



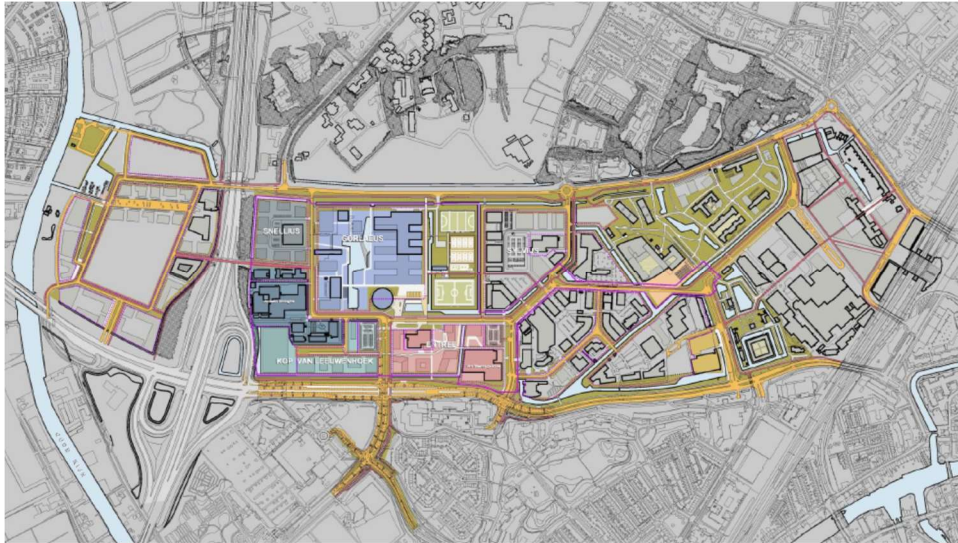
“Biodiversiteit in het Leidse Bio Science Park”

20 maart 2017, 20.15 u.,
Scheltema, Leiden



- Podium voor duurzame (burger) initiatieven
- Presentaties, documentaire films, debat en discussie
 - *Elke '3e maandagavond' van de maand in Scheltema*
- Ontmoetingsplek:
netwerken en inspireren om duurzame dromen te realiseren
- Samenwerking zoeken

Fonds 1818
wozfonds



Programma 20 februari 2017

- 20.15 Inleiding**
- 20.20 Biodiversiteit in het BSP: hoe vol is het glas?**
- 20.35 1e ronde kringgesprekken, thema's:**
 - Agenda, Samenstelling en Tijdsplanning voor de werkgroep**
- 20.55 korte pauze**
- 21.15 2e ronde kringgesprekken**
- 21.35 Plenaire terugkoppeling uit kringgesprekken**



Green+

The Green City Guidelines

Techniques for a healthy liveable city

Michelle de Roo | landscape and urban designer

THE GREEN CITY
www.thegreencity.com

AIPH
www.aiph.org

Ministerie van Economische Zaken,
Landbouw en Innovatie
www.djhoverheid.nl/ministeries/dent

DE GROENE STAD
www.degroenestad.nl

Plant Publicity Holland
www.pph.nl

NIEK ROOZEN bv
landscape architects
www.niekroozen.com

Green+

Structure

The structure of the book is broken down into four scale levels:

- 1 Green cities**
deals with key elements of the planning process and its relationship to green space.
- 2 Green neighbourhoods**
examines those green spaces that form part of the wider neighbourhood and contribute to the social and catchment-scale functioning of the community.
- 3 Green Streets**
introduces the role of street trees and plants and their contribution to the effective functioning of streets in relation to air quality and urban microclimate.
- 4 Green Buildings**
explores how the performance of buildings can be enhanced through the application of green infrastructure elements. This could include positioning within the landscape, green roofs and walls, as well as interior landscaping.

- Economy** + Increase the value of real estate, reduce energy costs, reduce water runoff costs
 - Health** + provide opportunities for relaxation and recreation, improve mental and physical health and the well-being of people
 - Social interactions** + Increase social cohesion resulting in stronger communities with less criminality and anti-social behaviour
 - Ecology** + Increase habitats for ecological communities, biodiversity and opportunities for urban residents to experience nature
 - Water** + decrease the amount of impervious surfaces and provide water retention possibilities on site, thus reducing peak runoff problems
 - Climate & pollution** + filter pollutants and dust from the air and regulate temperature extremes
- These topics return at the bottom of every guideline in order to illustrate how each guideline benefits so many of these topics simultaneously, therefore strengthening the integral value of green. Each one of these functions contains an ecosystem service element.

Green+ cities

1 The planning process



Suzhou, China | The green structure along the street is planned and established long before the surrounding development it is built for.



