



**ARCASIA COMMITTEE FOR
GREEN & SUSTAINABLE ARCHITECTURE (ACGSA)**

COUNTRY REPORT 2017

SRI LANKA INSTITUTE OF ARCHITECTS

Presented by:

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GREEN AND SUSTAINABLE: "The National Agenda

- Standards for reducing energy and CO2 emissions in buildings.
- Standards for maximizing natural light and ventilation, while minimizing heat gain.
- Standards to be maintained in designing of buildings with respect to resistance to prevalent natural disasters like landslides, coastal erosion and flooding.
- Protection of the country's Cultural and Natural heritage in built environment and natural scapes, to preserve and foster National and Cultural identity.
- To establish targets for reduced water consumption in buildings.
- To establish controls and alternatives in the use of harmful substances and health hazards in building construction work:
 - Phasing out the use of Asbestos related building products.
 - Preventive systems regard storm water stagnation leading to harmful mosquito borne deceases.
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- To incentivize sustainability achievements in buildings, and recommend post occupational energy audits, ensuring planned targets are achieved and maintained.
- To formulate research, data, and audits on existing buildings with respect to energy footprints and sustainability.
- To formalize and fine-tune the prevalent Green building rating tools used in the country.
- to ensure Sustainable zoning and land use and protect bio diversity, in National Physical Planning policy.
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- In this regard the **SLIA**, in conjunction with the **Sri Lanka Green Building Council**, which includes several Architects in its hierarchy, have played an active role, and hopes to continue to work closely with the government to further the green agenda in the country's construction and development projects.

THE ARCHITECT: "The Prime Driver of Sustainability."

- We have identified the Architect as the prime driver of Sustainability, and are working to stimulate a demand for Architecture that delivers environmental, social and economic value:
- The new “triple bottom line of architecture”
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- **Environmental**
- **Social**
- **Economic**
- **GREEN AND SUSTAINABLE**
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- It is increasingly clear Architects can influence the sustainability of project outcomes only if, and when they integrate their traditional creative and technical skills with an up-to-date understanding of environmental, social and economic inputs.
- The aim of the SLIA through the SLACGSA is to kick start processes that can help Architects build sustainability into practice, under the guiding principal of Sustainable Architecture

GREEN AND SUSTAINABLE ARCHITECTURE: "The Guiding Principles"

- Designing within environmental limits:
- Respecting the limits of the environment, and ensuring the country's assets, including land and natural resources, are conserved and protected for future generations.
- Integrating Tradition and Culture with sound Science:
- Ensuring an enduring policy is developed and implemented on the basis of strong scientific evidence, sympathetic with indigenous social and cultural practices.
- Ensuring a strong, healthy, and just society:
- Meeting the diverse needs of all people and communities, while promoting personal well - being, social inclusion, and equal opportunity across all social strata.
- Achieving a Sustainable economy:
- Building a strong, stable and sustainable economy which provides prosperity and opportunities for all where, efficient resource use is rewarded and incentivized, and waste and pollution, discouraged and penalized.
- Promoting Good Governance:
- Promoting participatory systems of governance in all levels of society, where people are co-opted into an active participatory role with their natural and built environments.
- Encourage Architects to work towards a base minimum of environmental standards, in all projects. Clients may seek to differentiate their buildings beyond the minimum standards, for reasons of their own commitments to Corporate Social Responsibility.
- Protecting the nation's Traditional Heritage in Built Environment and Natural landscapes:
- Architects are envisaged taking a lead role in advising clients, and society, on the protection of environment that has heritage value and cultural significance.

GREEN AND SUSTAINABLE ARCHITECTURE: “How does the Architect respond to the challenge in practice?”

- Our responses have to be diverse, and would necessitate new thinking, and moving out of our architectural comfort zone.
- It is important to note that Design and Place making is still the Architect's responsibility and forte.
- However it is clear, the best examples and results point to an integrated approach, combining scientific knowledge and technology, with an understanding of the design principles and workings of indigenous systems of building.
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- The first step is always the hardest.
- It means addressing and acknowledging, the environmental, social, and economic benefits of Sustainable Design:
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- Building Design Optimization, Sustainability and Functional efficiency into project briefs.
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- 'Learning from Tradition' with creative re-applications to traditional sustainable building systems.
- Encouraging Passive Design approaches as base standards in practice, combined with integrated, renewable energy sources.
- This is proven as reaping substantial dividends in reducing energy footprints of buildings.
- Design and early specification of building elements that support solar shading and passive cooling. Enabling data to be used for building environmental modeling and simulation.
- The use of state of the art computer software for Building Information Modeling or BIM integrated with CAD.
- These tools, properly used can lead to great benefits in creating sustainable practice platforms, enabling:
- Collaborative working between project teams to achieve sustainable outcomes for practices.
- Monitoring of design environmental targets, while producing early visualizations for clients.
- Measurement of whole-life costs and Life Cycle Analysis, making it easier to convince clients to opt for green and sustainable solutions.
- Facilitating management teams to measure actual performance and record future changes and upgrades.

