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In a planet of our own - a vision of sustainability with focus on water

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Laurie Baker

A model for Sustainable Architectural Design

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Abstract

The paper showcase embedded dimensions of sustainability in Architect Laurie Baker's philosophy and practice of architecture through looking into his words and works. Sustainability, taken as a holistic concept here, is elaborated on ecological, economic, human, cultural and historical dimensions. Each of these dimensions has been supported through a Baker's quote with supporting work illustration. The background covers the post-independence dilemmas of choosing between revivalism and modernism. It then moves to the changing landscape of sustainability in architecture's practice and academia. Later through case demonstration, it suggest that the need of searching a relevant sustainable model for our own contextual needs of architecture can be met through Baker's philosophy.

Key Words: Sustainability, Architecture, Modernism, Laurie Baker

1. Introduction

'The idea of sustainability ... is our earliest, our primordial world cultural heritage.'
(Grober, 2012)

Through the years, India is witnessing her embedded sustainable practices vanishing away in the quest for development. The economic and media liberalization of 1990s further globalized consumption culture (Menon and Nigam, 2007). With intense consumer culture of imports (Das, 2002) and their ideology, their fetish and planned obsolescence, the 'self-reliance' dreams of Gandhi (1951) evaporated from mass consciousness. The emergence of new smart towns with shopping malls, glass façade buildings, and aluminum panels pretends to be cousins of glamorous and the Hi-tech architecture of the Metropolitans. This aspiring modernity experiences a regular conflict with the traditional lifestyle of the cities. It is not just a conflict between modern vs. tradition, but also a clear manifestation of formal vs. informal. Do these buildings reflect the current state of the big Middle Class,

which is often wearing western clothes but contain Indian soul? This fascination towards modern, global and foreign created an architectural culture whose cost can only be assessed in future histories. Perhaps, the concept of sustainability is a reaction to an over development of the material world.

2. Background

2.1. Postcolonial Architecture



Figure 1 Le Courbusier's Architecture, Capitol Complex, Chandigarh (Source: Author)

Post-independence, Nehru ignored the revivalist ideas like Gandhi's and Tagore's for modernistic vision icons like Chandigarh (Fig. 1) (Khilnani, 1999; Lang, 2000). Practice of this 'tabula rasa' approach is uncommon in the Indian history of architecture, as it could have only happened through an institutional will. The modernistic vision was justified through a projected need of creating an identity among the emerging powers of the world. Later, the staleness of its repetition and illogical adoption reached its peak during the end of the previous millennium when there was a paradigm shift in associated technologies. In the new century it was later stolen by impatient capitalist (Mehrotra, 2011) that made us see a glass façade based globalized architecture.

2.2. Changing landscape of 'sustainability'

Globally, the present day discourse on sustainability and sustainable architecture has primarily been Euro-centric, be it Rachel Carson's 'Silent Spring' (2000) or Brundtland Commission's 'Our Common Future'. The visions like 'Cradle to Cradle' (Braungart and McDonough, 2002) have been advocating sustainability in the design culture ecosystem.

In Architecture, there are theorists who have articulated critical issues on sustainability and illustrated its application in their own context like Renzo Piano, Glen Murcutt, Ken

Yeang etc. but their architecture may not necessarily be suitable for Indian needs. In Modern Architecture History canon, only the works from Post-Independent Indian architects like Correa and Doshi have found space, within Critical Regionalism (Frampton, 2007). The western theorists within the canon have hardly recognized the other alternate eco-friendly grounded practices.

However, along with academic conferences, the issue like sustainability is finding its voice and space in various institutions, studios and syllabus. Though, packaged like a consumer 'brand', the emergence of LEED (Leadership in Energy and Environmental Design) and GRIHA (Green Rating for Integrated Habitat Assessment) green ratings for the buildings are emerging within professional practices of architecture. Last few years have also witnessed many International and National Design Competitions on sustainability or its allied fields like ICHH (Rizvi College, Mumbai), NSDC (SPA Bhopal) and several annual events in NASA (National Association of Students of Architecture). Landscape architecture organizations like ISOLA (Indian Society of Landscape Architects) are actively talking about ecology in each of their annual conferences. The architectural conservation community forums are echoing the concern of social sustainability and continuity. In environmental studies, there is an established popular discourse with Centre for Science and Environment, Delhi taking a lead with their fortnightly Down to Earth.

