



Indian Green Building Council
Greening India since 2001

IGBC Green Landscape

IGBC Green Landscape Rating System

Pilot Version

Abridged Reference Guide

March 2013



Copyright

Copyright © 2008 by the Indian Green Building Council. All rights reserved.

The Indian Green Building Council (IGBC) authorises you to view the IGBC Green Landscape Rating System Pilot Version Abridged Reference Guide for your individual use. You agree not to sell or modify the IGBC Green Landscape Rating System Abridged Reference Guide or to reproduce, display or distribute IGBC Green Landscape Rating System Abridged Reference Guide in any way for any public or commercial purpose, including display on a website or in a networked environment. Unauthorised use of the IGBC Green Landscape Rating System Abridged Reference Guide violates copyright, trademark and other laws and is prohibited.

Note that the National and local codes, norms, etc., used in the IGBC Green Landscape Rating System Abridged Reference Guide are in the public domain. All other content in the IGBC Green Landscape Rating System Abridged Reference Guide are owned by the Indian Green Building Council and are protected by copyright.

Disclaimer

None of the parties involved in developing the IGBC Green Landscape Pilot Rating System, including the Indian Green Building Council assume any liability or responsibility, to the user or any third parties for any injuries, losses or damages arising out of such use.

Indian Green Building Council

C/o Confederation of Indian Industry

CII – Sohrabji Godrej Green Business Centre

Survey No. 64, Kothaguda Post

Near Kothaguda Cross Roads, Ranga Reddy District

Hyderabad – 500 084

India

Acknowledgements

The IGBC Green Landscape Pilot version has been made possible through the efforts of many dedicated volunteers, staff members and others in the IGBC community. The Pilot Version was developed by the IGBC Green Landscape Core Committee and many other members. IGBC places on record its sincere thanks to the participating companies and individuals for their invaluable inputs.

IGBC would like to thank the following Core Committee members for their participation and contribution in developing the rating programme:

- ❖ Dr Prem C Jain, Chairman, Indian Green Building Council
- ❖ Mr ParasuRaman R, Founding Chair, Indian Green Building Council
- ❖ Mr Anil Kumar V Epur, Chairman - IGBC Green Landscapes
- ❖ Dr Chandrasekhar Hariharan, Vice – Chairman IGBC Green Landscapes & Executive Chairman, BCIL Zed Habitats
- ❖ Dr C N Raghavendran, Chairman, IGBC - Chennai Chapter & Partner, CRN Architects & Engineers, Chennai
- ❖ Mr Syed Mohamed Beary, Chairman, IGBC - Bangalore Chapter, Chairman & Managing Director, Bearys Group
- ❖ Mr N Chandramohan Reddy, Additional Commissioner (Urban Biodiversity), Greater Hyderabad Municipal Corporation, Government of Andhra Pradesh
- ❖ Mr Rohith Marol, President, Indian Society of Landscape Architects
- ❖ Ar Chitra Vishwanath, Principal Architect & Managing Director, Biome Environmental Solutions.
- ❖ Ms Farida Tampal, State Director, Andhra Pradesh State Office &Coordinator, Education Programme Coordination Group (EPCG), WWF-India
- ❖ Dr G B K Rao, Chairman, Pragati Resorts
- ❖ Mr Kamal Meattle, CEO, Paharpur Business Centre
- ❖ Dr M B Krishna, Ecologist & Ornithologist, Bangalore
- ❖ Ms Mala Singh, CEO, PEC Solutions
- ❖ Mr N Kishore, Architect, Bangalore
- ❖ Mr Pradeep Barpande, Principal, Ecogreen Landscapes Pvt. Ltd.
- ❖ Ar Prashanth Bhatt, Landscape Architect, The Landscape Company

- ❖ Mr Rajan Venkateswaran, Head - Center for Excellence and Futuristic Development B&F IC, Larsen & Toubro Ltd
- ❖ Mr Ram Nivas Rathor, AGM-Horticulture, Jindal Steel & Power Ltd
- ❖ Mr Robert Fernandes, Associated VP, K Raheja Corp
- ❖ Ar Savita Punde, Landscape Architect, Design Cell
- ❖ Ar Sekar James, Landscape Architect, Master Plan Architects
- ❖ Dr S K Basu, Senior Vice-President, Agri-Horticulture Society of India
- ❖ Ar V V L Narasimham, Principal Consultant, Narsimham Associates
- ❖ Ar Varna Shashidhar, Landscape Architect, Bangalore
- ❖ Ar Varsha Gawandi, Landscape Architect, Ravi Varsha Associates
- ❖ Mr Vishwanath, Advisor, Arghyam



Indian Green Building Council
Greening India since 2001

Contents

Foreword from the Indian Green Building Council (IGBC)	1
Introduction	2
Benefits of Green Landscapes	2
National Priorities Addressed in the Rating System	2
IGBC Green Landscape	3
IGBC Green Landscape Rating System	5
Updates and Addenda	9
IGBC Green Landscape Project Checklist	10
Site Planning & Management	15
SPM Mandatory Requirement 1	Preservation of Top soil 17
SPM Mandatory Requirement 2	Preserve / Restore Heritage Landscape Features 18
SPM Mandatory Requirement 3	Protect Existing Water Bodies 19
SPM Credit 1	Natural Topography 20
SPM Credit 2	Nurseries 21
SPM Credit 3	Basic Amenities 22
SPM Credit 4	Design for Differently Abled 23
SPM Credit 5	Green Area Ratio 24
SPM Credit 6	Heat Island Mitigation, Non-roof Areas 25

SPM Credit 7	Night Sky Pollution Reduction	26
SPM Credit 8	Access to Public Transport	27
SPM Credit 9	Parking Spaces	28
SPM Credit 10	Brownfield or Greyfield Redevelopment	29
Selection of Species for Landscape		31
SSL Credit 1	Turf Design	33
SSL Credit 2	Native Species	34
SSL Credit 3	Drought Tolerant Species	35
SSL Credit 4	Species to Attract Habitat	36
SSL Credit 5	Species to Repel Mosquitoes	37
SSL Credit 6	Species for Local Food Production	38
Water Conservation		39
WC Mandatory Requirement 1	Rainwater Harvesting, Non-roof	41
WC Credit 1	Rainwater Harvesting, Non-roof	42
WC Credit 2	Rain Water Filtration	44
WC Credit 3	Use of Efficient Irrigation Systems	45
WC Credit 4	Reuse of Treated Waste Water, Onsite&Offsite	46
Material Selection		47
MS Credit 1	Handling of Waste, During Construction	49
MS Credit 2	Reuse of Salvaged Materials	50
MS Credit 3	Local Materials	52
MS Credit 4	Materials with Recycled Content	54
MS Credit 5	Rapidly Renewable Materials and Certified Wood	55

Health & Well-being		57
HW Mandatory Requirement 1	Minimise Exposure to Tobacco Smoke	59
HW Credit 1	Eco-friendly Vehicles, Onsite	60
HW Credit 2	Designated Spaces for Relaxation	61
HW Credit 3	Outdoor Spaces for Social Gathering	62
HW Credit 4	Facilities for Physical Activity	63
HW Credit 5	Low VOC Paints and Adhesives	64
Energy Efficiency		65
EE Credit 1	Energy Efficient Lighting	67
EE Credit 2	Energy Efficient Pumps & Motors	68
EE Credit 3	On-site Renewable Energy	69
Operation & Maintenance		71
OM Mandatory Requirement 1	Plan for Sustainable Landscape Maintenance	73
OM Mandatory Requirement 2	Segregation of Waste, During Operation	74
OM Credit 1	Water Use Monitoring	75
OM Credit 2	Energy Use Monitoring	76
OM Credit 3	Organic Waste Management	77
OM Credit 4	Design for Accessibility, Safety and Hygiene	78
OM Credit 5	Awareness and Education on Sustainability	79
OM Credit 6	Control and Manage Invasive Species	80
OM Credit 7	Organic Fertilisers	81
OM Credit 8	Organic Pesticides	82

OM Credit 9	Training of Operation & Maintenance Staff	83
OM Credit 10	Feedback from Users & Visitors	84
Innovation & Design Process		85
ID Credit 1	Innovation & Design Process	87
ID Credit 2	IGBC Accredited Professional	90

Foreword from the Indian Green Building Council (IGBC)

India is witnessing tremendous growth in infrastructure and construction development. As development gains momentum, the need for greenery and lung space is also gaining importance. As the sector is growing rapidly, preserving the environment poses a host of challenges. To enable the construction industry environmentally sensitive, CII-Sohrabji Godrej Green Business Centre has established the Indian Green Building Council (IGBC).

IGBC is a consensus driven not-for-profit Council representing the building industry, consisting of more than 1,395 committed members. The Council encourages, builders, developers, owners, architects and consultants to design & construct green buildings thereby enhancing the economic and environmental performance of buildings.