Madrid 8th Park, Spain | The park, designed by West 8 urban design and landscape architecture B.V. and Miro arquitectos, Madrid is a 100 ha inner city park built on top of the M30 highway. | Photographer: Jensen Musch (copyright city of Madrid)

"Grey" plans based on green
Infrastructure projects should incorporate green early on in the design of new roads, transit facilities and other projects by assuring ample space (both above ground and underground) and budget for trees and other green. Higher density development which brings people closer to mass transit and takes people out of their cars also increases the "greenness" of an area. The pedestrian experience is therefore very important and can be improved by aesthetic and functional green.

"Red" plans based on green
New development of residential and business areas should incorporate urban forests into the design and use green as a building block. An urban forest is a collection of trees in the urban environment and can vary anywhere from a forest, ecological corridor, park or recreational green space to a green roof garden, street, plaza or front garden. A liveable neighbourhood in a compact city contains 15-20% green in the direct living environment.

"Blue" plans based on green
The water structure should be designed within a team of engineers plus urban designers, landscape architects and ecologists so green is incorporated into the design.

Consider the multifunctionality of green
Use green not only for aesthetics but also for its ability to raise the value of houses, improve the health of residents and workers, encourage social interactions, regulate temperatures, retain water, increase biodiversity, reduce energy needs in buildings and remove air pollutants.

Convince decision makers to demand green
A long term cost-benefit analysis should be undertaken to help convince decision-makers that green elements are essential in all urban projects. The development of green spaces should also play a central role in policies related to health, nature conservation and spatial planning.

- 1 The planning process
- 2 Invest together
- 3 Filtering for fresh air
- 4 Green network
- 5 Within walking distance
- 6 The art of nature

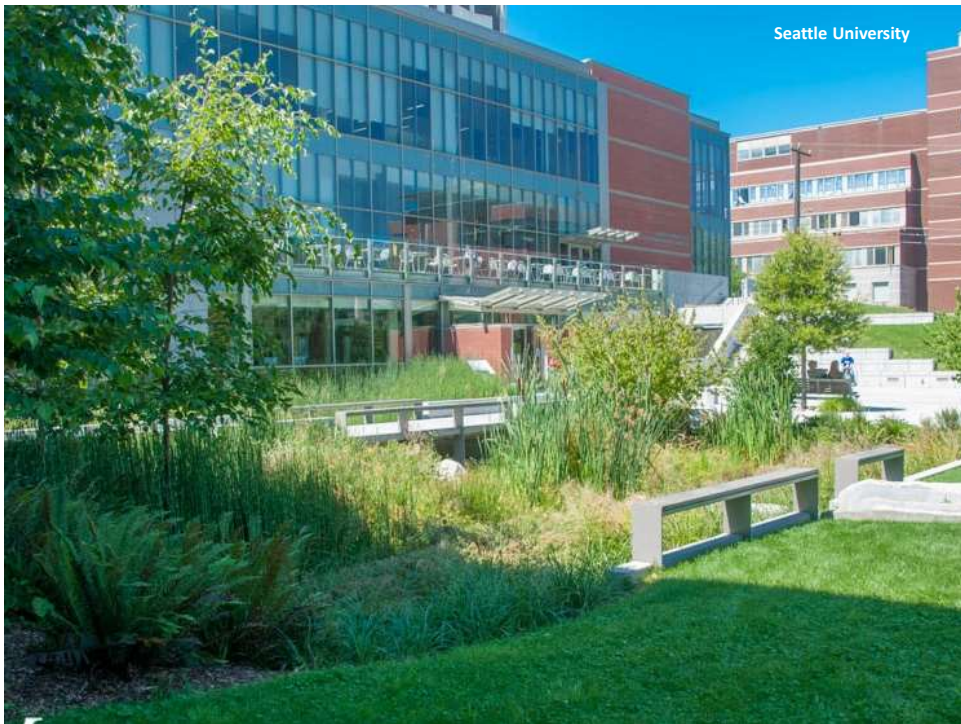
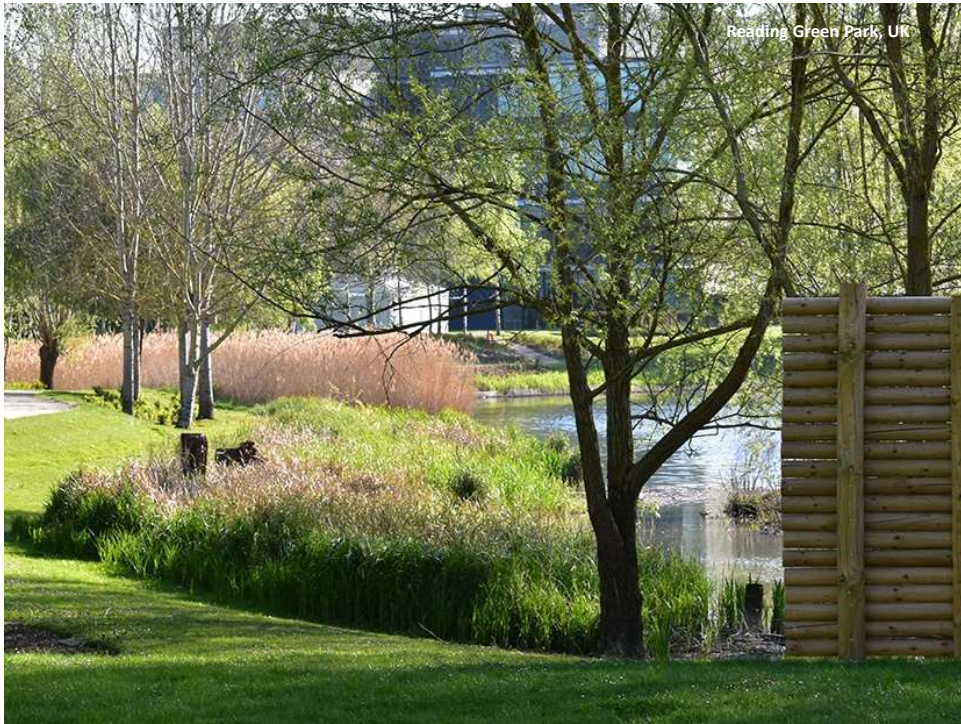
Case study: Shenyang Hunnan District