Building Green and Sustainable: “The SLIA’s role “.

- The SLIA is working to facilitate Architects in developing a practice platform for achieving sustainability goals in projects. We plan to achieve this through several short and long term strategies.
- **Short Term Strategies:**
 - Creating an ongoing data base of sustainable building projects, and construction.
 - Enabling the sharing of building performance data, promoting peer review, where Architects can access information on building performance, including sustainability targets and outcomes.
 - Encourage Architects to develop a practice platform which includes organized project monitoring.
 - Encouraging Young Architects to become Accredited Green Professionals
 - Where Architects and Contractors stay involved with buildings beyond Practical Completion helping fine - tune systems, and review building performance data.
 - Encouraging CDP on sustainability issues.
 - Knowledge development is important for practices to deliver sustainable projects.
 - Encouraging and helping Architects to develop a 'Green Overlay' as a simple set of adjustments to each traditional Work Stage of the Plan of Work.
 - Thus helping to engage clients in Sustainable design at an early stage of the project.
 - Creating a New Award Category in the SLIA Award scheme, this rewards outstanding examples of Sustainable Architecture.
 - Working with the government & private sector to encourage SLIA monitored Design competitions on Sustainable Architecture.
- **Long Term Strategies:**
 - A comprehensive study and documentation archive of traditional building systems, materials, and water use. Accumulating the rich source of historical information available.
 - Re-evaluation of the educational curricula with respect to Sustainable Architecture at P1, P2 levels, and P3, the professional examination level.
 - Working with the government and nongovernmental organizations in formulating National policy on Sustainable development.



**Sri Lankan architects –
green tradition
originated in late 60's....**

**Kandalama Hotel -
Geoffrey Bawa**



Sri Lankan architects – green tradition



Polontalawa Estate Bungalow

Bawa and Plesner



Mirissa House –

Pradeep
Jayewardene



Roof top, grid tie solar PV system with a total capacity of 29kW



Community involvement projects through “Think Green Initiative” and School wide environmental programs such as reduce, reuse and recycle (3R)



Head Quarters, Brandix Lanka Limited Colombo 03

Archt Murad Ismail

Completely sealed, double glazed glass building with a layer of argon in between, giving the building an ETTV of 26.9 W/m^2

The building has been equipped with Sri Lanka's first oil-free, magnetic bearing chiller, and the air distribution system uses low power consuming fan coil units connected to motion sensors





**National School of Business
Management University (NSBM) –
Pitipana – Archt ECL**



Low ETTV and RTTV Value of building façade and roofs

Use renewable Energy (Solar Power)

Vertical greenery to cut down the radiation heat gain

Site greenery provision with herbal plants

Recycle water use for landscaping



Aliya Resort & Spa Sigiriya

Reduced Heat Island
Effect, Roof and Non-
Roof

Proper Environment
Management Plan

**Gold
Rated**



Using low emitting materials at regularly occupied spaces

Eco Huts, Remarkable Brick Works, Paddy Museum, Auvedic Spa and etc.to ensure cultural identity