3. Objective, Perspective and Methodology

One can see, Guha's (2014) observation, 'Age of Ecological Arrogance', is visible in our architecture, urban planning and cityscapes too. In last few decades, only a handful of practitioners have been able to walk the talk with an empathetic approach towards own context. In Architecture, Laurie Baker is one of the marvels that challenged the mindless material submission through his practice. The objective of this paper is to explore dimensions of sustainability in Baker's philosophy through looking into his words and works.

The advent of the new century has witnessed the problems regarding the environment and sustainability. Now, more than classified problems of sustainability we have solutions towards it. Often, these solutions are immediate and limited or they are cumbersome to implement. In the field of architecture, the contexts of these sustainable or 'green' practices are often misinterpreted. In academia and practice, the models of developed economies are copy-pasted without any critical or contextual modifications. The 'trophy' buildings in the post-liberal additions to the Indian cities are the perfect example of the brand of sustainability being abused by so-called 'green' accreditors. There is a need of redefining sustainability to include associated dimensions beyond its scientific and

statistical value. The sustainability in this paper is taken as a holistic concept, which includes (i) ecological, (ii) economic, (iii) human, (iv) cultural and (v) historical dimensions. However, in most of the discussed cases, the above dimensions are found integrated and inseparable.

Through various primary case studies by the author, revisiting original text by Baker and with review of secondary literature as reports and monographs including Bhatia (2000), the paper illustrates the various aspects of Baker's philosophy through his quotes (here assumed as a point of view) and its design demonstration. These quotes have been taken from www.lauriebaker.net. The author's education as an architect, its practice and then its teaching brings in the critical voice in the paper.

4. Laurie Baker and Sustainability: Words and Works

"... in 1943, Gandhi told Baker that his knowledge of western architecture would be of very little help in India, where the rural areas needed more attention than the cities. Gandhi gave Baker his idea of building houses, saying that the materials needed to build a house should be acquired from within 5 miles of the site. This idea was to have a great impact on the architect's life a few years down the line." (Bhatia, 2000)

Though being a foreigner, Baker adopted and adapted with India more than any other Indian. From the early days making chairs for leprosy patients in Chandakh, Uttarakhand, to building small little modest houses and community buildings in Kerala, his practices are visible proof of his understanding of culture, climate and context. He broke away from the typical approach of standardizing design. Not just through his own practice he contributed through various national level projects. As a reviewer, when a study of the conditions of a variety of the earthquake-hit villages in Garhwal was made by him and COSTFORD (The Centre of Science and Technology for Rural Development) after the three months of the disaster in eighties his mountain-life experience can still be referred to avoid similar disasters.

4.1. Ecological: Earth, the planet of our own

"I have never doubted that in a country like ours any of us has any right to squander or waste, or use unnecessarily money, materials or energy."

The Hamlet

The true personality of an architect is reflected in the way he design his own house. It is a manifestation of his character, principles and architectural beliefs. The construction process illustrates the above said quote by Baker that highlights the traditional and

natural way towards habitation and development. The Hamlet - Bakers' Residence at Trivandrum (Fig. 2) is the living example of Baker's philosophy.



Figure 2: Baker's own residence 'Hamlet' at Nalanchira, Trivandrum (Source: Author)

Over the years, the house witnessed an organic growth, from the multipurpose single room hut to the first structure at the hilltop and later additions following the contour downwards. Flexuous connections and access to each of the space flows along the architectural form. Most of the construction material came from rather unconventional sources over a period of time. Fish tiles from a palace, dormers and roofing wood from a dilapidated house, wood from a jetty and pieces of stone or tile, which he picked up, all juxtapose in harmony (Baker, 2000). The built form looks like grown from the ground.

In one of the other works, a booklet named "Rubbish by Baker", Baker explains the source, growth and re-growth of rubbish in today's environment. The black ink drawings present a scope for the simplest thinking towards sustainability in the form of very visible material, 'rubbish'.

4.2. Economic: Being Cost-effective

"The equation that a cost-effective house is a house for the poor, implying a bad looking house, can definitely be proved wrong. Isn't it the responsibility of the upper and middle classes to stop indulging in extravagance and make better looking houses instead?"

Slum Rehabilitation at Chengalchoola, Trivandrum

After 68 years of independence, poverty and housing are still our biggest problems. Baker's whole life went into creating houses for the masses. Seeing his economic skills over the practice of building he was offered many housing projects by the Government of Kerala. The Fisherman village, where he was able to bring a communal harmony through his architecture and Chengalchoola Slum rehabilitation project (Fig. 3 and 4), where he avoided a repetition based mass production culture followed by planners and architects, are the notable ones. These projects can be seen as a serious contribution to nation building as it caters the fundamental right of 'shelter' provided by Indian constitution.

