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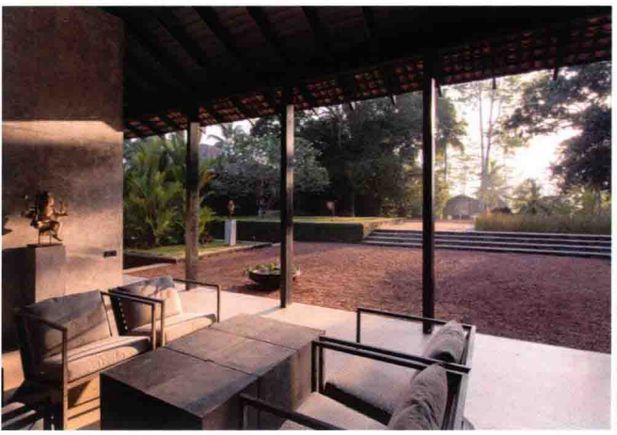
Contents



HOUSES ON THE EDGE

CITY HOUSES

New Directions in Tropical Architecture in Sri Lanka

Robert Powell

In February 2014, accompanied by David Robson and photographer Sebastian Posingis, I embarked on a journey to chart the development of private houses in Sri Lanka in the early 21st century. During the civil war, there was not a lot of money around for building, but several architects did produce good work in times of austerity. Since then, the ongoing peace process has seen a rise of confidence in the urban middle classes and a large number of private houses have resulted. These include urban residences in Colombo, villas in the suburbs, beachfront homes on the southern coast and rural retreats inland — many of which are showcased in this book.

Twenty-six houses represent the work of 21 architects most of whom are 'home grown'. All were born after independence in 1948. Ten obtained their first degree from the Department of Architecture at the University of Moratuwa (UOM), while five qualified via the part-time course at the City School of Architecture (CSA) within the Sri Lanka Institute of Architects in Colombo. Five of the architects pursued undergraduate or postgraduate studies in the UK, at University College London, University of North London, University of East London or the University of Brighton and one studied in Finland.

Nineteen of the houses are designed by the 'next generation' of Sri Lankan architects all of whom commenced in practice after 1998, the year that Geoffrey Bawa's practice effectively closed. The architects include Godridge Samuel (52), Vinod Jayasinghe (51), Amila De Mel (50), Channa Daswatte (49), Thisara Thanapathy (49), Ranjan Aluwihare (48), Ragi Kadirgamar (47), Kumudu Munasinghe (45), Pradeep Kodikara (45), Palinda Kannangara (44), Philip Weeraratne (44), Sanath Liyanage (43), Shayan Kumaradas (42), Waruna Gomis (37) and Sudesh Nanayakkara (36).

There are four houses by architects who span the Bawa-era and the 'next generation'. C Anjalendran (63), Vijitha Basnayaka (60) and Madhura Prematilleke (57) have been influential teachers in the two architectural schools in Sri Lanka in addition to being practicing architects. Most of the younger generation has encountered them (and in some cases been profoundly influenced by them) in their formative years. While Anjalendran 'carries the torch' for Bawa as illustrated in the Malalasekara House and the Ranatunga House, Prematilleke and Basnayaka have a markedly different approach to design as illustrated in the Green House at Digana and the Kishan Perera House in Pelawatte.

The remaining three houses are designed by two internationally respected Japanese architects, 57-year-old Shigeru Ban and Tadao Ando (72), both winners of the prestigious Pritzker Prize for Architecture, and the renowned Australian architect Kerry Hill (71), winner of an Aga Khan Award for Architecture and the Gold Medal of the Royal Australian Institute of Architects.