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Green+ neighbourhoods

17 Biodiversity



(e.g. nectar source for butterflies and bees) can be attractive for people too. A Soestdijk Stadstuinbouw project | Photo: Soestdijk Stadstuinbouw

Plant a wide variety of plants
 Pollen and nectar-rich trees, shrubs and perennials attract bees, butterflies and other insects which are essential for the pollination of plants. The pollinators themselves are food for many birds and small animals. Plant a variety of berry and nut producing trees and shrubs to allow birds and other small animals to sustain themselves in urban areas. Create sheltered areas with dense shrubs as nesting, hiding and foraging places for birds and other small animals.

Develop new / existing biotopes
 Create stepping stones of wildlife habitats in between the paved urban environment to attract various sorts of plants and animals. In areas with water such as shallow ponds, natural processes provide habitat for water plants, amphibians, dragonflies and other aquatic insects, etc. The use of the right set of plant species will support the provision of sufficient food for native animals.

Plant choices are not limited to native species
 Many non-native plant species are well adapted to urban conditions as well as being colorful and attractive for use in parks, gardens etc. Combinations of native and non-native

Example of plants used in The Netherlands that benefit the biodiversity in the city

trees, shrubs, vines & perennials	bees & bumblebees	butterflies	birds	shelter
<i>Crotaegus laevigata</i> x <i>media</i>	x	x	x	
<i>Salix</i> sp.	x	x	x	(x)
<i>Buddleja davidii</i>	x	x		x
<i>Rubus fruticosus</i>	x	x	x	
<i>Hedera</i>	x	x	x	x
<i>Agastache</i>	x	x		
<i>Monarda</i>	x	x		
<i>Sedum spectabile</i> / <i>telephium</i>	x	x		
<i>Aronia</i> sp	x		x	x
<i>Taxus</i>			x	x

Source: Robert Sang (O'Brien - Wageningen UR), Marco Heffau (Applied Plant Research, Wageningen UR), Soestdijk Stadstuinbouw | Source: Biodiversiteit in 100 en plantsoen | Green World Series: Natuurversterken aan Nijmegen aan behoud biodiversiteit

- 7 Microclimate parks
- 8 Resident participation
- 9 Recreation
- 10 Playgrounds and schoolyards
- 11 Views of green
- 12 Private green
- 13 Semi-private green
- 14 Green business parks
- 15 Urban farming
- 16 Water runoff
- 17 Biodiversity

Case study: The High Line, New York City



Leiden Bio Science Park maart 2017









Green+ streets

Green+ streets

22 Use existing trees



Woodbridgeville, VA The client, "a former town, was concerned" of the added value a mature tree would bring as a centerpiece in a nearby plaza. When a forested area of the William van den Bergh Institute was cleared for development, one of the trees was transported from one end of the campus to the other and successfully replanted. Designed by BSA Architects

Transplant trees if possible

Ask a tree specialist if it is possible to transplant trees. This varies per species, root system and availability to adapt to the new situation. Trees should be transplanted with a root ball as big as possible, including fine roots. Growth conditions and maintenance are important in the new location.