The Green Building Movement in India has been spearheaded by IGBC (part of CII) since 2001, by creating National awareness. The Council's activities have enabled a market transformation with regard to green building concepts, materials and technologies.

IGBC continuously works to provide tools that facilitate the adoption of green building practices in India. The development of IGBC Green Landscape Rating System is another important step in this direction.

IGBC Membership

IGBC draws its strength from its members who have been partners in facilitating the Green Building Movement in India. The local chapters led by individual champions and committed members have been instrumental in reaching out the vision of the IGBC at the regional levels. IGBC is today seen as a leader in spearheading the Indian Green Building Movement. The Council is member-driven and consensus-based.

Contact :

Indian Green Building Council

C/o Confederation of Indian Industry
CII – Sohrabji Godrej Green Business Centre
Survey No. 64, Near HITEC City
Kothaguda Post, Ranga Reddy District
Hyderabad – 500 084, India
Ph : +91 40 4418 5111
Fax : +91 40 2311 2837
Email : igbc@cii.in
Web : www.igbc.in
www.greenlandscape.in

I. Introduction

Rapid growth in urbanisation has placed immense strain on land and other natural resources which is resulting in reduction of green spaces. It is also resulting in a demographic switch from a rural to a predominantly urban society. As urbanisation continues to grow, there is an imminent need to enhance the green cover in all the cities. This is particularly true for developing countries, where urbanisation is progressing.

Green concepts and techniques in landscape can help address national priorities like water efficiency, enhancing biodiversity, waste management, energy efficiency and quality of life. Most importantly, these concepts can create healthier and safer places for people to live, work and play.

Against this background, the Indian Green Building Council (IGBC) with the support of key stakeholders has launched 'IGBC Green Landscape Rating System' to address the National priorities. This is the first rating programme developed in India, exclusively for landscapes.

II. Benefits of Green landscapes

Green Landscapes can have tremendous benefits, both tangible and intangible. The most tangible benefits are the reduction in potable water, better handling of waste and energy efficiency. Intangible benefits include a serene experience for the user, enhanced biodiversity and protection & enriching of top soil.

III. National Priorities Addressed in the Rating System

The Green Landscape Rating System addresses the most important National priorities which include potable water conservation, enhanced biodiversity, health & well-being of the users, effective waste management, energy savings and reduced dependency on virgin materials

❖ Water Conservation:

Most of the Asian countries are water stressed and in countries like India, the water table has reduced drastically over the last decade. Green Landscape Rating System encourages use of water in a self-sustainable manner through reducing, recycling and reusing strategies. The implementation of the various measures can result in water savings of 40-50 %.

❖ Enhancing Biodiversity:

Globally, the loss of biodiversity is on the rise. The rating system promotes the planting of native species and the protection and creation of natural habitats, to promote the local biodiversity.

❖ **Health and Well-being:**

Health and well-being of people is the most important aspect of Green Landscapes. Research demonstrates that aesthetically pleasing greenery can enhance the solace and well-being of the users. People instinctively get better connected to nature. Therefore, the rating system encourages design of landscapes, wherein there is balance between the built environment and nature.

❖ **Effective Waste Management :**

Handling of waste in the park/garden is challenging as most of the waste generated is not segregated at source. This waste has a high probability of going to landfills. The rating system intends to address this by encouraging the park/garden to segregate the waste and divert from landfills

❖ **Energy Efficiency:**

There is an immense opportunity to save energy. Through IGBC Green Landscape Rating System, landscape can reduce energy through energy efficient lighting, motors, pumps etc,. The rating system encourages landscapes which select and use BEE labeled equipment systems, motors and pumps. The saving potential can be as high as 30-40%.

❖ **Reduced Dependency of Virgin Materials:**

The rating system encourages projects to use recycled & reused material, and discourages the use of virgin wood, thereby, addressing environmental impacts associated with extraction and processing of virgin materials. Reduced usage of virgin wood is also encouraged.

IV. IGBC Green Landscape

IGBC has set up the Green Landscape Core Committee to develop the pilot rating programme. This committee comprised of key stakeholders including architects, landscape architects, builders, consultants, developers, horticulturist, academicians, botanist and industry representatives. The varied experience and professions of the committee members brings in a holistic perspective in the process of developing the rating programme.

A. Features of IGBC Green Landscape Rating System

IGBC Green Landscape Rating System is a voluntary and consensus based programme. The rating system has been developed based on practices and technologies that are presently available. The objective of IGBC Green Landscape Rating System is to facilitate creation of comfortable and environmentally friendly landscape for people.

The rating system is evolved so as to be comprehensive and at the same time user-friendly. The programme is fundamentally designed to enhance quality of life for users and address national priorities.

The rating programme uses well accepted National standards. Wherever local or National standards are not available, appropriate international benchmarks have been considered.

B. Scope of IGBC Green Landscapes

IGBC Green Landscape Rating System is a measurement system designed for rating new and existing parks/gardens, which are broadly classified into two categories:

1. Small parks/gardens (\leq 5 acres)
2. Large parks/gardens ($>$ 5 acres)

Landscape facilities in Airport/ Amusement Parks/ Botanical Garden/ Campus/ Clubs/ Commercial/ Community parks/ Convention centre/ Film cities & similar facilities/ Golf course/ Government offices/ Guest houses/ Heritage sites/ Hospitals/ Hotels/ Industrial/ Institutional/ IT parks/ Memorial Parks/ Residential/ Resorts/ Retail/ SEZ's and Temples can apply the rating tool

The park/ garden should be a single parcel of land, and it cannot be in multiple pockets, beyond the site boundary.

In general, any landscapes (private or public) which can meet the mandatory requirements and minimum credit requirements can apply. Various levels of certification are awarded based on the total points earned.

C. The Future of IGBC Green Landscapes

Many new green concepts, materials, technologies and equipment are being introduced in the market. With continuous upgradation and introduction of new green technologies and products, it is important that the rating programme also keeps pace with current standards and technologies. Therefore, the rating programme will also undergo periodic revisions to incorporate the latest advances and changes. It is important to note that project teams applying for IGBC Green Landscapes should register their projects with the latest version of the rating system. During the course of implementation, projects have an option to transit to the latest version of the rating system.

IGBC will highlight new developments on its website on a continuous basis at www.igbc.in / www.greenlandscape.in

V. IGBC Green Landscape Rating System

IGBC Green Landscape rating system addresses green features under the following categories:

- ❖ Site Planning & Management
- ❖ Selection of Species for Landscape
- ❖ Water Conservation
- ❖ Material Selection
- ❖ Health & Well-being
- ❖ Energy Efficiency
- ❖ Operation & Maintenance
- ❖ Innovation & Design Process

The guidelines detailed under each mandatory requirement & credit enables the design and construction of green landscapes of all sizes and types. Different levels of certification are awarded based on the total credits earned. However, every Green Landscape should meet certain mandatory requirements, which are non-negotiable.

The various levels of rating awarded are:

Certification Level	Recognition
Certified	Best Practices
Silver	Outstanding Performance
Gold	National Excellence
Platinum	Global Leadership

a. When to use IGBC Green Landscape Rating

IGBC Green Landscape Rating System is designed both for existing and new landscapes. The project team can evaluate all the possible points to apply under the rating system using a checklist. The project can apply for IGBC Green Landscape, certification if it can meet all mandatory requirements and achieve the minimum required points.

b. IGBC Green Landscape Rating System Registration

Project teams interested in IGBC Green Landscape rating system certification for their project, must first register with IGBC. Projects can be registered on IGBC website (www.igbc.in) under 'IGBC Green Landscape'. The website includes information on registration fee for IGBC member companies, as well as non-members. Registration

is the initial step which helps establish contact with IGBC and provides access to the required documents, templates, important communications and other necessary information.

IGBC website will have all important details on IGBC Green Landscape registration & certification - process, schedule and fee.

c. IGBC Green Landscape Certification

The rating system caters to projects like landscapes in Airport/ Amusement Parks/ Botanical Garden/ Campus/ Clubs/ Commercial/ Community parks/ Convention centre/ Film cities & similar facilities/ Golf course/ Government offices/ Guest houses/ Heritage sites/ Hospitals/ Hotels/ Industrial/ Institutional/ IT parks/ Memorial Parks/ Residential/ Resorts/ Retail/ SEZ’s and Temples. The threshold criteria for certification levels are as under:

Certification Level	Parks/Gardens with area ≤ 5 acres (Small parks)	Parks/Gardens with area > 5 acres (Large parks)	Recognition
Certified	45-53	50-59	Best Practices
Silver	54-62	60-69	Outstanding Performance
Gold	63-71	70-79	National Excellence
Platinum	72-90	80-100	Global Leadership

d. Documentation

To earn the IGBC Green Landscape Rating, the project must satisfy all the mandatory requirements and the minimum number of credit points.