A House in the Tropics

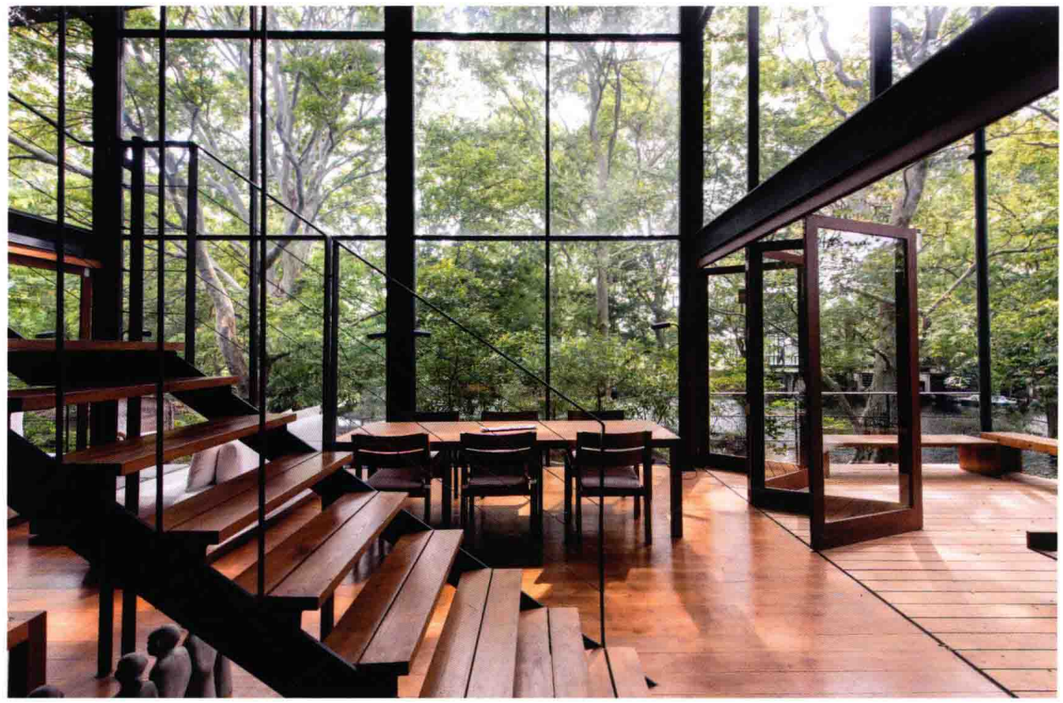
During a meeting with Geoffrey Bawa in 1995, we talked at length about design in the tropics and he suggested a number of criteria by which to assess a successful dwelling design. "Life in Ceylon (he used the former name)," he said, "is about living out-of-doors." He was referring to the in-between spaces in the form of terraces, shaded verandahs and balconies that typify the best houses in the tropics. He also asserted that, "a house in the tropics is about living in close proximity to the natural world and one should not destroy any substantial trees on the site." Then Bawa added another criteria that is more problematic. "A house in the tropics," he said, "should be designed with the minimal use of glass."

The Cinnamon Hill House (above), designed by Bawa and completed in 1993, exemplifies this approach. Revolving around a tall open-sided living space facing southeast, Bawa manipulated the plan, arranging walls and columns so that existing trees were retained — one even grows in the bathroom! Glass is almost entirely eliminated and replaced by shutters and timber louvres, so that the interior is naturally ventilated. It is perhaps the simplest house I have ever encountered, certainly it made a huge and lasting impression upon me and established a benchmark by which I would thereafter judge every house in the tropics.

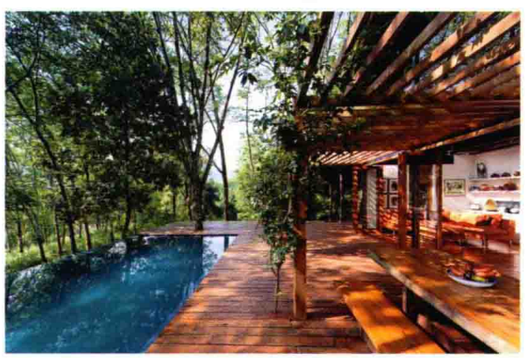
Over the course of the next decade, I gleaned other criteria. From the Indian architect Charles Correa I learned to appreciate the open-to-sky courtyard and what Correa refers to as "the blessings of the sky". Many of Correa's most potent architectural ideas were developed through the design of individual houses where "open-to-sky space is of crucial importance for it can make the difference between livable habitat and claustrophobia."[1] Correa emphasised "the complex manifestations of built form in a warm climate where between closed-box and open-to-sky there lies a continuum of zones with varying definitions and degrees of protection .... The boundaries between these various zones are not formal and sharply demarcated, but easy and amorphous. Subtle modulations of light, of the quality of ambient air, register each transition in our senses."[2]

Later, the Malaysian architect Jimmy C Y Lim reminded me of his simple strategy for designing houses in monsoon Asia. "We have an excess of sun, so I keep the sun out. We have lots of rain, so I attempt to keep

Page 1: Villa Vista designed by Shigeru Ban.
Page 2: The Green House at Eagles Ridge, Digana designed by Madhura Prematilleke overlooks the Victoria Dam.
Pages 6–7: High mountains and verdant rice fields create an idyllic setting for the Kalundewa Retreat at Dambulla designed by Sanath Liyanage.
Previous page: The two-storey Channa Daswatte House in Madiwela is only one room wide, therey encouraging the through passage of air.
Opposite top: The temperature in the Malalasekera House by C Anjalendran is reduced by the non-reflective surfaces of the garden.
Opposite bottom: The Kishan Perera house by Vijitha Basnayaka is planned around a tall open-to-sky atrium.
Above left and right: In the Cinnamon Hill House (1993) Geoffrey Bawa eschewed the use of glass.