Perform a tree survey

Be sure that a tree is worth being saved before taking measures to design and build around it. First take an inventory of the size, location and species of all existing trees on the site. Ask a tree specialist to check the trees that are considered to be worth saving. The life expectancy, condition, stability and quality of the tree should be determined.

Plan ample space around existing trees

Do not place buildings too close to an existing tree. Keep at least 5m between a building and the trunk of the tree (or more if the canopy is already larger than 10m in diameter). This allows the canopy and roots to develop to maturity. Do not cut large structural roots near the trunk to avoid instability of the tree.

Avoid underground conflicts

When renovating underground situations such as cables and pipes, do not use heavy digging equipment around existing trees. Dig by hand near the roots to avoid damage.

Protect trees during construction

Building specifications should clearly state what the protocol is around existing trees and green. Place a fence around a tree at least as big as the canopy in order to keep growing conditions optimal and protect the roots and canopy from machinery. Be sure that the area around the tree does not become storage for building supplies and equipment or a dumping ground for building waste and oil. Inspect the ground water tables in case of (temporary) level changes or pollution that could damage the trees. Include a penalty clause in the contract if trees are damaged.

Guarantee growing conditions after construction

After all construction is completed (including the new surrounding landscaping), trees and plants should be checked for damage and soil conditions should be monitored for quality. Maintenance should begin immediately thereafter.



3

- 18 Green plazas
 - 19 Air circulation & ventilation
 - 20 Street layout
 - 21 Right tree, right place
 - 22 Use existing trees
 - 23 Big healthy trees
 - 24 Growing conditions
 - 25 Quality maintenance
- Case study: London 2012 Olympics



66 Experts: Erik tenenck, Driest | © Miroslav Konecny/Corbis, Jelle Binnema (Applied Plant Research - Wageningen UR), Arla van Ierselinge (Ogilvy & Mather Landscapschoneers)
Source: Green Source, De Bontecplanter

Seattle Urban Forestry



Table 7. Citywide Management Unit (MU) Data*

Statistic	Citywide	
	Current	30-year Goal
Acres in MU	54,324	
MU as % of city land base	100%	
Canopy coverage	18%	30%
Number of trees	1,377,500	2,026,600
Plantings needed		649,100
One-time cost of plantings		\$114,200,000
Maintenance Costs (yr)	\$14,054,300	\$21,116,300
Benefits (yr)		
Stormwater Mitigation Value (yr)	\$20,643,000	\$30,215,000
Air Cleaning Value (yr)	\$4,894,000	\$7,047,000
Carbon Sequestration (Tons CO₂)	52,400	77,066
Carbon Sequestration (Value \$)	\$1,584,000	\$2,331,000
Other Benefits (Energy, Aesthetics, & etc)	\$17,237,300	\$26,342,300
Net Benefit (All Benefits - All Costs) (yr)	\$30,304,000	\$44,585,000

*All values are based on estimates and currently accepted models (McPhearson et al. 2002).





voor grote straten:
(bijen + nat/droog + luchtkwaliteit)

- Acer pseudoplatanus 'Leopoldii'
- Ulmus 'Lobel'
- Tilia tomentosa 'Doornik'

- Quercus rubra
- Gleditsia triacanthos 'Shademaster'
- Celtis australis

voor kleine straten:
(bijen + luchtkwaliteit)

- Acer rubrum 'Brandywine'
- Prunus yedoensis 'Akebono'
- Malus tschonoskii

Green+ cities

28 Green roofs

Benefits of green roofs

- Life of the roof is up to 20 years longer
- Insulates the building against cold and warm
- Gives a "green" image
- Absorbs noise and vibrations
- Makes solar panels more efficient
- Eases the peak flow in stormwater sewers; lessens the urban heat island effect; produces oxygen; absorbs carbon dioxide
- Captures particulate matter, absorbs gaseous pollutants
- Improves the living and working environment

Criteria for building a green roof

- Depth of soil:**
- 7-10 cm for sedum, moss
 - 25 cm for shrubs
 - 80 cm for trees (0,75m³ per m² canopy)
- Weight:**
- 30-150 kg for 2-15 cm soil
 - 130-300 kg for 15-20 cm soil
 - 250-1000 kg for 15-80 cm soil
- Maintenance:**
- A conventional roof requires inspection 1x per 5 years
 - An extensive green roof requires inspection 1x per year and weeding (no irrigation required)
 - An intensive green roof requires inspection 8x per year (weeding, pruning and fertilizing) and always requires irrigation in dry periods.