The project team is expected to provide supporting documents at preliminary and final stage of submission, for all the mandatory requirements and the credits attempted.

The project needs to submit the following:

1. General information of project including
 - a. General drawings (in PDF format only):
 - i. Master/ Site plan
 - ii. Landscape plan
 - iii. Parking plans
 - iv. Contour section
 - v. Photographs/ Rendered views of various features

2. Filled-in Master Template (in excel format)
3. Narratives and supporting documentation such as drawings, calculations (in excel sheets), declarations/ contract documents, purchase invoices, organisation policies, manufacturer cut-sheets/ letters/ material test reports, etc., for each mandatory requirement & credit

The necessary details are mentioned in this guide, under each mandatory requirement and credit.

Documentation is submitted in two phases – preliminary submittal and final submittal:

The preliminary submission involves those credits which can be evaluated at the design stage. After the preliminary submission, review is done by third party assessors and review comments would be provided within 35 calendar days.

The final submission involves submission of clarifications to preliminary review queries. This review and rating will also be provided within 35 calendar days of submission

It is important to note that the mandatory requirements/ credits earned at the preliminary review are only considered as anticipated. These mandatory requirements/ credits are not awarded until the final documents are submitted, along with additional documents showing implementation of design features. If there are changes in any 'credit anticipated' after preliminary review, these changes need to be documented and resubmitted during the final review.

IGBC will recognize landscapes that achieve one of the rating levels with a formal letter of certification and a mountable plaque.

e. Credit Interpretation Ruling

In some instances the design team can face certain challenges in applying or interpreting a mandatory requirement or a credit. It can also happen in cases where the project can opt to achieve the same intent through a different compliance route.

To resolve this, IGBC uses the process of 'Credit Interpretation Ruling' (CIR) to ensure that rulings are consistent and applicable to other projects as well.

The below steps are to be followed, in case the project team requires Credit Interpretation Ruling:

- ❖ Refer the Abridged Reference Guide for description of the credit intent, compliance options and approach & methodologies.
- ❖ Review the intent of the mandatory requirement/ credit and self-evaluate whether the project satisfies the intent.

- ❖ Review the Credit Interpretation web page for previous CIRs on the relevant mandatory requirement/ credit. All projects registered under IGBC Green Landscape rating system will have access to this page.
- ❖ If a similar CIR has not been addressed or does not answer the question sufficiently, submit a credit interpretation request. Only registered projects are eligible to post CIRs. Two CIRs are answered without levying any fee and for any CIR beyond the first two CIRs, a fee is levied.

f. Appeal

In rare cases, mandatory requirements or credits may be denied due to misinterpretation of the intent. On receipt of the final review and if the project team feels that sufficient grounds exist to appeal a credit denied in the final review, the project has an option to appeal to IGBC for reassessment of denied mandatory requirements or credits. The documentation for the mandatory requirements or credits seeking appeal may be resubmitted to IGBC along with necessary fee. IGBC will take 30 calendar days to review such documentation. If an appeal is pursued, please note that a different review team will be assessing the appeal documentation.

The following documentation should be submitted for appeal review:

1. General information of project including
 - a. General drawings (in PDF format only):
 - i. Master/ Site plan
 - ii. Landscape plan
 - iii. Parking plans
 - iv. Contour Sections
 - v. Photographs/ Rendered views of various features
2. Filled-in Letter Template for respective mandatory requirement/ credit.
3. Original, re-submittal, and appeal submittal documentation for only those mandatory requirement/ credits that the project is appealing for. Also include a narrative for each appealed mandatory requirement/ credit to describe how the documents address the reviewers comments and concerns.

g. Fee

Registration, Certification and CIR fee details are available on IGBC website (www.igbc.in) or can be obtained from IGBC (igbc@cii.in).

VI. Updates and Addenda

This is the Pilot version of IGBC Green Landscape Rating System. As the rating system continues to improve and evolve, updates, addenda and errata to the abridged reference guide will be made available through IGBC website. These additions will be incorporated in the next version of the rating system.

Checklist for IGBC Green Landscape Rating System		Points Available	
		Small Parks ≤ 5 acres	Large Parks > 5 acres
Site Planning & Management			
SPM Mandatory Requirement 1	Preservation of Top Soil	Required	Required
SPM Mandatory Requirement 2	Preserve / Restore Heritage Landscape Features	Required	Required
SPM Mandatory Requirement 3	Protect Existing Water Bodies	Required	Required
SPM Credit 1	Natural Topography: 20%	1	1
SPM Credit 2	Nurseries	NA	2
SPM Credit 3	Basic Amenities	NA	2
SPM Credit 4	Design for Differently Abled	1	1
SPM Credit 5	Green Area Ratio: 70%, 80%	2	2
SPM Credit 6	Heat Island Mitigation, Non-roof Areas:50%, 75%	2	2
SPM Credit 7	Night Sky Pollution Reduction	1	1
SPM Credit 8	Access to Public Transport	NA	1
SPM Credit 9	Parking Spaces	1	1
SPM Credit 10	Brownfield or Greyfield Redevelopment	1	1
		9	14

Checklist for IGBC Green Landscape Rating System		Points Available	
		Small Parks ≤ 5 acres	Large Parks > 5 acres
Selection of Species for Landscape			
SSL Credit 1	Turf Design:20%, 40%	2	2
SSL Credit 2	Native Species: 15%,20%, 25%, 30%, 35%, 40%	6	6
SSL Credit 3	Drought Tolerant Species: 20%, 25%, 30%, 35%, 40%, 45%	6	6
SSL Credit 4	Species to Attract Habitat: 20%, 30%, 40%, 50%	4	4
SSL Credit 5	Species to Repel Mosquitoes: 25%, 50%	2	2
SSL Credit 6	Species for Local Food Production :5%, 10%	NA	2
		20	22
Water Conservation			
WC Mandatory Requirement 1	Rainwater Harvesting, Non-roof: 10%	Required	Required
WC Credit 1	Rainwater Harvesting, Non-roof:20%, 30%	2	2
WC Credit 2	Rainwater Filtration	1	1
WC Credit 3	Use of Efficient Irrigation Systems	6	6
WC Credit 4	Reuse of Treated Waste Water, Onsite & Offsite: 15%, 30%, 45%, 60%	4	4
		13	13

Checklist for IGBC Green Landscape Rating System		Points Available	
		Small Parks ≤ 5 acres	Large Parks > 5 acres
Material Selection			
MS Credit 1	Handling of Waste, During Construction: 50%, 95%	2	2
MS Credit 2	Reuse of Salvaged Materials: 2.5%, 5%, 7.5%, 10%	4	4
MS Credit 3	Local Materials: 50%, 75%	2	2
MS Credit 4	Materials with Recycled Content: 20%, 30%	2	2
MS Credit 5	Rapidly Renewable Materials and Certified Wood: 50%, 75%	2	2
		12	12
Health & Well-being			
HW Mandatory Requirement 1	Minimise Exposure to Tobacco Smoke	Required	Required
HW Credit 1	Ecofriendly Vehicles, On-site	NA	1
HW Credit 2	Designated Spaces for Relaxation	NA	2
HW Credit 3	Outdoor Spaces for Social Gathering	2	2
HW Credit 4	Facilities for Physical Activity	4	4
HW Credit 5	Low VOC Paints and Adhesives	1	1
		7	10

Checklist for IGBC Green Landscape Rating System		Points Available	
		Small Parks ≤ 5 acres	Large Parks > 5 acres
Energy Efficiency			
EE Credit 1	Energy Efficient Lighting	3	3
EE Credit 2	Energy Efficient Pumps & Motors	4	4
EE Credit 3	On-Site Renewable Energy: 1.5%, 3%, 4.5%, 6%	4	4
		11	11
Operation & Maintenance			
OM Mandatory Requirement 1	Plan for Sustainable Landscape Maintenance	Required	Required
OM Mandatory Requirement 2	Segregation of Waste, During Operation	Required	Required
OM Credit 1	Water Use Monitoring	1	1
OM Credit 2	Energy Use Monitoring	1	1
OM Credit 3	Organic Waste Management: 50%, 95%	2	2
OM Credit 4	Design for Accessibility, Safety and Hygiene	1	1
OM Credit 5	Awareness and Education on Sustainability	2	2
OM Credit 6	Control & Manage Invasive Species	1	1
OM Credit 7	Organic Fertilisers: 50%, 75%	2	2
OM Credit 8	Organic Pesticides	1	1
OM Credit 9	Training of Operation & Maintenance Staff	1	1
OM Credit 10	Feedback from Users and Visitors	1	1
		13	13

Checklist for IGBC Green Landscape Rating System		Points Available	
		Small Parks ≤ 5 acres	Large Parks > 5 acres
Innovation & Design Process			
ID Credit 1.1	Innovation in Design	1	1
ID Credit 1.2	Innovation in Design	1	1
ID Credit 1.3	Innovation in Design	1	1
ID Credit 1.4	Innovation in Design	1	1
ID Credit 2	IGBC Accredited Professional	1	1
		5	5
Total Maximum Points		90	100

Certification Levels:

Certification Level	Parks/ Gardens with area ≤ 5 acres (Small Parks)	Parks/ Gardens with area > 5 acres (Large Parks)
Certified	45 - 53	50 - 59
Silver	54 - 62	60 - 69
Gold	63 - 71	70 - 79
Platinum	72 - 90	80 - 100

Site Planning & Management

Preservation of Top soil

SPM Mandatory Requirement 1

Intent:

Control soil erosion and thereby reduce negative impacts to the site.