Right: The Kalundewa Retreat by Sanath Liyanage is shaded by trees and cooled by a man-made lake.
Below: Sensible orientation and overhanging eaves cool the Siva and Vasuki House designed by Shayan Kumaradas.
Bottom: The surrounding trees and a timber pergola provide shade for the verandah in the Guava House by Ranjan Aluwihare.



the rain out. We need a lot of shade, so I provide it by having lots of trees. We consequently have lots of leaves so we should not have gutters as blocked gutters are useless. Because we are living in a hot, humid climate we should have cross-ventilation".[3]

The spirit of a house in the tropics is formed by merging the dwelling with its surroundings, thereby creating ambiguous and intermediary spaces. The garden thus provides non-reflective surfaces and serves the functional purpose of modifying the climate, reducing radiant heat and providing shade.

Geoffrey Bawa's initial criteria are thus expanded and a checklist for a house in the tropics would include:

- have a living/dining area which is the focus of the house and which is permanently open to external environment
- not destroy any substantial trees on the site and be in harmony with nature
- be designed with minimal glazing
- not have gutters
- be surrounded by a garden with non-reflective surfaces
- have wide overhanging eaves to provide shade
- have in-between spaces in the form of courtyards, verandahs, terraces and balconies
- have tall rooms to encourage convection cooling
- be naturally ventilated with permeable walls facing prevailing breezes
- be one-room deep with openings on opposite sides capable of being adjusted to create the *Venturi* effect.

The list is not entirely original or unprecedented, for as early as 1964 books such as *Tropical Architecture in the Dry and Humid Zones* by Maxwell Fry and Jane Drew[4] substantiated with technical data the validity of this model, much of it learned from the vernacular.

For residents of houses in Colombo there are other considerations. There is first the problem of dust, pollution and noise. It is arguably a necessity to combat these conditions with air-conditioners, at least in bedrooms. There are also problems of security that can be addressed by enclosing the site in a high wall. Another approach is to incorporate duality into the plan

arrangement where the street façade has the appearance of an exclusive enclosure while the façade facing the garden is comparatively open.

During a seminar I attended in Zanzibar in 1987, Hasan-Uddin Khan and Charles Moore introduced the notion of a house as a 'Fortress of Solitude' and argued that what makes the concept of home of the different typologies is that of retreat or solitude.[5] The notion of the house as a place for solitude is a recurring theme in the design of the houses in this book (see Pringiers House, pages 108–115 and Siva and Vasuki House, pages 70–77). Man seems to have a need for a place to be calm, quiet and to recreate oneself in a rapidly changing world. The checklist of criteria for a house in the tropics should therefore also include:

- in response to security issues, duality in the planning arrangements to give openness and direct access to a garden or court on one side with a closed and exclusive appearance on the public façade
- air-conditioning in selected areas of the house to overcome heat, humidity, noise, dust and pollution
- the use of shading and careful orientation to minimize the air-conditioning load
- the notion of 'retreat' or refuge
- increasing use of solar collectors and wind generators as their capital cost falls
- pools and fountains that contribute to cooling in addition to giving sensory pleasure.

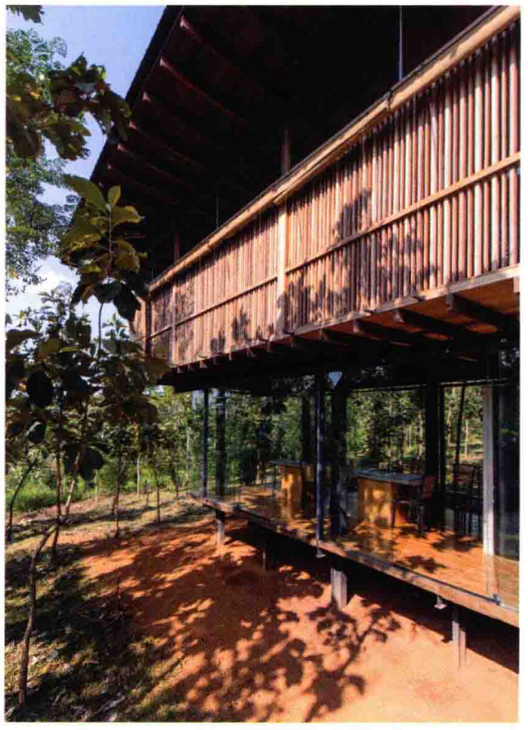
The latter point reminds me of an intervention by Geoffrey Bawa during the seminar in Zanzibar. "Even if one uses the simplest of materials," he said, "if these are arranged satisfactorily, and if a certain amount of thought is given to landscape it can give a sense of belonging and pleasure. Pleasure cannot be omitted .... It is as important as shelter from the rain."[6]