List of trees successfully used on roof gardens in The Netherlands:

- | | |
|-----------------------|-----------------------------|
| Nothofagus antarctica | Pyrus salicifolia 'Pendula' |
| Amelanchier lamarckii | Pinus nigra 'Nigra' |
| Taxus baccata | Betula utilis 'Doorenbos' |
| Cornus mas | |

Create green roofs on new and existing buildings and fulfil the need for green where space is limited in the urban environment.

...The price of a garden is the same on the ground as on a roof: the land is already paid for! The extra costs of the roof construction / preparation, special soil mixture preparation and transportation of the materials to the roof make up the difference... *Wiek Boezen, landscape architect*

In new & existing development:

Check local building codes and permits and have a structural engineer check the plans to be sure the roof is strong enough to hold the weight. It is also wise to compartmentalize the roof so it is easier to find the sources of possible leaks and prevent damage to neighboring roofs.

In existing development:

The existing roof must be in good condition, strong enough, insulated and waterproof. Check if the insulating layer is under the waterproofing layer or over it and design accordingly. A layer of root barrier is also needed.



This roof garden uses the Zorgeeloo Green technique by Heijmans Sport en Groen | Photo: Heijmans Sport en Groen

- Economy
- Health
- Ecology
- Water
- Climate & pollution

Green+ cities

4

- 26 Green oriented to buildings
- 27 Buildings blend into landscape
- 28 Green roofs
- 29 Green walls
- 30 Green indoors

Case study: Vancouver Convention Centre

Seattle Green Factor

SEATTLE / green factor

betere kwaliteit van groen in stedelijke gebieden

The Seattle Green Factor is a menu of landscaping strategies that is required for all new development in neighborhood business districts with more than four dwelling units, more than 4,000 square feet of commercial uses, or more than 20 new parking spaces. It is intended to increase the amount and quality of urban landscaping in dense urban areas while allowing increased flexibility for developers and designers to efficiently use their properties.

Elements and Descriptions

City of Seattle Ordinance 122311 requires the equivalent of 30% of a parcel in the commercial zones to be vegetated by using the Seattle Green Factor. The Green Factor encourages maximizing the "vegetation potential" of the rights-of-way through planting of layers of vegetation and larger trees in areas visible to the public. There are additional bonuses for rainwater harvesting and/or low water use plantings. Use of larger trees, tree preservation, green roofs, green walls and water features are encouraged by this requirement.

Green Factor Composite Model

This composite model graphically describes the elements of Green Factor and how they might relate spatially to a building and landscape in a conceptual project. Note: This model is designed to show as many Green Factor credits as possible, its actual score would greatly exceed required minimums.



- A- Landscaped Area <24" Soil Depth
- B- Landscaped Area >24" Soil Depth
- C- Rain Garden
- D- Groundcovers <2' Height
- E- Plants >2' Height
- F- Small Tree
- G- Medium Tree
- H- Large Tree
- I- Large Existing Tree
- J- Green Roof 2-4" Growth Medium
- K- Green Roof >4" Growth Medium
- L- Green Wall
- M- Water Feature
- N- Permeable Paving 6-24" Subgrade
- O- Permeable Paving >24" Subgrade
- P- Structural Soil Systems
- Q- Drought Tolerant/Natives
- R- Rainwater Cistern
- S- Public Visibility
- T- Food Cultivation