Compliance Options:

Adopt the following measures, as applicable:

- ❖ Soil erosion control measures shall conform to best management practices highlighted in National Building Code (NBC) of India, Part 10, Section 1, Chapter 4 – Protection of Landscape during Construction and Chapter 5 – Soil and Water Conservation. This is to be addressed during construction and post-occupancy.
- ❖ Remove, stack & protect the fertile top soil from the development areas and reuse for landscaping, wherever applicable.
- ❖ Develop appropriate measures to address soil erosion, post-occupancy.

Documentation Required:

New Parks/ Gardens:

- A description on the erosion and sedimentation control measures implemented during construction and post-occupancy.
- Drawings showing erosion and sedimentation control measures, during construction and post-occupancy.

Existing Parks/ Gardens:

- A copy of organisational policy on the erosion and sedimentation control measures to be implemented to meet this mandatory requirement.

Preserve / Restore Heritage Landscape Features

SPM Mandatory Requirement 2

Intent:

Protect areas with heritage and cultural relevance, thereby conserving local culture.

Compliance Options:

- ❖ Protect features that are identified as significant to heritage and local culture, within the site area.
- ❖ Develop a maintenance plan to protect the heritage and local culture site features.

Documentation Required:

- A description on the strategies implemented on site to preserve existing heritage features and measures taken to protect/ restore the heritage & cultural features.
- A site plan and relevant photographs showing heritage structures and existing trees (of historic importance).

Protect Existing Water Bodies

SPM Mandatory Requirement 3

Intent:

Protect or restore existing water bodies, so as to promote biodiversity.

Compliance Options:

Protect or restore all the existing water bodies within the site area.

Documentation Required:

- A description on the strategies implemented on site to preserve existing water bodies and measures taken to protect/ restore existing water bodies.
- Site plan showing existing water bodies within the park/ garden.
- Relevant photographs showing existing water bodies within the park/ garden.

Natural Topography

SPM Credit 1

Points: 1

Intent:

Minimise disturbances to the site so as to reduce long-term environmental impacts

Compliance options:

Avoid disturbance to the site by retaining natural topography for atleast 20% of the site area.

Notes:

- *Retaining 'Natural Topography' in its broad sense means preserving natural features such as rocks, water bodies, terrain etc.*
- *Grass medians, grass pavers, jogging track, parking areas, play ground, tot-lots, walkways etc., are considered disturbances.*
- *For this credit, vegetation to the ground only shall be considered and vegetation over built structures such as roofs, basement, podiums, etc., cannot be considered.*
- *For this credit calculation, potted plants should not be considered as vegetation.*

Documentation Required:

- A description on the measures implemented to retain the natural topography.
- Calculations indicating the total site area, area retained with natural topography (and / or) vegetation, on the ground only.
- Site drawing highlighting area retained with natural topography (and /or) vegetation.
- Photographs showing the site area retained with natural topography (and / or) vegetation, on the ground only.

Nurseries

Not applicable for Small Parks/Gardens

SPM Credit 2

Points: 2

Intent:

Set-up nurseries to effectively manage landscapes, so as to promote biodiversity.

Compliance Options:

- ❖ Set-up own nurseries for plantation of saplings within the site.

OR

- ❖ Tie-up with established nurseries within the vicinity.

Note:

- *Vicinity here refers nurseries existing within 5 km radius from the project entry/ exit.*

Documentation Required:

- A description on the strategies implemented on site to maintain the nurseries, during development and post-occupancy.
- A site plan showing the location of nurseries.
- Photographs showing the nurseries.

Basic Amenities

Not applicable for Small Parks/ Gardens

SPM Credit 3

Points: 1 - 2

Intent:

Enhance the landscape experience by providing amenities.

Compliance Options:

Provide the following basic amenities within the parks/ gardens.

(One point will be awarded for every 3 amenities provided)

- ❖ Drinking water facilities
- ❖ Rest rooms/ toilets
- ❖ Seating/ resting area
- ❖ Shaded structures (Ex: pergola)
- ❖ Cafeteria
- ❖ First-aid facilities

Note:

- *This point can be earned, only if, the basic amenities are in operation by the time of project completion.*

Documentation Required:

- A narrative describing the basic amenities provided within the park/ garden.
- An area map (to scale) indicating the location of basic amenities provided within the park/ garden.
- Supporting photographs of amenities provided on site.

Design for Differently Abled

SPM Credit 4

Points: 1

Intent:

Ensure that the landscape is user-friendly for differently abled people.

Compliance Options:

Design the parks/ gardens with the following provisions, as applicable, for differently abled people in accordance with the guidelines of National Building Code (NBC) of India:

- ❖ Appropriately designed preferred car parking spaces having easy access to all the main entrances (one car park space for every 50 car parking spaces).
- ❖ Provision for easy access to all main entrances.
- ❖ Uniformity in flooring level for hindrance free movement in common and exterior areas.
- ❖ Non-slippery ramps with hand rails on atleast one side.
- ❖ Rest rooms (toilets) in common areas designed for differently abled people (minimum one rest room for men and women).

Documentation Required:

- A narrative describing all measures implemented in the landscape design for differently abled people.
- Drawings highlighting provisions for differently abled people.
- Photographs showing the measures implemented.

Green Area Ratio

SPM Credit 5

Points: 1-2

Intent:

Increase the green cover in landscape, to preserve local biodiversity.

Compliance Options:

Ensure atleast 70% of total landscape area has green cover to the ground.

Points are awarded as below:

Percentage of total landscape area with green cover	Points
≥ 70%	1
≥ 80%	2

Notes:

- *Site features such as existing water bodies & heritage structures should be excluded from the credit calculations.*
- *For this credit calculations, vegetation to the ground only shall be considered and vegetation over built structures such as roofs, basement, podiums, etc., cannot be considered.*
- *For this credit calculation, potted plants should not be considered as vegetation.*

Documentation Required:

- A narrative describing green cover provided in the site.
- Calculations showing vegetated area and hardscape area within the site.
- Landscape plan showing the area covered with vegetation and hardscape within the site.

Heat Island Mitigation, Non-roof Areas

SPM Credit 6

Points: 1-2

Intent:

Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimise impact on microclimate.

Compliance Options:

For atleast 50% of exposed non-roof impervious areas (such as footpaths, pathways, roads, uncovered surface parking and other impervious areas) within the site area, provide atleast one or combination of the following strategies:

- ❖ Shade from tree cover within 5 years
- ❖ Open grid pavers, including grass pavers

Points are awarded as below:

Percentage of non-roof impervious area provided with tree shade or open grid pavers	Points
≥ 50%	1
≥ 75%	2

Documentation Required:

- Narrative describing the strategies to reduce heat island effect from non-roof impervious areas.
- Landscape plan, calculations and photographs showing non-roof impervious areas and areas covered with shade from tree cover within 5 years (and/ or) open grid pavers, including grass pavers.

Night Sky Pollution Reduction

SPM Credit 7

Points: 1

Intent:

Reduce light pollution from exterior lighting, to increase night sky access and enhance nocturnal environment.

Compliance Options:

- ❖ No external light should be upward looking.
- ❖ The lighting power densities (LPD) for exterior areas (landscape area, pathways, facades, etc.,) should not exceed the LPD values recommended in ECBC, Section 7.4 – Exterior Lighting Power.

Documentation Required:

- A narrative describing the measures implemented for reduction of light pollution from exterior lighting.
- Lighting power density calculations for all exterior areas in landscape.
- Lighting layout highlighting the location of all external light fixtures in the park/garden.

Access to Public Transport

Not applicable for Small Parks/ Gardens

SPM Credit 8

Points: 1

Intent:

Reduce pollution and land development impacts from automobile use.

Compliance Options:

Provide access to public transportation such as public bus stop or railway station, within a walking distance of 1 km of main entry (or entries) to the park / garden.

In the event of such facilities not being available, shuttle services can be provided to the nearest rail or bus service.

Documentation Required:

- List of railway station/ public bus stops nearest to the park/ garden.
- An aerial map (to scale) indicating linear distances from any access entry of the park / garden to the nearest railway stations/ public bus stops.

Parking Spaces

SPM Credit 9

Points: 1

Intent:

Provide adequate parking, to minimise disturbance caused due to parking on public roads, and, thereby enhance quality of life.

