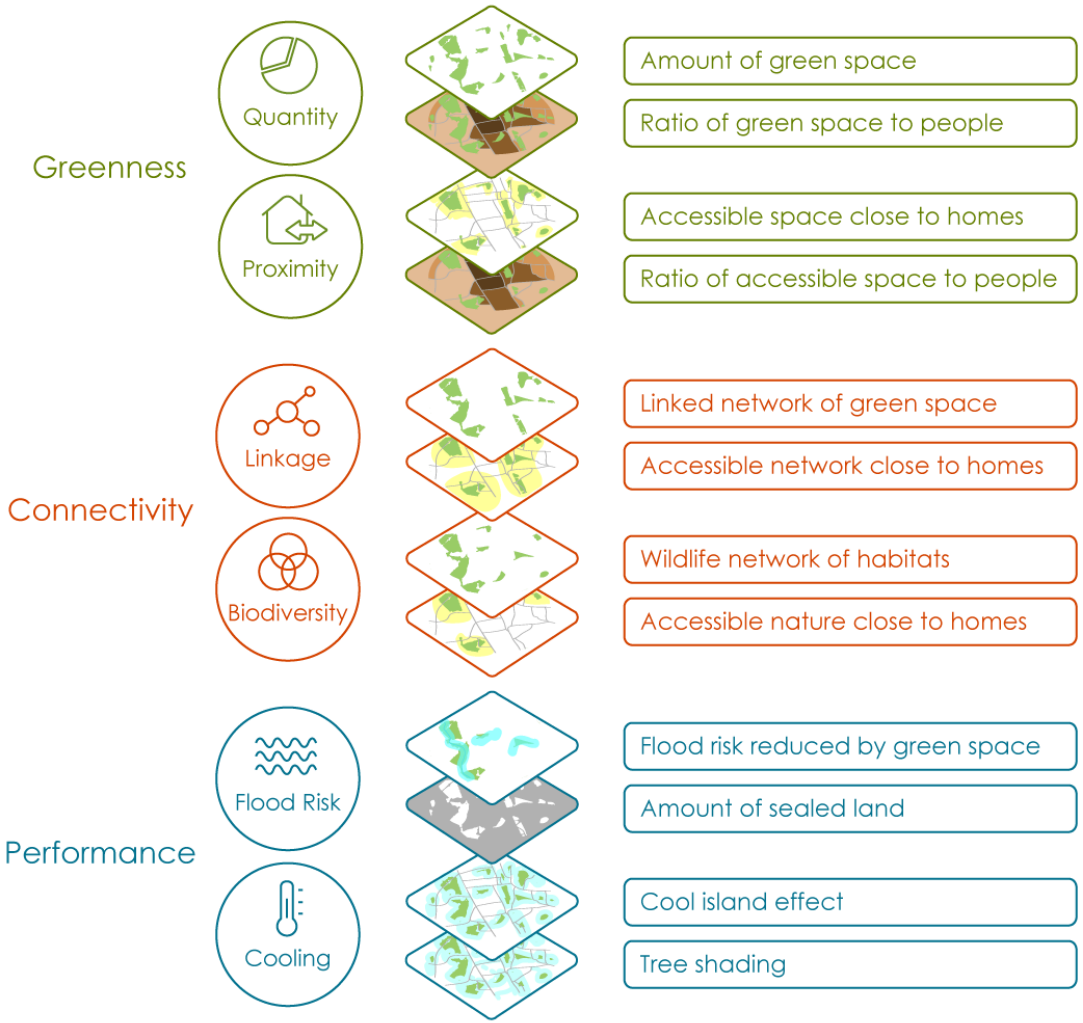
This part of the framework sets the general context for developing appropriate indicators that enable each principle to be assessed.

There are already examples of existing indicators and data sources that are relevant to improving the understanding of network quality. As a result, the themes that the indicators are concerned with in the context of the network quality principles start to emerge.