SEE: www.seattle.gov/dpd/greenfactor/

2/1/2007

30% kavel groen

groen op alle niveaus

groen zichtbaar voor publiek

Seattle Green Factor

SEATTLE green factor			
Final Version Label	enter sq ft of parcel	You roof at least 0.300	SCORE
Parcel size (ENTER THIS VALUE FIRST)	1		-
Types of Area**	Square Feet	Factor	Total
A Vegetation planted with a soil depth of less than 24"			
1. Lawn or grass pavers or ground covers	<input type="text" value="0"/>	0.2	-
2. Plants and shrubs 3' and higher at maturity	<input type="text" value="0"/>	0.3	-
B Vegetation planted with a soil depth of more than 24"			
1. Lawn, grass pavers or other plants less than 3' tall at maturity	<input type="text" value="0"/>	0.7	-
2. Shrubs taller than 3' at maturity - calculated at 18 sq ft per plant (typically planted no closer than 18" on center)	<input type="text" value="0"/>	0.3	-
3. Tree canopy for "small trees" in SDO's Street Tree Planting Schedule or equivalent canopy spread of 15' - calculated at 50 sq ft per tree	<input type="text" value="0"/>	0.3	-
4. Tree canopy for "medium trees" in Street Tree Planting Schedule or equivalent canopy spread of 30' - calculated at 100 sq ft per tree	<input type="text" value="0"/>	0.3	-
5. Tree canopy for "medium/large trees" in Street Tree Planting Schedule or equivalent canopy spread of 25' - calculated at 100 sq ft per tree	<input type="text" value="0"/>	0.4	-
6. Tree canopy for "large trees" in Street Tree Planting Schedule or equivalent canopy spread of 30' - calculated at 200 sq ft per tree	<input type="text" value="0"/>	0.4	-
7. Tree canopy for preservation of "exceptional trees" or trees with trunk diameter exceeding 24" at four and one half feet above the ground calculated at 250 sq ft per tree	<input type="text" value="0"/>	0.5	-
8. Permeable paving that drains only itself - it must be at grade - calculated per square foot	<input type="text" value="0"/>	0.6	-
C Green roofs - 4" minimum soil depth at time of planting	<input type="text" value="0"/>	0.7	-
D Vegetated walls	<input type="text" value="0"/>	0.7	-
E Water features (fountains) or rain gardens (where allowed by SPU)	<input type="text" value="0"/>	0.7	-
Bonuses			
F Landscaping using drought tolerant plants or where at least 50% of annual irrigation needs are met from non-potable sources	<input type="text" value="0"/>	0.1	-
G Landscaping visible to passers-by from adjacent public right of way or public open spaces	<input type="text" value="0"/>	0.1	-

punten systeem voor nieuwe ontwikkelingsplannen in de stad

m² groen
boom maat: kroonprojectie
waterdoorlatend verharding
groene daken
groene muren
water elementen / rain gardens

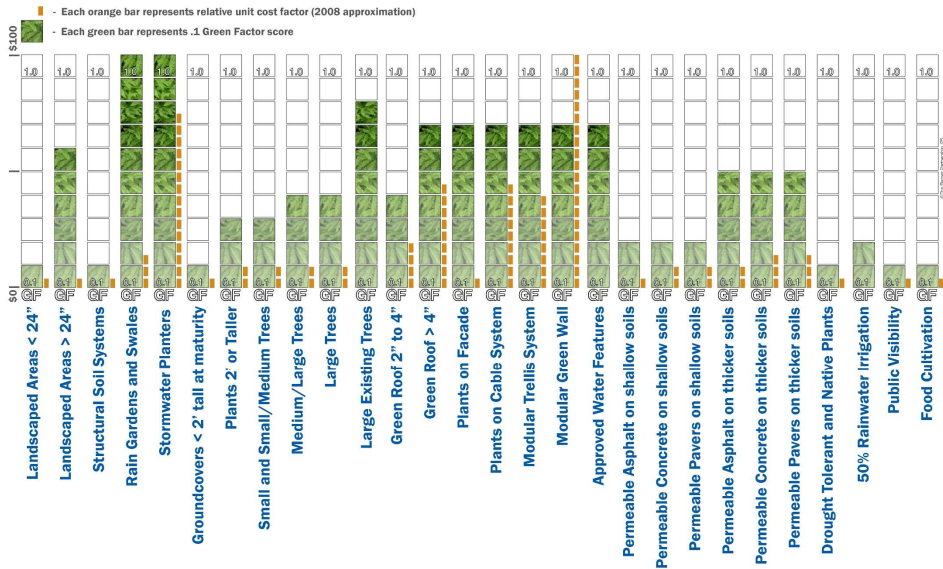
bonus punten:

planten die tegen droogte kunnen
zichtbare groen vanaf openbare gebieden

Seattle Green Factor

Comparative Points and Costs

The Berger Partnership PS
Landscape Architecture 15

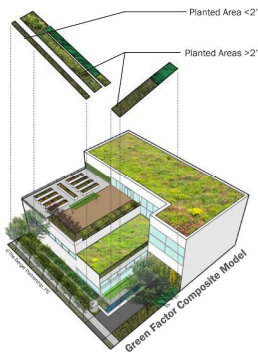


Seattle Green Factor

Element: Planted Areas

The Berger Partnership PS
Landscape Architecture 6

Increasing size and quality of planted areas is a main focus of Green Factor. Using a layered approach to planting enhances the functional benefits of these areas. Benefits include providing stormwater retention or infiltration, creating habitat and reducing heat island effect. Planted areas also create aesthetic interest and can make temperatures of surrounding areas more comfortable through evapotranspiration.



This category includes low planted groundcovers, turf and vegetated paving such as Grasspave. Cheap and easy to use, groundcovers can be combined with overlying plant materials described in Green Factor categories B2 through B3 to contribute to a higher score.

Many groundcovers are tough and drought tolerant, making them well suited for use in right-of-way planting buffers. Seattle Master Use Permits require these plantings to be 50% drought tolerant.