Compliance Options:

- ❖ Provide parking facilities to meet and exceed the requirements of local parking regulations/ byelaws by 10%.

AND

- ❖ Designate atleast 5% of parking area for bicycles.

Documentation Required:

- A narrative describing the parking facilities provided with in the park/ garden.
- Calculations demonstrating that project has exceeded local parking requirements by atleast 10%.
- Calculations demonstrating that atleast 5% of total parking area is allocated for bicycles.
- Parking plans showing spaces allocated for four wheelers, two-wheelers and bicycles.

Brownfield or Greyfield Redevelopment

SPM Credit 10

Points: 1

Intent:

Rehabilitate damaged sites where development is complicated by environmental contamination, developed or graded, to reduce pressure on developed land.

Compliance Options:

- ❖ Select a site that is designated as contaminated site (brownfield) by local authority and take appropriate remediation measures to overcome contamination.

OR

- ❖ Select a site that is previously developed or graded (greyfield).

Documentation Required:

For contaminated sites / brownfield sites

- A detailed narrative describing the site contamination and remediation efforts undertaken by the project.
- Test reports indicating the level of site contamination.

For previously developed sites/ greyfields

- A detailed narrative describing the rehabilitation efforts undertaken by the project.

Selection of Species for Landscape

Turf Design

SSL Credit 1

Points: 1-2

Intent:

Limit turf area in landscape, to ensure minimum water consumption.

Compliance Options:

Design turf area to an extent of maximum 40% of the total landscaped area.

Points are awarded as below:

Percentage of landscape area covered with turf	Points
≤ 40%	1
≤ 20 %	2

Notes:

- *For this credit, landscape areas over built structures such as basements, podium, roofs, etc., can be considered for landscape area calculations.*
- *Areas planted with turf should not exceed a slope of 25 percent (i.e., a 4 to 1 slope).*
- *For this credit calculation, potted plants should not be considered under landscaping.*

Documentation Required:

- A narrative describing the turf area provided in the park/ garden.
- Calculations indicating the percentage of landscape area covered with turf.
- Landscape plan highlighting total area covered with turf.

Native Species

SSL Credit 2

Points: 1-6

Intent:

Maintain and restore plants native to the place, so as to facilitate adaptability and reap the environmental benefits.

Compliance Options:

Ensure atleast 15% of total landscape area is provided with native plant species.

Points are awarded as below:

Percentage of landscape area provided with native plant species	Points
≥ 15%	1
≥ 20%	2
≥ 25%	3
≥ 30%	4
≥ 35%	5
≥ 40%	6

Notes:

- *Monocultures (single species) or an excessive number of same species shall not be considered.*
- *For this credit, landscape areas over built structures such as basements, podium, roofs, etc., can be considered for landscape area calculations.*
- *For this credit calculation, potted plants should not be considered as vegetation.*

Documentation Required:

- A narrative describing the measures taken for selection of native species.
- Calculations indicating the percentage of landscape area provided with native plant species.
- Landscape plan highlighting the location of areas planted with native species.
- List of native plant species (including trees, shrubs, herbs, climbers and grass) used in the parks/ gardens.

Drought Tolerant Species

SSL Credit 3

Points: 1-6

Intent:

Encourage the use of drought tolerant species, so as to minimise the water consumption of the landscape area.

Compliance Options:

Ensure atleast 20% of total landscape area is provided with drought tolerant species.

Points are awarded as below:

Percentage of landscape area provided with drought tolerant plant species	Points
≥ 20%	1
≥ 25%	2
≥ 30%	3
≥ 35%	4
≥ 40%	5
≥ 45%	6

Notes:

- *Monocultures (single species) or an excessive number of same species shall not be considered.*
- *For this credit, landscape areas over built structures such as basements, podium, roofs, etc., can be considered for landscape area calculations.*
- *For this credit calculation, potted plants should not be considered as vegetation.*

Documentation Required:

- A narrative describing the measures taken for selection of drought tolerant species.
- Calculations indicating the percentage of landscape area provided with drought tolerant species.
- Landscape plan highlighting the location of areas planted with drought tolerant species.
- List of drought tolerant species (including trees, shrubs, herbs, climbers and grass) used in the park / garden.

Species to Attract Habitat

SSL Credit 4

Points: 1-4

Intent:

Maintain or restore species that attract habitat, so as to enhance the biodiversity.

Compliance Options:

Ensure atleast to an extent of 20% of the total landscape area is provided with species that attract habitat, within the site area.

Points are awarded as below:

Percentage of landscape area provided with species that attract habitat	Points
≥ 20%	1
≥ 30%	2
≥ 40%	3
≥ 50%	4

Notes:

- *For this credit, landscape areas over built structures such as basements, podium, roofs, etc., can be considered for landscape area calculations.*
- *For this credit calculation, potted plants should not be considered as vegetation.*

Documentation Required:

- A narrative describing the measures taken for selection of species that attract habitat.
- Calculations indicating the percentage of landscape area provided with species that attract habitat.
- Landscape plan highlighting the location of areas planted with such species.
- List of fauna which gets attracted to the floral species provided.

Species to Repel Mosquitoes

SSL Credit 5

Points: 1-2

Intent:

Maintain or restore the plant species that can repel mosquitoes, so as to ensure health & comfort to the visitors.

Compliance Options:

Ensure use of species that repel mosquitoes, atleast to an extent of 25% of the areas designated for seating.

Points are awarded as below:

Percentage of seating area provided with species that repel mosquitoes	Points
≥ 25%	1
≥ 50%	2

Notes:

- *For this credit calculation, potted plants should not be considered under landscaping.*

Documentation Required:

- A narrative describing the measures taken for selection of species that repel mosquitoes.
- Calculations indicating the percentage of seating area provided with species that repel mosquitoes.
- Landscape plan highlighting the seating areas planted with such species.
- List of floral species used to repel the mosquitoes at the seating areas.

Species for Local Food Production

Not applicable for Small Parks/ Gardens

SSL Credit 6

Points: 1-2

Intent:

Encourage fruit and vegetable farming, so as to encourage food self-sufficiency.

Compliance Options:

Ensure use of local food production of fruit and vegetable farming within the site, to an extent of atleast 5% of the total landscape area.

Points are awarded as below:

Percentage of landscape area provided for fruit and vegetable farming	Points
≥ 5%	1
≥ 10%	2

Documentation Required:

- A description on the measures considered for selection of species for local food production.
- Calculations indicating the percentage of landscape area provided for fruit and vegetable farming.
- Landscape plan showing the area ear marked for fruit and vegetable farming.
- List of fruit and vegetable species grown at the site.

Water Conservation

Rainwater Harvesting, Non-roof

WC Mandatory Requirement 1

Intent:

Enhance ground water table and reduce municipal water demand through effective rain water management.

Compliance Options:

Provide rainwater harvesting system to capture atleast 10% of run-off volumes from non-roof areas. The harvesting system designed should cater to atleast 1 day of normal rainfall* occurred in the last 5 years.

In areas where the central/ state ground water board does not recommend artificial rain water recharge (or) if the groundwater table is less than 4 m, the projects are deemed to have shown compliance, without installing rainwater harvesting system.

Notes:

- *For rainfall information, refer Indian Metrological Department data at <http://www.imd.gov.in>.*
- ** To arrive at the normal rainfall, divide peak month rainfall occurred in each year (in last 5 years) by number of rainy days in the respective month, and take the average of the five values obtained. Abnormal rainy days like flash floods can be excluded from calculations.*
- *Projects which do not have data on the number of rainy days, a maximum of 15 rainy days can be considered to arrive at normal rainfall.*
- *In areas where the water percolation is limited, collection tanks may be provided to meet the above requirement.*

Documentation Required:

- Narrative describing strategies implemented to capture/ harvest rain water from non-roof areas.
- Details of the rainwater harvesting system specifying storage / harvesting capacity of water.
- Calculations demonstrating the percentage of run-off volumes from non-roof captured by rainwater harvesting system.
- External rain water layout showing the rain water harvesting systems.

Rainwater Harvesting, Non-roof

WC Credit 1

Points: 1-2

Intent:

Enhance ground water table and reduce municipal water demand through effective rain water management.

Compliance Options:

Provide rainwater harvesting system to capture atleast 20% of run-off volumes from non-roof areas. The harvesting system designed should cater to atleast 1 day of normal rainfall* occurred in the last 5 years.

