

Achieving a Balance Between Sustainability, Community Living, Quality and Affordability – Ashoka’s “Housing for All” Experience

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Sustainable construction has been synonymous with expensive construction for many people which is really a wrong notion especially when it comes to ensuring affordable housing. In affordable housing, one of the key considerations is sustainability in the fields of energy and environment and at the same time ensuring high quality small spaces. “Sustainability” has to be seen with a new perspective, which will allow flexibility, viability and scalability. This perspective must come from the communities, or the users who would eventually live in these spaces.

The main approach of this paper is to discuss co-creation of a sustainable habitat to achieve a balance between quality and affordability between architects, construction companies and end-user communities. For achieving this, design thinking has been primarily used as a tool to enable design of the CASA standard for affordable housing.

1 How to use design thinking for sustainable construction

1.1 The Potential of design thinking in Indian homes

As an approach, design thinking taps into capacities we all have but that are overlooked by more conventional problem-solving practices. Not only does it focus on creating products and services that are human centered, but the process itself is also deeply human. Design thinking relies on our ability to be intuitive, to recognize patterns, to construct ideas that have emotional meaning as well as being functional, and to express ourselves in media other than words or symbols. Nobody wants to run an organization on feeling, intuition, and inspiration, but an over-reliance on the rational and the analytical can be just as risky. Design thinking, the integrated approach at the core of the design process, provides a third way.

The design thinking process is best thought of as a system of overlapping spaces rather than a sequence of orderly steps. There are three spaces to keep in mind: inspiration, ideation, and implementation. Think of inspiration as the problem or opportunity that motivates the search for solutions; ideation as the process of generating, developing, and testing ideas; and implementation as the path that leads from the project stage into people’s lives.

The reason to call these spaces, rather than steps, is that they are not always undertaken sequentially. Projects may loop back through inspiration, ideation, and implementation more than once as the team refines its ideas and explores new directions.

1.2 Step into action- apply design thinking in India

Affordable housing scenario in India is a perfect playground for design thinking. It offers not just the challenges, but also the potential to change the lives of millions of people. The market as of now believes that any product is good enough for the low income communities and simply because no products exist. But to truly make a difference, the sector needs powerful design thinking. To make this possible, Ashoka’s Housing for All program proposes the following:

- Identify and involve the various stakeholders for affordable housing in India
- Engage the stakeholders for co-designing the standardization of construction quality, energy and environment sustainability, community interactions and financial inclusion.
- Communities become the anchor for all the design elements of the standards

2 The Potential of certifications to foster sustainability

A way to promote design thinking in the building industry is by using certifications and therefore setting incentives for the developer. Certification systems such as LEED and Griha have paved the way for any kind of building certifications. While those systems target the upper segment of the market, Ashoka’s Housing for All Program and Ashoka fellow Jason McLennan have developed new certification systems that have the potential to democratize sustainable buildings.

2.1 A rating system for affordable housing - The example of CASA Rating System

Over the past few years, Ashoka demonstrated a market-based model – Hybrid Value Chain (HVC) – bringing together actors from the private sector and community based organizations to provide housing to

the informal sector households in India. Ashoka has been able to demonstrate its approach in a pilot project all over India and address groups of real estate developers and builders and reach national scale.

While working on scaling up affordable housing in India, Ashoka has realized that there is a risk in focusing only on scaling up without considering the quality and safety of the construction. Affordable housing is a rapidly growing market in India and there are no systems in place to regulate the quality and safety of a product. Ashoka is thus pioneering the creation of the Housing Council of India, a neutral body with industry thought leaders. The Housing Council will draw from national and international experts in the affordable housing space to implement its vision: the promotion of quality housing in India. The first project of the Housing Council is the creation of standards for affordable housing.

Ashoka is partnering TÜV Rheinland for this initiative. TÜV Rheinland is a global operating company dedicated to assure quality and safety and recognized for its high level of testing, certification and creation of standards. The two partners are creating standards for affordable housing. This will be the first of its kind certification, in India, that will be available for real estate developers to create a positive impact in this segment. At the same time Ashoka is setting up the Housing Council of India promoting the certifications.

An increasing number of stakeholders are attracted by the immense volumes of the affordable housing markets. So far, there is little awareness of the needs of the customers and there are no standards for technical requirements, environmental sustainability, effective budget handling or integration of community voices. Tapping into the low income housing market in India bears enormous challenges for quality.

2.1.1 Making housing inclusive

The Rating System intends to benefit those real estate developers who target the affordable housing market. The Rating therefore needs to ensure the accessibility and occupancy of affordable dwelling units for those customers. Our definition of affordability is, households with an aggregated income not exceeding INR 25,000 per month (app. 455 USD). The definition shall be examined every year and adapted so that the monthly instalments do not exceed 30% to 40% of the gross monthly income for a household (Affordable Housing – A key growth driver in the real estate sector?, 2010).

The Rating System targets the development of units valued up to INR 1.2 million (22,000 USD). As per the definition of KPMG (Affordable Housing – A key growth driver in the real estate sector?, 2010) and the definition of Task Force on Affordable Housing, of the Ministry of Housing and Urban Poverty Alleviation, Government of India, the cost of the unit should be less than 5 times the gross annual income of a household. Furthermore the Rating imposes a minimum of 250 square feet carpet area per dwelling unit and requests access to certain amenities such as schools, health centres. The rating stresses importance of structural safety, maximizing utilities and spatial design. Finally, it also encourages developers to explore energy efficiency and affordability through innovative use of products and incentives.