In selecting the houses for inclusion in this book the above criteria were constantly referred to and guided the choice. There is no attempt to prioritise the criteria but the houses that are featured fulfill most, if not all, of the requirements of an exemplary house in the tropics. Some are admittedly deficient in one area while excelling in others. Two important issues are the use of glass vis-à-vis air-conditioning and the importance of orientation.

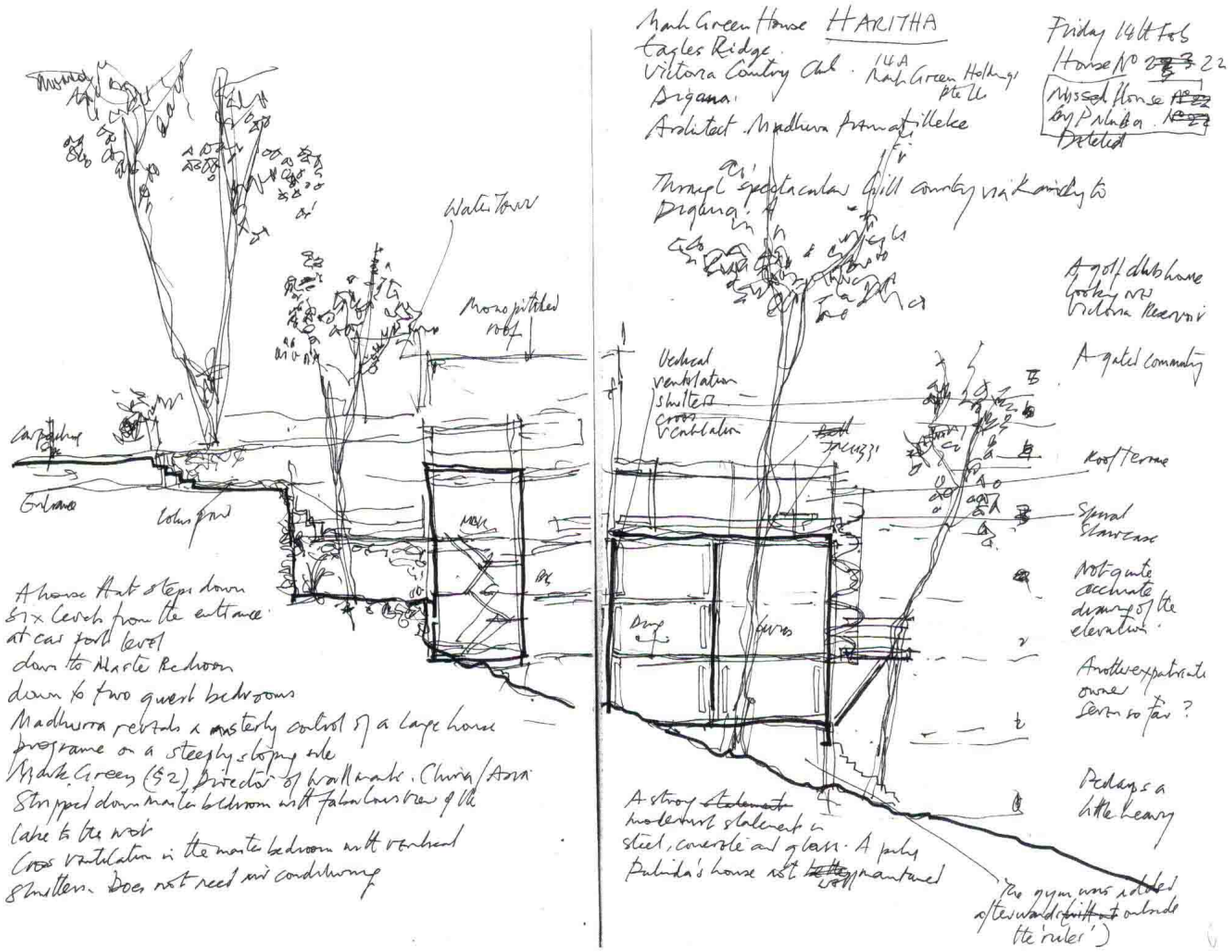
In many contemporary tropical houses glass is the ubiquitous material for any external opening. Glass keeps out the rain and by-and-large excludes flies, moths, mosquitoes, geckos, snakes, squirrels and monkeys. But the consequence is that it inevitably leads to the installation of air-conditioning. Air-conditioning solves many problems — it cools, it dehumidifies, it keeps out the insects — but it is hugely expensive both in terms of installation cost and in terms of energy usage and it cuts off the occupant of a house from the outside world. Many of the architects featured in this book are trying to resolve this dilemma.