Points are awarded as below:

Percentage of run-off volumes from non-roof captured/ recharged by rainwater harvesting system	Points
≥ 20% from non-roof areas	1
≥ 30% from non-roof areas	2

In areas where the central/ state ground water board does not recommend artificial rain water recharge (or) if the groundwater table is less than 4 m, the projects can show nominal compliance by collection & reuse and points are awarded as below:

Percentage of run-off volumes from non-roof captured by rainwater harvesting system	Points
≥ 10% from roof & non-roof areas	1
≥ 15% from roof & non-roof areas	2

Notes:

- *For normal rainfall, refer Indian Metrological Department data at <http://www.imd.gov.in>.*
- ** To arrive at the normal rainfall, divide peak month rainfall occurred in each year(in last 5 years) by number of rainy days in the respective month, and take the average of the five values obtained. Abnormal rainy days like flash floods can be excluded from calculations.*
- *Projects which do not have data on the number of rainy days, a maximum of 15 rainy days can be considered to arrive at normal rainfall.*
- *In areas where the water percolation is limited, collection tanks may be provided to meet the above requirement.*

Documentation Required:

- Narrative describing strategies implemented to capture/ harvest rain water from non-roof areas.
- Details of the rainwater harvesting system specifying storage / harvesting capacity of water.
- Calculations demonstrating the percentage of run-off volumes from non-roof captured by rainwater harvesting system.
- External rain water layout showing the rain water harvesting systems.

Rain Water Filtration

WC Credit 2

Points: 1

Intent:

Reduce pollution of natural water flows by filtering contaminants from rain water run-off.

Compliance Options:

Construct on-site water treatment systems to remove total suspended solids (TSS) from post-development rain water run-off.

Documentation Required:

- A description on the rain water filtration techniques incorporated in the landscape design to treat rain water run-off.
- Landscape plan showing the location of rain water treatment / filtration systems. Also, provide cross-section of such treatment systems.

Use of Efficient Irrigation Systems

WC Credit 3

Points: 1-6

Intent:

Reduce water demand for irrigation through efficient irrigation systems.

Compliance Options:

Provide highly efficient irrigation systems for landscape. The following measures can be adopted: *(One point for each feature)*

- ❖ One or more central shut-off valves, as appropriate
- ❖ Moisture sensor controllers
- ❖ Time based controller, for the valves such that the evaporation loss is minimum and plant health is ensured
- ❖ Pressure regulating devices, to maintain optimal pressure to prevent water loss
- ❖ Appropriate planting beds, based on landscape species and irrigation systems
- ❖ Water leak detection system
- ❖ Any other innovative methods for watering

Documentation Required:

- A description on the installed irrigation systems.
- Landscape plans showing the segregation of planting beds based on irrigation requirements.
- Manufacturer cut-sheets and photographs of the installed irrigation systems.

Reuse of Treated Waste Water, Onsite & Offsite

WC Credit 4

Points: 1-4

Intent:

Minimise municipal and ground water usage for landscape applications, so as to conserve potable water.

Compliance Options:

Reuse treated wastewater (on-site & off-site) and/or harvested rain water for atleast 20% of the landscape irrigation requirement.

Points are awarded as below:

Percentage of irrigation requirement catered through treated wastewater/ harvested rain water	Points
≥ 15%	1
≥ 30%	2
≥ 45%	3
≥ 60%	4

Note:

- *Off-site treated waste water shall be used through permanent piped connection.*

Documentation Required:

- A narrative describing the measures implemented for reuse of treated waste water/ harvested rain water for irrigation requirement within the park/ garden.
- Calculations indicating the total irrigation water requirement and the total quantity of treated waste water/ harvested rain water used for landscape.

Material Selection

Handling of Waste, During Construction

MS Credit 1

Points: 1-2

Intent:

Segregate waste generated, at source, so as to prevent such waste being sent to land-fills.

Compliance Options:

Ensure atleast 50% of the construction material and landscape waste generated is properly segregated and subsequently diverted for reuse or recycle.

Points awarded are as below:

Percentage of construction material and landscape waste diverted from landfills	Points
≥ 50%	1
≥ 95%	2

Notes:

- *Excavated earth & stones should not be considered under this credit, as these are natural resources.*
- *Temporary materials such as materials used for form-work, scaffolding etc., shall not be considered for credit calculations.*

Documentation Required:

New Parks/ Gardens:

- Records tabulating the total waste generated during construction, quantities of waste which were diverted from landfills and means by which the waste is diverted.
- Calculations demonstrating the percentage of waste diverted from landfills.
- Letters from site contractor / scrap vendor (as applicable) indicating the type & quantity of waste material diverted and their mode of diversion.

Existing Parks/ Gardens:

- A copy of organisational policy on waste segregation during construction, in case of any renovation.

Reuse of Salvaged Materials

MS Credit 2

Points: 1-4

Intent:

Encourage the use of salvaged materials and products, so as to reduce the demand for virgin materials, thereby minimising the impacts associated with extraction and processing of virgin materials.

Compliance Options:

Ensure atleast 2.5% of the total construction materials (by cost), used in the landscape, are salvaged, refurbished and reused.

Points are awarded as below:

Percentage of Salvaged Materials Reused	Points
≥ 2.5%	1
≥ 5.0%	2
≥ 7.5%	3
≥ 10%	4

Notes:

- *Material Cost = Total Cost – (Labour Cost + Installation Cost).*
- *If Labour and Installation cost is not known, the default material cost should be considered as 60% of the total cost of the component.*
- *Cost of electrical, mechanical & plumbing - equipment, systems & appliances should not be considered in the total material cost.*
- *Temporary materials such as materials used for form-work, scaffolding etc., should not be considered for credit calculations.*

Documentation Required:

New Parks/ Gardens:

- Details of salvaged materials, source and their applications in landscape after refurbishment.
- Calculations indicating the percentage of salvaged materials (in terms of cost) out of total materials cost, sourced by project.

MATERIAL SELECTION

Existing Parks/ Gardens:

- A copy of organisational policy for reuse of salvaged materials for construction and landscape areas, in case of any renovation.

Local Materials

MS Credit 3

Points: 1-2

Intent:

Encourage the use of locally available materials, thereby minimising the associated environmental impacts and encourage local economy.

Compliance Options:

Ensure atleast 50% of the total construction and landscape materials (by cost), used in the park/ garden, are manufactured within a distance of 400 km from the site area.

Points are awarded as below:

Percentage of local materials used	Points
≥ 50%	1
≥ 75%	2

Notes:

- *Material Cost = Total Cost – (Labour Cost + Installation Cost).*
- *If Labour and Installation cost is not known, the default material cost should be considered as 60% of the total cost of the component.*
- *Cost of electrical, mechanical & plumbing - equipment, systems and appliances should not be considered in the total material cost.*
- *Manufacturing refers to the final assembly of components into the materials that is furnished and installed by the tradesmen.*
- *Local materials are those which are assembled as a finished product within 400 km distance of the project site. Assembly here does not include on-site assembly, erection or installation of finished components, as in structural steel, etc.*
- *Temporary materials such as materials used for form-work, scaffolding etc., should not be considered for credit calculations.*

Documentation Required:

New Parks/ Gardens:

- List / details of all local materials procured and respective manufacturers specifying approximate distance from the project site to the place of manufacturing units.
- Calculations indicating the percentage of local materials sourced (in terms of cost) with respect to the total materials cost of the project.
- Manufacturer letters indicating the distance from the project site to the place of their manufacturing units.

Existing Parks/ Gardens:

- A copy of organisational policy on usage of local materials for construction and landscape areas, in case of any renovation.

Materials with Recycled Content

MS Credit 4

Points: 1-2

Intent:

Encourage the use of materials with recycled content, so as to reduce environmental impacts associated with the use of virgin materials.

Compliance Options:

Select materials having recycled content such that the total recycled content constitutes atleast 20% of the materials used in the site.

Points are awarded as below:

Percentage of materials with recycled content	Points
≥ 20%	1
≥ 30%	2

Notes:

- *Material Cost = Total Cost – (Labour Cost + Installation Cost).*
- *If Labour and Installation cost is not known, the default material cost should be considered as 60% of the total cost of the component.*
- *Cost of electrical, mechanical & plumbing - equipment, systems and appliances should not be considered in the total material cost.*
- *Temporary materials such as materials used for form-work, scaffolding etc., should not be considered for credit calculations.*

Documentation Required:

New Parks/ Gardens:

- Calculations indicating the percentage of recycled materials (in terms of cost) with respect to the total materials cost of the project.
- Manufacturer letters indicating the percentage of recycled content in materials procured.

Existing Parks/ Gardens:

- A copy of organisational policy for use of materials with recycled content for construction and landscape areas, in case of any renovation.

Rapidly Renewable Materials and Certified Wood

MS Credit 5

Points: 1-2

Intent:

Minimise the use of virgin wood, thereby encourage responsible forest management.

Compliance Options:

Ensure atleast 50% of wood based materials (by cost) used in the park/ garden are:

- ❖ Rapidly Renewable

(AND/ OR)

- ❖ Wood certified by Forest Stewardship Council (FSC) or Programme for the Endorsement for Forest Certification (PEFC) or equivalent.