The scope and complexity of the green network concept suggests that two indicators should be identified for each quality principle, giving 12 indicators in total.

Each indicator should be measurable and ideally mapped and analysed using GIS (Geographic Information System). Mapping the results in a GIS provides an additional output that presents the data spatially, allowing areas to be identified where actions to improve quality could be prioritised.

Recommended metrics for each of the 12 indicators are identified in Annex A.



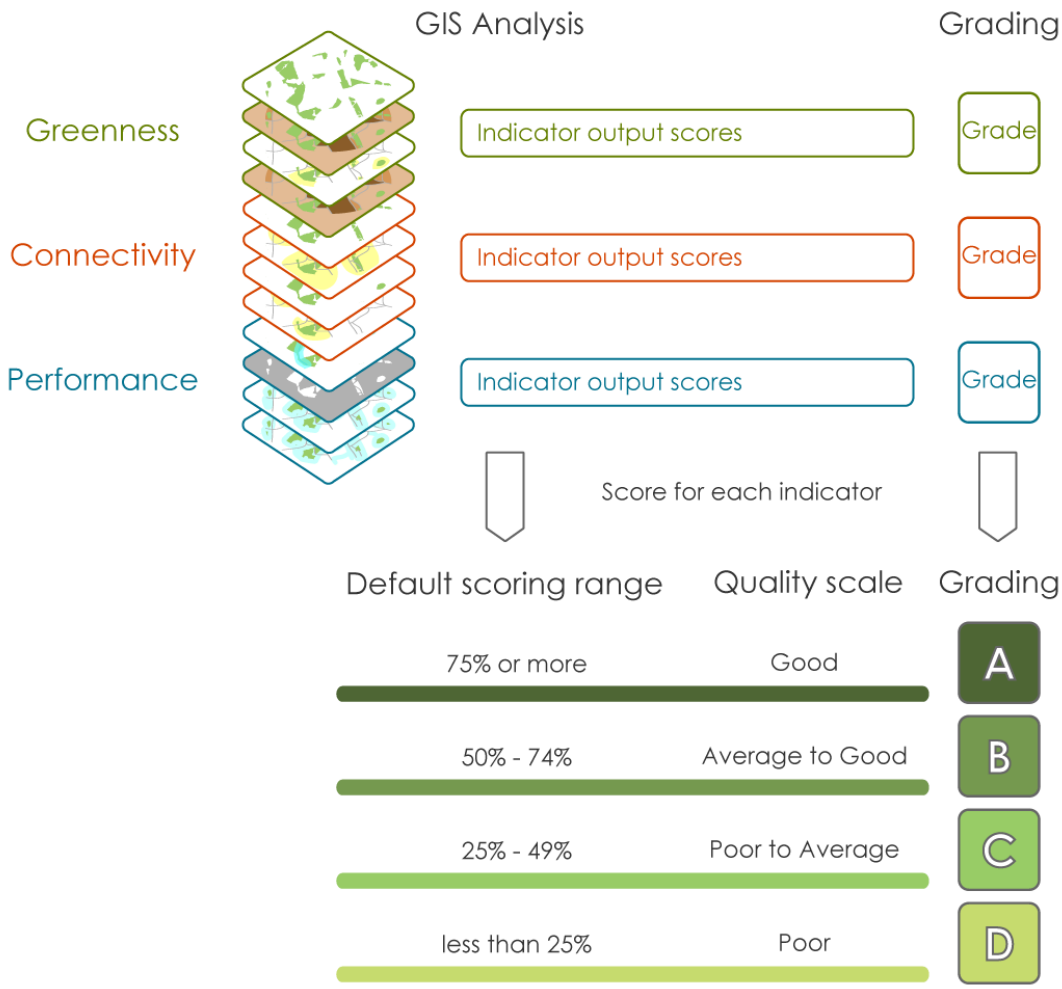
Grades

In this element of the framework, the quantitative output from each of the indicators is translated into a grade. This is done by placing the output, or score, of each indicator within a scoring range that is linked to a grade. The grade is linked to a policy direction in the final stage.