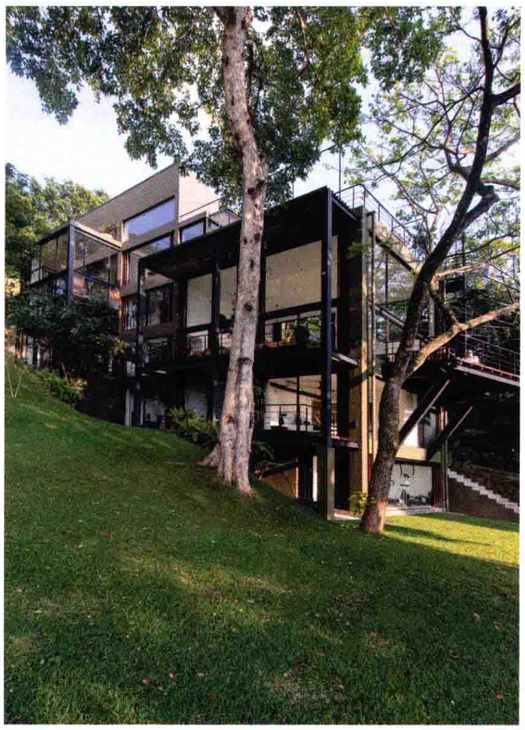
If glass is to be used extensively, especially in east- and west-facing elevations it must be shaded. There are several ways this can be done: for example, by retaining existing trees and/or planting swiftly growing trees that cut out the sun in the morning and the late afternoon. This approach is well illustrated in the Green House designed by Madhura Prematilleke (see pages 62–69). Or the glass walls can be shaded by the use of louvres or tats (split bamboo and fabric screens) on the outside of the glass. There are a number of exemplary houses in this book illustrating this solution including the Maddumage House designed by Thisara Thanapathy (see pages 86–91) and the Channa Daswatte House (see pages 132–139). It is important to note that Venetian blinds or tats on the inside of the glass wall are useless in preventing heat gain — solar heat has already penetrated into the house and blinds on the inside do nothing to prevent this.

Houses should be orientated to face the prevailing wind. In most cases in Sri Lanka this will be the south west and the north east. But it is important to exclude torrential rain, which comes with the southwest monsoon. This can be achieved, to some extent, by



Top: Openable shutters and minimal glass promote cross-ventilation in the Channa Daswatte House.
Above: The section of the Maddumage House by Thisara Thanapathy is designed to shade glass used on the ground floor.





wide extended eaves and by deep verandahs. This will not prevent entirely the ingress of rain, which can be almost horizontal at the onset of a thunderstorm, but it does help to mitigate the effect.

Geoffrey Bawa's answer was to "use over–hanging roofs, but his interiors could be dark"[7] and there were critics of this approach. In 1997 Madhura Prematilleke criticised the so-called 'umbrella aesthetic' that, he said, "carries with it an idealization of rural, usually feudal life. It is an ideology that generates architectural models with an inherent anti-urban bias."[8]

Sustainable Dwellings

Since 1998 there has been an ongoing debate about how to create an architecture which is contemporary (ie how to escape from the vernacular umbrella), but which is also environmentally efficient and ecologically responsible.[9] It is anticipated that the houses within these pages will contribute to the debate.

Arguably, the greatest challenge for architects in the 21st century is to design houses that are sustainable, reduce the need for fossil fuels, have a low carbon footprint and respect the existing ecology. The architects whose work is illustrated here are alert to this and in a variety of ways are addressing the issues.

C Anjalendran has developed a highly appropriate robust aesthetic illustrated in the Ranatunga House at Nawala and the Malalasekara House at Borella (see pages 206–213 and pages 164–171 respectively). His houses are remarkably low energy. They give more for less. Anjalendran has said that every tree retained on the site is equivalent to one air-conditioner. The Green House at Digana by Madhura Premitilleke works well on a number of levels and includes cross ventilation and shading by the retention of mature trees. The slender