Points are awarded as below:

Percentage of Rapidly Renewable Material/ Certified Wood	Points
≥ 50%	1
≥ 75%	2

Notes:

- *Material Cost = Total Cost – (Labour Cost + Installation Cost).*
- *If Labour and Installation cost is not known, the default material cost should be considered as 60% of the total cost of the component.*
- *Cost of electrical, mechanical & plumbing - equipment, systems and appliances should not be considered in the total material cost.*
- *Temporary materials such as materials used for form-work, scaffolding etc., should not be considered for credit calculations.*

Documentation Required:

New Parks/ Gardens:

- List of all wood applications in park/ garden.
- Applications where rapidly renewable materials (and/ or) certified wood by FSC/ PEFC/ equivalent are used.
- Calculations indicating the percentage of rapidly renewable material (and/ or) certified wood, to the total cost of new wood used in the project.
- In case certified wood is sourced, provide manufacturer CoC certificate and purchase invoice indicating the CoC number & FSC wood type on invoice.

Existing Parks/ Gardens:

- A copy of organisational policy for use of rapidly renewable materials/ certified wood for construction and landscape areas, in case of any renovation.

Health & Well-being

Minimise Exposure to Tobacco Smoke

HW Mandatory Requirement 1

Intent:

Minimise exposure of non-smokers to tobacco smoke, so as to minimise adverse health impacts arising due to passive smoking.

Compliance Options:

Prohibit smoking in all common and exterior areas of parks/ gardens.

Documentation Required:

- A copy of 'no smoking policy'.
- A narrative describing the strategies implemented (eg. signages, brochures, guidelines, etc.,) on how 'no smoking' policy will be communicated to all the users/ visitors.
- Photographs showing 'no smoking' signages installed in the parks/ gardens.

Eco-friendly Vehicles, Onsite

Not applicable for Small Parks/ Gardens

HW Credit 1

Points: 1

Intent:

Encourage use of eco-friendly vehicles, so as to reduce pollution from automobiles.

Compliance Options:

Provide internal transportation from zone to zone , for senior citizens and differently abled people in the parks/ gardens, through low emission vehicles such as electrically driven vehicles or Compressed Natural Gas (CNG) or bio-diesel or any other environment friendly fuel driven vehicles.

Documentation Required:

- Details of eco-friendly internal transportation facilities proposed from zone to zone for senior citizens and differently abled people within the park/ garden.
- Parking plans showing provisions for electric charging facility/ alternate refueling stations.

Designated Spaces for Relaxation

Not applicable for Small Parks/ Gardens

HW Credit 2

Points: 2

Intent:

Design spaces for de-stressing and relaxation, to enhance the cognitive experience of users.

Compliance Options:

Provide quiet spaces such as spiritual centre, meditation centre etc., within the site area.

Documentation Required:

- A description on the spaces designated for relaxation within the park/ garden.
- Site plan highlighting the location of spaces designated for relaxation.
- Photograph(s) of spaces designated for relaxation.

Outdoor Spaces for Social Gathering

HW Credit 3

Points: 2

Intent:

Design interaction spaces to encourage social gathering.

Compliance Options:

Provide facilities such as amphi-theatre, club house etc., within the site area.

Documentation Required:

- A description on the outdoor spaces designed for social gathering within the park/ garden.
- Site plan highlighting the location of gathering spaces.
- Photographs of gathering spaces.

Facilities for Physical Activity

HW Credit 4

Points: 1-3

Intent:

Design spaces for physical activity to enhance the health of users.

Compliance Options:

Provide the following facilities within the parks/ gardens (*one point for each feature*):

- ❖ Play area for outdoor games
- ❖ Jogging tracks
- ❖ Tot-lots

Documentation Required:

- A description on the facilities designed for physical activity within the park/ garden.
- Site plan highlighting the location of facilities provided for physical activity.
- Photographs of such facilities provided for physical activities.

Low VOC Paints and Adhesives

HW Credit 5**Points 1-2****Intent:**

Encourage use of materials with low emissions, so as to reduce adverse health impacts on workmen & users.

Compliance Options:**❖ Paints & Coatings (1 Point)**

Use paints & coatings within the interiors which does not exceed the VOC content limit as specified in the table below:

Paints & Coatings	VOC Limit (g/L less water)
Non-flat (Glossy paints)	150
Flat (Mat) paints	50
Anti-corrosive / Anti-rust paints	250
Varnish	350

❖ Adhesives (1 Point)

Use adhesives within the interiors which does not exceed the VOC content limit as specified in the table below:

Adhesives	VOC Limit (g/L less water)
Glazing adhesive	100
Tile adhesives	65
Wood adhesives	30
Wood flooring adhesive	100

Documentation Required:*New Parks/ Gardens:*

- List of all applications of paints, coatings & adhesives used in the project.
- Test certificates or manufacturer cut-sheets indicating the VOC content (in g/l) in all paints, coatings & adhesives used.

Existing Parks/ Gardens:

- A copy of organisational policy on paints, coatings & adhesives that will be used, in case of any renovation.

Energy Efficiency

Energy Efficient Lighting

EE Credit 1

Points: 1-3**Intent:**

Enhance energy efficiency in landscape areas to reduce environmental impacts from excessive energy use.

Compliance Options:**❖ Lighting Power Density (2 points)**

Design exterior lighting, interior lighting (as applicable), common and parking area lighting such that Lighting Power Densities (LPD) are at least 10% efficient than LPD requirements prescribed in ECBC, Section 7, ECBC for LPD requirements in interior & exterior areas.

Points are awarded as below:

Percentage of reduction of LPDs designed	Points
≥ 10%	1
≥ 20%	2

AND/ OR**❖ Lighting Controls (1 point)**

At least 50% of the exterior & common area non-emergency lighting such as pathways, landscaping, surface and covered parking, street lighting, staircases should have one of the following:

- Timer controls for applications such as street lights, fountains, focus lights etc.,
- Occupancy/ Motion sensors.

Documentation Required:

- A narrative describing the lighting designed within the park/ garden.
- LPD calculations for all exterior areas, interior areas (as applicable), common & parking areas.
- List of lighting controls installed in different areas along with their photographs.
- External lighting plan showing all the lighting fixtures and controls.

Energy Efficient Pumps & Motors

EE Credit 2

Points: 2-4

Intent:

Enhance energy efficiency in landscape areas to reduce environmental impacts from excessive energy use.

Compliance Options:

Ensure that pumps & motors have a minimum BEE 3 star rating (or equivalent standard), for all landscape applications

Points are awarded as below:

Minimum BEE star rating for all Pumps & Motors	Points
3 Star	2
4 Star	4

Documentation Required:

- List of all installed pumps and motors with make & model.
- Manufacturer cut-sheets of all pumps & motors highlighting the BEE star rating or equivalent standard.

On-site Renewable Energy**EE Credit 3****Points: 1-4****Intent:**

Encourage use of renewable technologies to reduce dependence on fossil fuels.

Compliance Options:

Install renewable energy systems to generate power through solar, wind, bio-mass/ bio-gas or any other forms of renewable energy for atleast 1.5% of the annual energy consumption of landscape applications.

Points are awarded as below:

Renewable energy as a percentage of total annual consumption for landscape applications	Points
1.5%	1
3.0%	2
4.5%	3
6.0%	4

Documentation Required:

- Details of all renewable energy systems installed for landscape applications.
- Calculations indicating the percentage of total annual energy consumption catered through renewable energy systems.
- Manufacturers cut-sheets and photographs of renewable energy systems.

Operation & Maintenance

Plan for Sustainable Landscape Maintenance

OM Mandatory Requirement 1

Intent:

Ensure sustainable maintenance of the park through proper systems in place.

Compliance Options:

Have a landscape maintenance plan (OR) contract in place, to manage the site and landscape features such as rain water storage & reuse systems, irrigation systems, plants, invasive species, organic waste materials and soil management.

Documentation Required:

- Site maintenance plan or contract with third party vendor that will be implemented to manage the site features such as rain water storage & reuse systems, irrigation systems, plants, invasive species, organic waste materials and soil management.

Segregation of Waste, During Operation

OM Mandatory Requirement 2

Intent:

Facilitate segregation of waste, so as to prevent such waste being sent to land-fills.

Compliance Options:

- ❖ Provide de-centralised multiple collection areas in the park/ garden for the following waste:
 - Paper
 - Plastic
 - Food waste

AND

- ❖ Provide centralised storage area to ensure proper collection and disposal.

Documentation Required:

- A narrative describing the strategies implemented to segregate the various types of waste at source and its disposal
- Site plan showing the location of decentralised and centralised waste segregation bins in the park/ garden.
- Photographs of centralised and de-centralised waste segregation & collection bins.

Water Use Monitoring

OM Credit 1

Points: 1

Intent:

Ensure continuous water use monitoring system, so as to enhance the water performance.