The grading converts the indicator outputs into a form that can be used to compare results, either between the different indicators or between different urban areas.

The grading of each indicator is based on a four-point scale where 'A' is good quality, 'B' is average to good, 'C' is poor to average and 'D' is poor quality.

Each grade corresponds to the numerical score achieved for that indicator. As a default, the scoring range is set at intervals of 25%. However, the scoring range of each indicator can be tailored to reflect the indicator selected. Scoring ranges have been defined for five of the recommended indicators in Annex A.



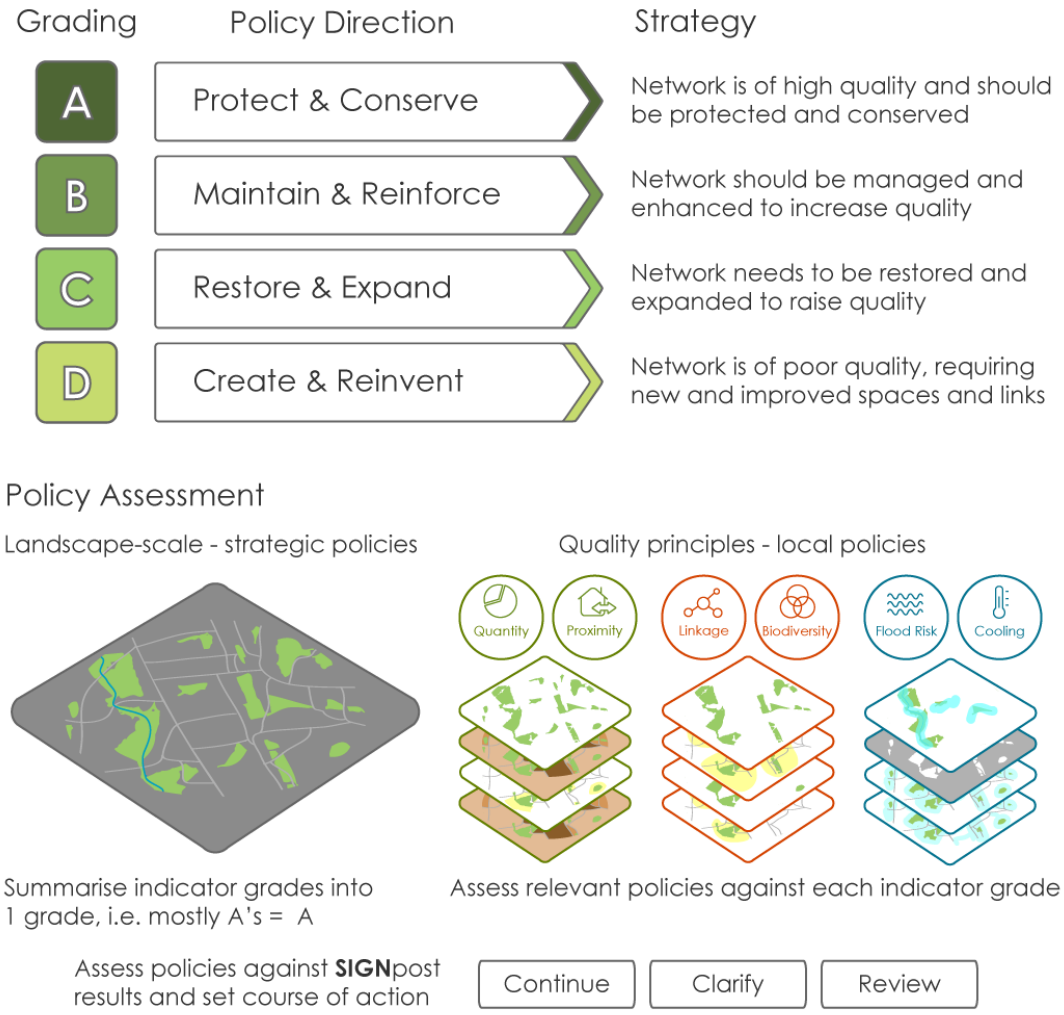
Directions

In the final component, the framework links the grade achieved for each indicator to a suggested policy direction which, if adopted, should maximise the potential benefits and quality of a green network.