Another reason is its appearance as beautiful exposed brick row houses, even in its current use, which has its no connotations with a slum. This scheme can also be seen as middle path to economic high-density high-rise and comparatively costlier high-density low-rise. The connection with the earth for each individual and family (Correa, 1987), the sense of community within cluster and open spaces created are the features of success for this particular scheme.



Figure 3 and 4: Chengalchoola Housing, Trivandrum (Source: Author)

Baker's work explains the importance of keeping our economic priorities right in a developing context of India. COSTFORD, founded to facilitate Alternative Technologies is still continuing the tradition of constructing cost effective houses and buildings.

4.3. Human: Respecting Individuality

"I never build for classes of people, HIG, MIG, LIG, tribals, fishermen and so on. But I will build only for a Matthew, a Bhaskaran, a Muneer, or a Sankaran."

Residence for Keith

Keith came back to India after spending more than half of his life in Canada as an established Economist. He came back specifically wanting to start a new life in India. With his life earning he was able to buy a big chunk of land in the rural outskirts of Trivandrum. In 1997, he met Baker and conceptualized 'Navyatra' meaning new journey as his residence (Fig.5). The first unanimous decision was to plant forest trees on the barren land. The seeds waited for natural water and then seasoned themselves into thick trees.

For Baker, every individual was unique. There was no bias towards his/her social, economic class rather there was an attempt to entertain the individual choices, habits and behavior. Each of his projects is an amazing mix of clients' requirement and his crafty and innovative response. Here, Keith's residence is complete reflection of his lifestyle. It doesn't use electricity and is totally dependent on nature's laws. The small animals and creatures, which may look wild to an urbanized mindset, are domesticated here. He says, "Baker combined the soul of client and soul of creator and creates something out of this

world". The eight other buildings in the campus are the part of a school's concept, which Keith wanted to start at the site.



Figure 5: Navyatra, Keith's Residence, Trivandrum (Source: Author)

After Baker's death he gave this campus to the Laurie Baker Center as a tribute to its Architect. The precinct buildings were re-conceptualized as Laurie Baker Centre of COSTFORD to perpetuate Baker's memory and vision. Now, through state's assistance it is actively promoting appropriate technology in construction and public works, including development of building materials and technology relevant to sustainable architecture.

4.4. Cultural: Incorporating Modernity

"We should remind ourselves that it is not 'Advancement' or 'Development' or 'Progress' to indulge in modern building materials and techniques at tremendous expenses and to no good effect when there is no justification or reason for their use, instead of older, simpler, inexpensive methods."

Centre for Developing Studies, Ulloor, Trivandrum, 1971

Though large part of Baker's life was spent in serving people through designing residences, he also exhibited his range of concepts in various functions, scale and dimension through this public building (Fig. 6) given to him in 1967. This institutional design accommodates functions from administrative office to residences and library to amphitheater.



Figure 6: Entrance Building at Centre for Developing Studies, Trivandrum (Source: Author)

Baker intelligently handled the modernity through his innovative solutions. This is best explained in various blocks of Centre for Developing Studies, where the institution wanted modern infrastructure. Using double walls, with a small gallery in between, he created a blanket for its users. Playful brick jaalis (fenestrations) facilitated not just the cross ventilation and day lighting but also projected a unique built-form character. Through this, he responded to then irregular power cuts and reducing the electricity bills.

When the Computer Centre came after 25 years of the Main CDS building. For him, challenge was not just designing a response towards a modern requirement, but was also to act harmoniously with existing forms, which were dancing through, as curved walls in the whole campus of Centre of Developing Studies. He again, skillfully, designed the double wall sections to reduce the heat gain for the rooms containing computing machines. This building is an example of Baker's innovative approach towards incorporating modernity and technological advancements, without surrendering to the readily available but unsustainable commercial solutions like air-conditioning.

4.5. Historical- Learning from Tradition and Vernacular

"Our modern, advanced scientific minds should know how to assess the merits and demerits of historical and factual evidence of the way people who have lived in a particular setting and climate, have coped with the problems which are still inevitably ours today."

Baker always respected the traditional wisdom and applied to his architecture. He always kept upgrading himself with more exposure to vernacular ways of doing things, be it his early years in Himalayas or later in the coastal Kerala. The architecture created by him echoes these values. Along with COSTFORD he created a set of documents and booklets (Fig.7) for the common people to refer. His illustrated document 'Mud' explains the whereabouts of mud as material, its structure, specific details and achievable simple forms. The 'Rural House Plans' explains the similar features of 'Mud' along with possible layout, roof forms and clusters etc. The 'Rural Community Buildings' explains the concepts further sample designs of small institutional functions like bank, library, offices, schools, hospital, auditorium etc. All of them illustrate some of the local and vernacular techniques of the construction with clearly mentioned "Do's and Don'ts".