On site waste water treatment



Hatton National Bank Jaffna Branch

Archit Shayan Kumaradas

15kVA solar PV system

Double screen on east and west
sides walls to control sunlight

100% vegetated garden in the roof
terrace



Vario Systems Electronics (Pvt) Ltd Badalgama

Archt Sanjaya Jayawardena

Soil erosion is minimized by placing coconut trees in strategic locations

Reduced site disturbances

Storm water management by developing a natural pond



Platinum
Rated



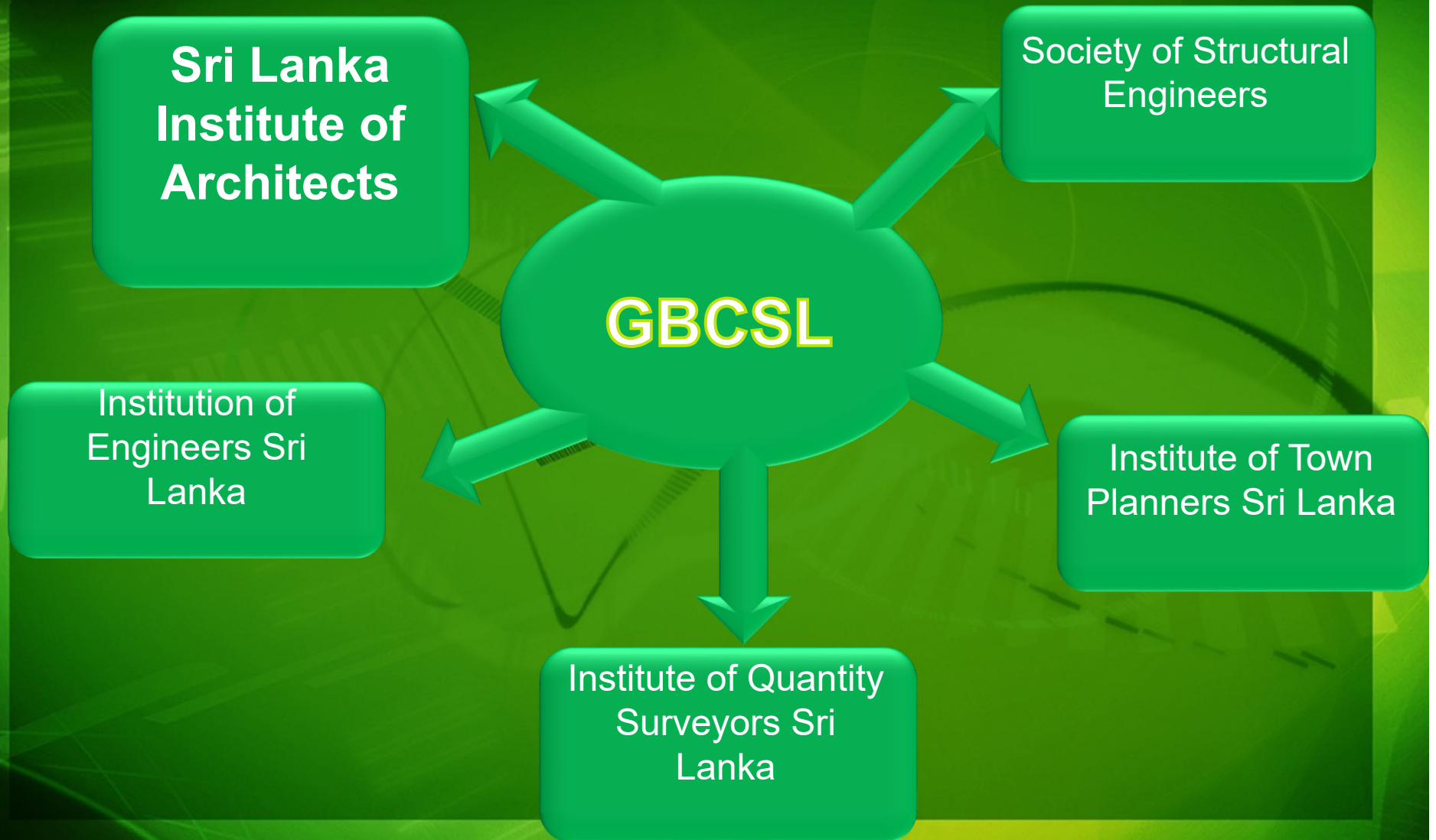
Heat island effect -Use natural shading

Use of Zinalume sandwich panel roof which is reusable and recyclable

CFC reduction in HVAC & R Equipment

Use of renewable energy –solar power

SLIA links with GBCSL



- A green environmental rating system applicable to Sri Lanka has been formulated as a “home-grown system” with all norms acceptable to leading rating systems, after conducting research projects and workshops by an Expert Committee appointed by the GBCSL, with the assistance of national and International experts
- **GREEN^{SL}®** Rating System is developed through an open, consensus-based process under the supervision of the Green Environmental Rating and Life Cycle Assessment Committee which is composed of a diverse group of practitioners and experts representing a cross-section of the construction industry