The policy directions are consistent with the objectives of the European Landscape Convention (2000), and translate the rather complex concept of a green network into a more practical form for policy makers.

Whilst the policy directions are not designed to be a detailed prescription for policy makers to follow, they 'signpost' a general policy approach that is of direct relevance to improving or maintaining the quality of a green network under consideration.

The next step is to assess existing policies against the suggested policy direction, which could prompt a review of the policy strategy in order to improve the quality of a network.



Results dashboard

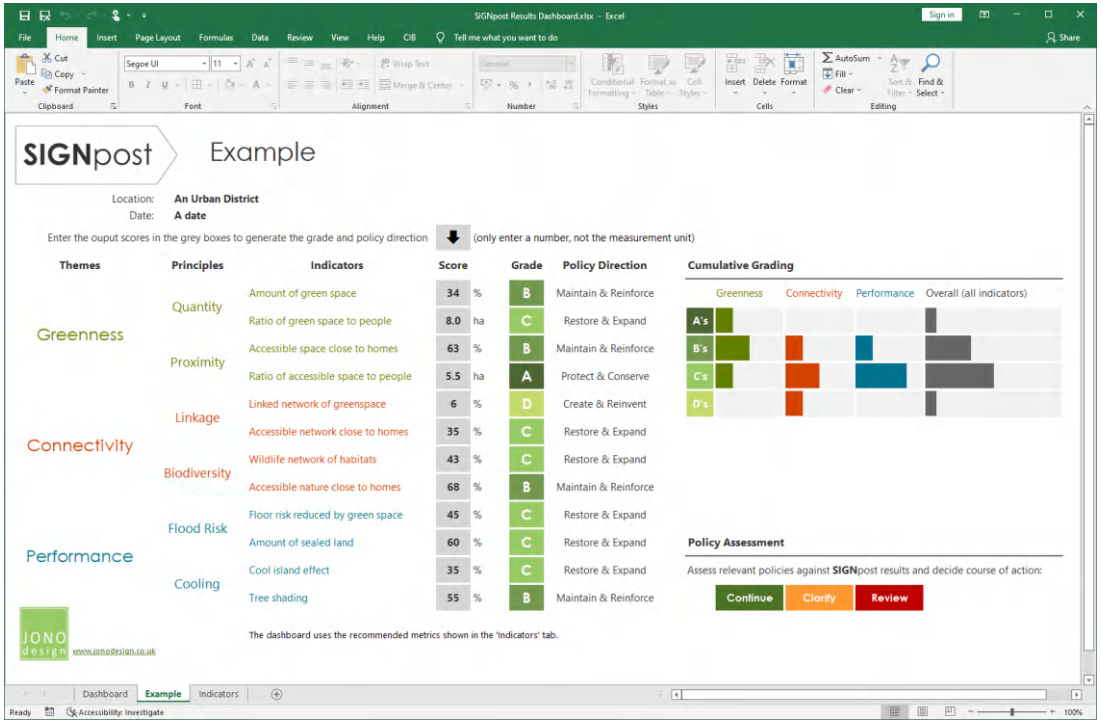
Once the indicator scores have been generated, they can be entered into the **SIGN**post results dashboard – an Excel spreadsheet.

The dashboard automatically converts the score for each indicator into the relevant grade and policy direction. It also summarises the grading results for each group of indicators, and for all 12 indicators overall.