Compliance Options:

Provide water meters in the park, to monitor the following applications, as applicable:

- ❖ Irrigation water
- ❖ Captured rain water reuse
- ❖ Treated water reuse
- ❖ Any other major source of water consumption such as swimming pools, water fountain, municipal water, etc.,

Documentation Required:

- A description on the water meters installed in the park/ garden.
- List of installed water metering systems in the park/ garden.
- Single line diagram showing the location of water metering systems/ equipment installed.
- Manufacturer cut-sheets/ brochures and photographs of the installed water meters.

Energy Use Monitoring

OM Credit 2

Points: 1

Intent:

Encourage continuous energy use monitoring, so as to enhance energy performance.

Compliance Options:

Provide energy meters in the park, to monitor the following applications, as applicable:

- ❖ Lighting
- ❖ Motors & pumps
- ❖ Renewable energy systems

Documentation Required:

- A description on the energy meters installed in the park/ garden.
- List of installed energy metering systems/ equipment in the park/ garden.
- Single line drawing showing the location of energy metering systems/ equipment installed.
- Manufacturer cut-sheets/ brochures and photographs of the installed energy meters.

Organic Waste Management

OM Credit 3

Points: 1-2

Intent:

Ensure effective organic waste management, so as to prevent waste being sent to land-fills.

Compliance Options:

- ❖ Install on-site waste treatment system for treating atleast 50% of the organic waste generated in the park.

AND

- ❖ Reuse the output generated from such treatment system within the park

Points are awarded as below:

Percentage of organic waste treated onsite	Points
≥ 50%	1
≥ 95%	2

Documentation Required:

- Narrative describing the installed organic waste treatment system.
- Site plan highlighting the location of installed on-site organic waste treatment system.
- Calculations indicating the amount of organic waste generated and treated onsite.
- Photographs showing the installed organic waste treatment system.

Design for Accessibility, Safety and Hygiene

OM Credit 4

Points: 1

Intent:

Institute a system within the park for easy accessibility, safety and hygiene of users.

Compliance Options:

- ❖ Develop a map and install signages in multiple locations highlighting entry/ exits, to create easy accessibility within the park.
- ❖ Install signages for safety with components such as defined spaces & access control, natural surveillance with lighting, walkways, visibility & sight lines.
- ❖ Install signages in multiple locations requesting users/ visitors not to litter and spit on the plants.

Documentation Required:

- A narrative describing the measures implemented in design for accessibility, safety and hygiene in the park/ garden.
- A site plan highlighting the location of signages provided for accessibility, safety and hygiene.
- Photographs of maps and signages installed within and near entrances of the park/ garden.

Awareness and Education on Sustainability

OM Credit 5

Points: 2

Intent:

Communicate the importance and benefits of landscape to influence occupants' behavior, within the park and beyond.

Compliance Options:

Provide educational or interpretive elements to help users and visitors to understand how on-site sustainability features can be applied to off-site situations and contribute to their environmental-friendly behaviour.

Documentation Required:

- A narrative describing the measures implemented for awareness and education on sustainability, in the park/ garden.
- Landscape plan highlighting the location of awareness and educational features/ signages provided in the park/ garden.
- Photographs highlighting the awareness and educational features/ signages provided in the park/ garden. Signages may include details such as history of park, names of plant species & their benefits.

Control & Manage Invasive Species

OM Credit 6

Points: 1

Intent:

Develop and implement a management plan for control & removal of invasive species and limit damage to local ecosystems.

Compliance Options:

Have a site management plan in place covering the control and management techniques of invasive species.

Documentation Required:

- Site maintenance plan describing methodology that will be adopted to control and manage invasive species in the park/ garden.

Organic Fertilisers

OM Credit 7

Points: 1-2

Intent:

Encourage use of eco-friendly fertilisers, to minimise impact on soil, flora & fauna.

Compliance Options:

Use organic fertilisers for atleast 50% of the total fertiliser requirement for landscape.

Points are awarded as below:

Percentage of Organic fertilisers used	Points
≥ 50%	1
≥ 75%	2

Documentation Required:

- Details of organic fertilisers used in the park/ garden.
- Calculations indicating the percentage of organic fertilisers used and total fertiliser requirement for landscape.

Organic Pesticides

OM Credit 8

Points: 1

Intent:

Encourage use of eco-friendly pesticides, so as to reduce the use of chemicals and its associated environmental impacts.

Compliance Options:

Use organic pesticides for 100% of landscape requirements.

Documentation Required:

- Details of organic pesticides used in the park/ garden.

Training of Operation & Maintenance Staff

OM Credit 9

Points: 1

Intent:

Educate the operational & maintenance staff on sustainable landscape maintenance.

Compliance Options:

- ❖ Provide periodic class room training to cover atleast 75% of operation and maintenance staff of the park, on sustainable landscape maintenance.
- ❖ Demonstrate that atleast 3 programmes have been conducted in a year.
- ❖ Document the results achieved through the training programme.

Documentation Required:

Details of training program such as the type & structure of training program, specific topics, trainers and number of people covered.

Feedback from Users & Visitors

OM Credit 10

Points: 1

Intent:

Institute a system to seek feedback from users & visitors, thereby creating an opportunity for continuous improvement.

Compliance Options:

Enhance the user experiences by collecting improvement feedback (for every six months) and initiate necessary corrective action plan.

Documentation Required:

- A narrative on feedback system initiated in the park/ garden.
- Sample feedback form that will be used to collect suggestions from users/ visitors.
- Corrective action plan that will be initiated in case the users/ visitors of landscape are dissatisfied.

Innovation & Design Process

Innovation and Design Process

ID Credit 1

Points: 1-4

Goal:

Provide design teams and projects the opportunity to be awarded points for exceptional performance above requirements set by the IGBC Green Landscape rating system and/or innovative performance in Green landscape categories not specifically addressed in the IGBC Green Landscape rating system.

Compliance Options:

Credit 1.1: Innovation and Design Process

Identify the intent of the proposed innovation credit, the proposed requirement for compliance, and the proposed documentation to demonstrate compliance, and the design approach used to meet the required elements.

Credit 1.2: Innovation and Design Process

Same as credit 1.1

Credit 1.3: Innovation and Design Process

Same as credit 1.1

Credit 1.4: Innovation and Design Process

Same as credit 1.1

❖ The following options can be considered for credit points under innovation & design process:

- Exemplary performance under any of the base credits. The compliance should significantly exceed the next incremental or double the threshold percentage. (please refer to Exhibit A).
- Innovative strategies or measures not covered in the IGBC Green Landscape rating system.

Notes:

The project should meet the following criteria for achieving an Innovation point:

- *Quantitative performance improvements (comparing a baseline and design case).*
- *Strategy must be significantly better than standard sustainable design practices.*

- *Measures must be voluntary. Measures that are mandated by the local bye-laws and not addressed in the rating system, are not eligible for Innovation.*

Documentation Required:

- A narrative describing intent, requirements, potential strategies and technologies adopted in the respective innovation credits. Strategies adopted must be significantly better than standard sustainable design practices.
- Other supporting documents such as drawings, calculations, photographs, illustrations, cut-sheets, test reports, etc., as applicable.

Exhibit A - List of Base Credits eligible for Exemplary Performance

Site Selection and Planning:	
SPM Credit 1	Natural topography: 40%
SPM Credit 5	Green Area Ratio: 90%
SPM Credit 6	Heat Island Effect, Non Roof Areas: 95% (Vegetation)
Selection of Species for Landscape:	
SSL Credit 1	Turf Design: 60%
SSL Credit 2	Native Species: 45%
SSL Credit 3	Drought Tolerant Species: 50%
SSL Credit 4	Species to Attract Habitat: 60%
SSL Credit 5	Species to Repel Mosquitoes: 75%
SSL Credit 6	Species for Local Food Production: 15%
Water Conservation:	
WC Credit 1	Rainwater Harvesting, Non-roof: 40%
WC Credit 4	Reuse treated waste water, Onsite & Off-site: 60%
Material Selection:	
MS Credit 1	Handling of Waste, During Construction: 95%
MS Credit 2	Reuse of Salvaged Materials: 12.5%
MS Credit 3	Local Materials: 95%
MS Credit 4	Materials with Recycled Content: 40%
MS Credit 5	Rapidly Renewable Materials and Certified Wood: 95%
Energy Efficiency:	
EE Credit 1	Energy Efficient Lighting: 30%
EE Credit 2	Energy Efficient Pumps & Motors: 5-Star BEE Rated Pumps & Motors
EE Credit 3	On-site Renewable Energy: 7.5%
Operation & Maintenance:	
OM Credit 7	Organic Fertilisers: 95%

IGBC Accredited Professional

ID Credit 2

Point: 1

Goal:

Support and encourage the involvement of IGBC Accredited Professional in the green landscape project.

Compliance Options:

Atleast one principal participant of the project team shall be an IGBC Accredited Professional (IGBC AP).

Documentation Required:

A copy of IGBC AP certificate of principal participant of the project.