Larger shrubs, grasses and perennials are an important component of any landscape. Their increased functional benefits over groundcovers are reflected in the larger score awarded by Green Factor. Larger plants provide all the same functional benefits of groundcovers, but on a larger scale. Their growth requirements are reflective of their increased function, and they require adequate space and regular maintenance to meet their full potential.

A wide variety of plants are available to meet the requirements of any site, with Pacific Northwest natives being well suited to most applications.

B1

Element - Groundcovers < 2'

Functional Benefits
Evapotranspiration
Habitat creation
Vegetation decreases stormwater runoff

Environmental Considerations
Possible irrigation
Possible imported soils
Planter materials

Factor - 0.1

0.1 GF

B2

Element - Plants > 2'

Functional Benefits
Increased evapotranspiration
Habitat creation
Vegetation decreases stormwater runoff

Environmental Considerations
Possible irrigation
Possible imported soils
Planter materials

Factor - 0.3

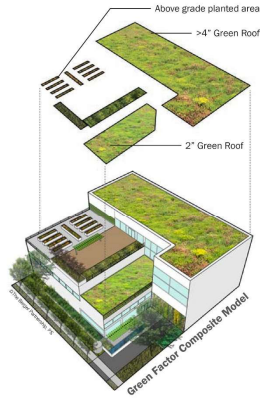
0.3 GF

Seattle Green Factor

Element: Green Roofs

The Berger Partnership PS
LEED Green Architecture 8

Green Roofs offer a dramatic functional improvement over conventional roofs. They provide habitat for insects and birds, improve stormwater quality while reducing runoff quantity, and they reduce the heat island effect. Their use in building design can count toward LEED® certification, reduce heating and cooling costs, and almost double the lifespan of the roof. They are becoming more common and can be useful in educating the public about the benefits of green building practices.



2" to 4" of growth medium

Thin profile green roofs have the advantage of reduced structural load on a building, while offering many of the benefits of a thicker profile roof. Even thin profile roofs can capture and retain 60% of the precipitation that falls on them. Green Factor defines green roofs as any planting which is on top of a structure at least one floor above the level of the at grade entrance. Green roofs with less than a 2" soil profile will be categorized as landscaping areas with less than 24" of soil.

- Grass/Log/Sand
- 2" Drain Mat
- 2" Growth Medium
- Filter Fabric
- Drainage Layer
- Waterproofing Layer
- Roof

C1

Element - 2-4" Green Roof

Functional Benefits

- Reduction of runoff
- Reduction of heat island
- Habitat creation
- Improved insulation

Environmental Considerations

- Petroleum products
- Requires irrigation

Note - Green Roof can extend roof lifespan to 50-100 Years

Factor - 0.4



Over 4" of growth medium

Green roofs with a thicker soil profile can support a wider range of plants than a roof with a 2" profile. The increased plant diversity can create a wider range of possible habitats for native insects and birds. Heating and cooling benefits are increased due to increased insulation, and the stormwater are improved. While a wide variety of roof systems are available, proper design, installation and maintenance are crucial to a successful project.

- Grass/Log/Sand
- 2" Drain Mat
- 2" Growth Medium
- Filter Fabric
- Drainage Layer
- Waterproofing Layer
- Roof

C2

Element - >4" Green Roof

Functional Benefits

- Further runoff reduction
- Reduction of heat island
- More diverse habitat
- Improved insulation

Environmental Considerations

- Petroleum products
- Requires irrigation

Note - Green Roof can extend roof lifespan to 50-100 Years

Factor - 0.7



Seattle Green Factor

Element: Green Walls

The Berger Partnership PS
LEED Green Architecture 9

Green walls have historically been used for ornamental rather than functional purposes, but if designed properly they can benefit the natural environment, building performance and aesthetic qualities of a space. While green walls are currently not a common landscape element, their range of costs and ability to raise a Green Factor score without reducing a building's footprint means they may be selected for many projects in the future.



Vines growing on or overhanging a building facade qualify as a green wall for the purposes of Green Factor. A well established vine can produce many of the same benefits as a more expensive engineered system, including evapotranspiration, stormwater slowing and aesthetic improvement. However, providing for the needs of the plant does require some important design considerations. Most vines require some additional support to climb a building facade. Any green wall system designed to receive points from Green Factor should be calculated for area of coverage after 5 years growth with a maximum height of 30'

D

Element - Facade Plants

Functional Benefits

- Evapotranspirative cooling
- Vegetation slows stormwater events
- Air cleansing
- Habitat creation
- Reduced heat island effect

Environmental Considerations

- Requires adequate planting area
- Some plants may be difficult to remove

Factor - 0.7



Cable systems can provide support for climbing plants, and allow for a wider range of design flexibility. Cable systems can be aesthetically striking because the component parts are usually of high quality, and are adaptable to a variety of design styles. Budget should be a consideration in the design of a commercial system due to possible high costs. Custom built systems are an option which can be much lower in cost and provide even more flexibility in design, but may not be able to work in larger scale applications.