The dashboard is designed to provide results for the recommended indicators that are listed in Annex A.

To use the dashboard, enter the score for each indicator into the relevant grey box below the arrow. Only enter the number, and not the measurement unit, i.e. do not enter % or ha (hectare) notation.

The next step would be to assess existing policies against the results.



About the author

SIGNpost has been written and designed by John O'Neil, who runs JONO Design. It is based on the author's PhD thesis and journal paper:

> O'Neil J. (2013). *Determining the quality of an urban green network*. PhD thesis. Glasgow Caledonian University.
>
> O'Neil J. & Gallagher C. (2014). Determining what is important in terms of the quality of an urban green network: a study of urban planning in England and Scotland. *Planning Practice & Research*, Vol. 29:2, pp. 202-216. DOI: 10.1080/02697459.2014.896154

This guide uses new graphics to illustrate the **SIGN**post method set out in the thesis and journal paper.

Before becoming a graphic designer, the author spent over fifteen years working in the environmental field within local and regional government, and in national government agencies. The accumulated experience and knowledge of urban green space, green infrastructure and the development and implementation of planning policy continue to be valuable in the graphic design projects successfully completed by JONO Design.

JONO Design was established in 2015 and provides a range of graphic design services for creating good quality documents, templates, infographics, branding, and graphics.

JONO Design specialises in flexible design solutions using Microsoft Word and PowerPoint to design publications and templates.

The Microsoft Word documents created by JONO Design are well-structured and formatted to meet accessibility requirements. These Word documents can then be used as the source for creating accessible HTML content and PDF versions for online publication.

For example, this publication was created in Microsoft Word, incorporating graphics designed using Adobe Illustrator. The Word version was then converted into a PDF for publication. The tagging and running order of the PDF were checked to ensure that it meets the PDF/UA (Universal Accessibility) standard, which is complementary to the WCAG 2.0 AA digital standard.



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Annex A

Recommended indicators and scoring ranges (defined scoring ranges are highlighted light green).

Indicator title	Metric	Description	Scoring	(Grade A-D)		
Amount of green space	% area that is green space	all green space	45%+	30-44%	15-29%	-15%
Ratio of green space to people	hectares of green space per 1000 people	all green space	12ha+	8-11.99ha	4-7.99ha	-4ha
Accessible space close to homes	% people within 400m of at least 2 hectares	publicly accessible green space	75%+	50-74%	25-49%	-25%
Ratio of accessible space to people	hectares of public green space per 1000 people	publicly accessible green space	4.5ha+	3-4.49ha	1.5-2.99ha	-1.5ha
Linked network of green space	% area that is green space of at least 1 hectare	all green space	22.5%+	15-22.4%	7.5-14%	-7.5%
Accessible network close to homes	% people within 800 metres of accessible network	publicly accessible green spaces ≥20 hectares, strategic routes & contiguous accessible spaces	75%+	50-74%	25-49%	-25%
Wildlife network of habitats	% area that is wildlife network	all significant wildlife sites & contiguous space	22.5%+	15-22.4%	7.5-14%	-7.5%
Accessible nature close to homes	% people within 1 kilometre of accessible wildlife site	publicly accessible significant wildlife sites	75%+	50-74%	25-49%	-25%
Flood risk reduced by green space	% flood risk zone that is green space of at least 1 hectare	all green space within identified flood risk zone	75%+	50-74%	25-49%	-25%
Amount of sealed land	% area that is sealed land	all buildings & impervious surfaces	-25%	25-49%	50-74%	75%+
Cool island effect	% area within 100 metres of green space of at least 1 hectare	all green space	75%+	50-74%	25-49%	-25%
Tree shading	% area within 100 metres of green space of at least 1 ha & street trees	all green space & street trees outside green spaces	75%+	50-74%	25-49%	-25%

NB: Default scores for 'Amount of sealed land' indicator are in reverse order, reflecting the inverse relationship with green space.