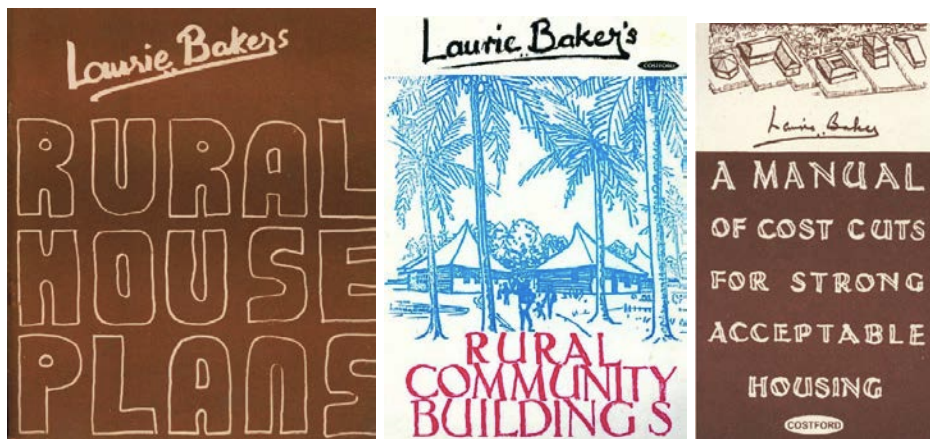


Figure 7: Small Booklets by Baker (Source: www.lauriebaker.net)

These small books can be a ready reckoner for not just students and architects in the region, but also the various individual and communities interested in knowing the rural building tradition. The documentation once again suggests that historical knowledge, as building traditions can be very useful for village economy, holistic development and sustainable futures.

5. Conclusion

The position and decision of Modern Architecture to neglect and ignore the traditional knowledge is not relevant for a country like ours where tradition is full of tested innovations. Like, other crafts and knowledge, habitat building and architecture are one of the areas where we have neglected everything about tradition in the name of modernity and practicality. With so much complex and often jargon consciousness around, it is the time is to realize the inspirations from self. Specially, when there is a breeze of sustainability in design environment, there is a need to come up with grounded, relevant and simple methods. Architect Laurie Baker's exhibited and practiced 'common sense' is a

boon for this century. Most of the methods used by him are very much implementable and satisfy today's architectural, environmental and social needs.

One of the most important features of Baker's words and works is being empathetic to various dimensions of sustainability. It has an untapped potential to serve billions in the developing nations like India. The model also illustrates that an individual can redefine architecture as a need against the conventional understanding of desire and can inspire many individuals to bring a positive change in the built environment.

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References

- Baker, L. (2000) "Architecture and the people." In: A + U: Architecture and Urbanism, n.12 (363, Dec.), p.69-73. English and Japanese
- Bhatia, G. (2000) Laurie Baker: Life, Works and Writing, New Delhi, India: Penguin
- Braungart M. and McDonough, W. (2002) Cradle to Cradle, New York: North Point Press
- Carson, R. (2000) Silent Spring, London: Penguin
- Correa C. (1987) Transfers and Transformations, In Charles Correa, 165-175. Singapore: Concept Media Ltd.
- Das, G. (2002) India Unbound, New Delhi: Penguin
- Gandhi, M.K. (1951) Sarvodaya: Its Principles and Programme, Ahmedabad: Navjivan.
- Grober, U. (2012) Sustainability: A Cultural History (tr. by Cunningham R.), Devon, UK: Green Books.
- Guha, R. (2014) Environmentalism: A Global History, Allen Lane: Penguin India
- Frampton, K. (2007) Modern Architecture: A Critical History, London: Thames and Hudson
- Khilnani S. (1999) The Idea of India, New Delhi, Penguin
- Lang J. (2002) A Concise History of Modern Architecture in India, Ranikhet: Permanent Black.
- Mehrotra R. (2010) Architecture in India since 1990, Mumbai: Pictor
- Menon, N. & Nigam, A. (2007) Power and Contestation: India since 1989, Nova Scotia: Fernwood

Baker's own writings

- Rubbish by Baker
 - Mud
 - Rural House Plans
 - Rural Community Buildings
- available at <<http://lauriebaker.net/index.php/work/booklets-and-writing-by-laurie-baker>>
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