Plants which are able to climb a facade without support should not be specified for use with a cable system. Plants which use twining and tendrils for support are appropriate. Scrambling plants can be used if the cable systems are designed properly.

D

Element - Plants on Cable System

Functional Benefits

- Improved climbing plant growth
- Evapotranspirative cooling
- Vegetation slows stormwater events
- Air cleansing
- Habitat creation
- Reduced heat island effect

Environmental Considerations

- Requires adequate planting area
- Cable materials

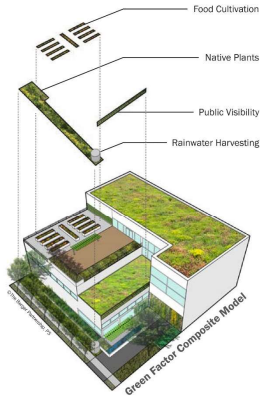
Factor - 0.7



Seattle Green Factor

Element: Bonuses

Green Factor bonuses are options to add functionality to other elements of the landscape. In some cases, such as native plants or public visibility, they are very easy to receive credit for and can be applied to large areas of a project. Other bonuses, such as the harvested rainwater irrigation credit, may be more difficult to achieve, or (as in the case of areas of food cultivation), more appropriate to some projects than others.



Drought Tolerant/Natives
Native plants are both beautiful and regionally adapted. They are often low in maintenance and create habitat. Drought tolerant plants must be separated from plants requiring irrigation to receive credit. A list of drought tolerant plants is available from DPD, otherwise two references are required to show drought tolerance. All right-of-way plantings must meet SDOF requirements to be applicable to Green Factor.

H1 1.0

Element - Plants

Functional Benefits
Adapted irrigation requirements
Provides habitat
Reduce irrigation and fertilizer use

Environmental Considerations

Factor - 0.1



50% Rainwater Irrigation
Rainwater irrigation reduces the amount of potable water used for landscape irrigation. Rainwater harvesting can be achieved through the use of cisterns, rainwater barrels or other means of storage. These elements can be designed as aesthetic and educational pieces on a site. Any landscaped area which has >50% of its irrigation supplied from harvested rainwater can receive this bonus.

H2 1.0

Element - Cisterns

Functional Benefits
Reduce potable water use
Reduce runoff volume

Environmental Considerations
Often plastic or metal

Factor - 0.2



Public Visibility
One of the goals of Green Factor is to encourage the planting of layers of vegetation near publicly accessible spaces. This bonus is available for most landscapes at grade as well as any spaces visible from public areas.

H3 1.0

Element - Visibility

Functional Benefits
Aesthetics

Environmental Considerations

Factor - 0.1



Food Cultivation
Food cultivation is another new addition to Green Factor. Growing food at home has multiple benefits including production of healthy food, reduction of reliance on fossil fuels for transport and as a recreational pastime. It also creates habitat for urban creatures such as insects, birds and pollinating bees. Multi-family projects are often well suited to including food cultivation areas.

H4 1.0

Element - Food Cultivation

Functional Benefits
Creates food
Helps reduce miles food needs to be transported

Environmental Considerations
Must be maintained yearly
Possible fertilizer input

Factor - 0.1





Programmering 2017



In voorbereiding (onder voorbehoud):

24-4 Leiden gaat van het Gas los

22-5 Bijenlandschap in Leiden en ommelanden

19-6 *Jouw Groene Initiatief in het Ideecafé ?*

28-8 Groen Dichterbij Workshop: 'betrek de buurt'

18-9 ...

Actuele thema's Duurzaamheidsagenda ...



Extra ondersteuning gezocht:

- **Nieuwsbrief- en Web-redacteur**
- **Bestuur Stichting ideewinkel**
- **Programmamakers Ideecafé**



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Start

Programmamakers Ideecafé

Samen met de projectleider en andere programmamakers plan je de Groene IdeeCafé's een paar maanden vooruit. De avonden worden verdeeld in deze werkgroep. Voor de avonden die jij organiseert zoek en benader je sprekers. Je stelt, in overleg met de sprekers, een interessant programma voor de avond op. Je maakt een aantrekkelijke uitnodiging voor de nieuwsbrief. Je zorgt dat de benodigde materialen en apparatuur er zijn en leidt de avond in goede banen.