Marking system for GBCSL green awards

Management

4 Points

Indoor
Environment
Quality

13 Points

Innovation and
Design Process

4 Points

Sustainable Sites

25 Points

Material and
Resources

14 Points

Social & Cultural
Awareness

4 Points

Water Efficiency

14 Points

Energy and
Atmosphere

22 Points

Ratings

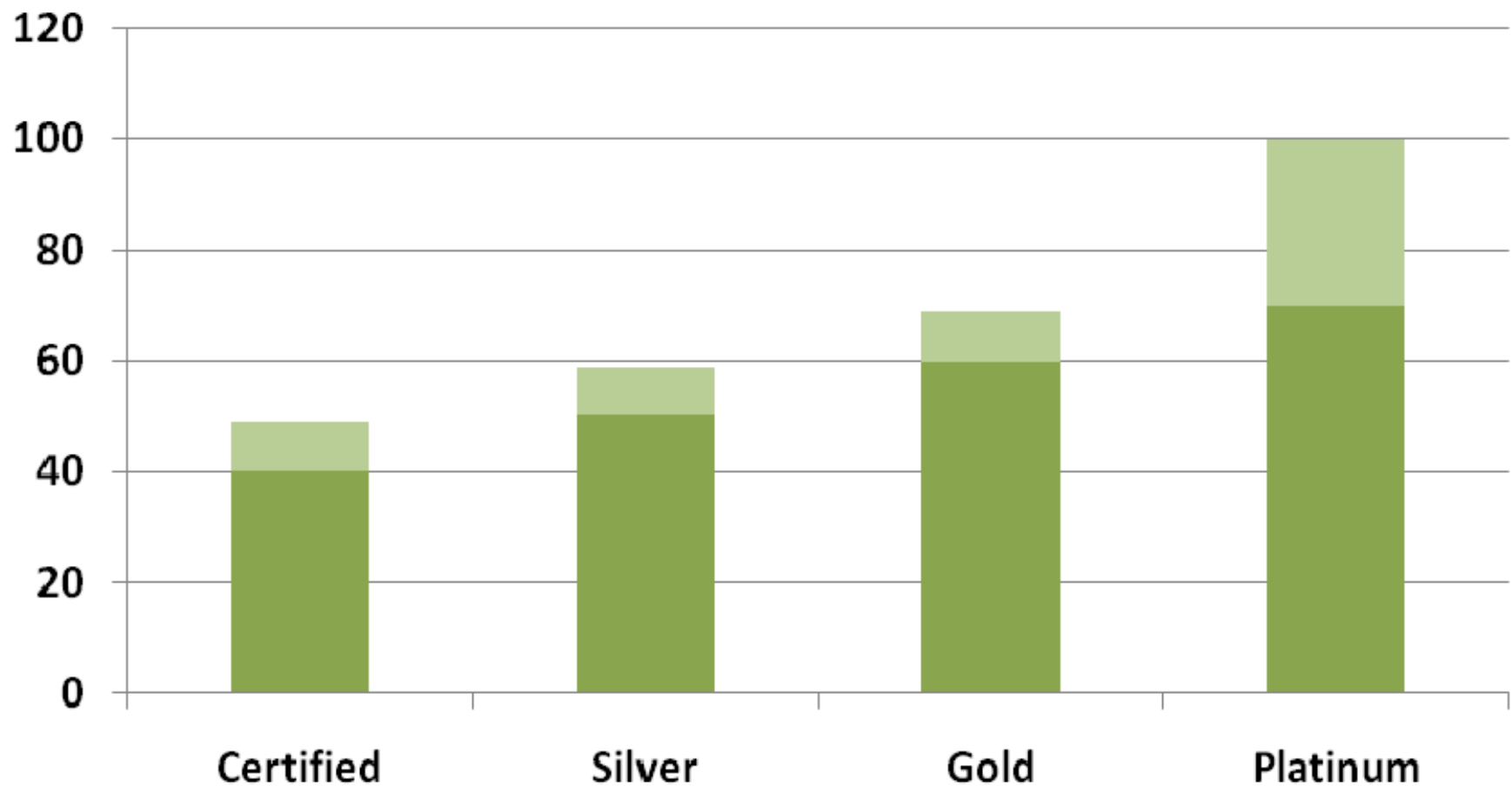
40 – 49 Certified

50 – 59 Silver

60 – 69 Gold

70 & above Platinum

GREENSL® Projects - Marking System



ACTIVITIES OF GBCSL IN COLABORATION WITH SLIA

- Associate Professional Training Courses
- **GREEN^{SL}®** Labelling System for Sustainable Building Materials And Products (**GLS[®]**)
- Green Talks
- Green Contractor Certification
- Green Walks
- **GREEN AWARDS**

THANK YOU

Sri Lanka
Institute of
Architects