2.1.2 Creating a model for profitability

The Rating System will help outline a successful model for profitability in construction, maintenance of affordable houses in urban areas, set benchmarks for quality and best practices. Through this initiative, TÜV Rheinland and Ashoka intend to create a sustainable rating system and socially responsible way of tapping into the affordable housing market in India.

A real estate developer applying for the rating will be able to improve quality of the delivery by leveraging successful affordable housing projects and drawing lessons for future developments. Furthermore the rating system helps in improving marketing of the project by effectively promoting sales.

CASA is a Third Party Rating System. Real Estate Developers who chose to rate their affordable housing projects apply directly with a Third Party certification body. Customers opting for CASA Rating System obtain assurance in various aspects of their home buying decision. TÜV Rheinland is currently the partner of CASA Rating System for audits.



Figure 1: Stakeholders of the rating

Entering the process of certification, the real estate developer would be asked to make significant commitments to affordable housing. The rating has identified the following four focus areas: Construction, Energy & Environment, Community and Finance (see depiction 2). Next to improving certain practices by the developer, the rating encourages interaction between the real estate developer and other main stakeholders in a housing project: the customers and the retail finance institutions.



Figure 2: Focus areas of the rating system

The Rating System for Affordable Housing is not a one-time "stamp of approval", but a process that starts at a pre-building stage of the project, as soon as the developer has the documentation ready. A provisional certificate is awarded. A certificate at this early stage allows the builder to show the customers his commitment to produce a good quality product. The second audit is performed by the time roughly 50% of the construction is finished and results in a second provisional certificate. The third and final surveillance audit is performed upon completion of the project. A final certificate is awarded to the developer.



Figure 3: Processes of the rating system

2.2 Stipulations of the rating criteria

According to the Oxford Dictionaries sustainability describes the property to be "able to be maintained at a certain rate or level". It is widely accepted that this includes social, environmental and economic factors. Over one billion people – 32% of the global urban population – live in urban slums in emerging countries, with 500,000 more joining them each week. In addition, virtually all net growth of 2.6 billion in world population between now and 2050 is projected to occur in these cities. Relatively poor nations will build the equivalent of a city of more than one million people each week for the next 45 years. Embedded in such population growth implications, is the critical need for affordable and safe housing.

Ashoka therefore works towards sustainability by providing good housing solutions for 100 million families. Providing a clear benchmark for affordable housing has several advantages. It will incite real estate developers to aspire to a certain quality and will allow the government to efficiently target and promote affordable housing.

The rating system outlines stipulations that will allow the developer to face a new customer segment. While venturing into the affordable housing market, real estate developers not only need to adapt their products, but they also need to understand a completely new customer segment.

2.2.1 Beyond attractive price points

Next to price considerations, quality, durability, taste and aspirations are crucial elements to consider in affordable housing. Further the success of an affordable housing project is defined by its accessibility to the

Base of the Pyramid (BoP) customers¹. Affordable housing projects therefore need to make a considerable effort to understand and interact with this customer segment.

In its first phase of construction, the Janadhaar project in Bangalore has installed only the considerably cheap option of Indian toilets assuming that the customers would only look at the price points. Followed by a multitude of requests for Western toilets, Janadhaar did review their assumptions in the phase two of their project. The nascent affordable housing sector is full of similar examples; the rating system therefore outlines a consultative approach. The project requires a developer to create a profile of his target and incites developers to gather inputs in layout, building design and height.

An important element for sustainability is the access to amenities such as schools, health centers and work places. Accessibility to those amenities or existing plans to develop those considerably reduces the risk for the project to become deserted.

2.2.2 Sell to the target segment

The criteria further assesses if a project has made particular efforts to sell the units to the BoP customers and how many BoP customers were able to actually occupy the units. Further it evaluates if a pipeline of customers has been created by the developer in order to sell the project and if he has informed customers in advance of the commencement date for sales. The rating system therefore requires the developer to adapt his marketing methods to low-income communities. This can for example be done with a demonstration unit or other 3 dimensional models. This can range from opting for leaflets rather than a well-developed website and/or contacting the communities via a not-for profit or association and raise awareness about the project.

2.2.3 Provide assistance for loans

The rating acknowledges the efforts done in a particular project to provide customer with assistance and education on how they can access loans. This includes explaining the whole process of obtaining finance as well as helping to compile documentation. Providing financial literacy can help customers obtaining funds that would. For example it increases the chances of a customer significantly if he can show regular transaction on his bank account. In many cases, BoP customers need to open a bank account in a first step and then start using it for transfers.

The rating also evaluates the opportunities that are curated for customers. A project getting evaluated and approved by a big number of housing finance institution will get rated better than a project that does only by a few. Similarly if there is a product innovation in the loan product, it will also get credited to the rating.

2.2.4 Improving transparency

The rating tackles certain problems in the real estate industry by their root. The rating system would like to promote developers who do thorough checks of the titles, inaugurate transparent agreements with clients and only accept non-cash transfers.

Buying land with clear titles, for example, has proven to be difficult in India. The rating will provide further assurance that legality of titles is given considering all legal reviews of housing finance institutions. Furthermore there is a complex set of laws combining recommendations from the National Building Code (NBC) and bye-laws. The regulations are rarely verified. The rating requests developers to submit proof that these regulations have been respected and that no major deviations have been made after the planning phase.

A core pillar of the rating is to incite the developer to adhere to certain behaviors. One of them is to encourage the developer to enter a formal agreement with the customer stating the role and responsibilities of each stakeholder. This agreement needs to include the cancellation policy. Furthermore the developer is encouraged to state the total price and available carpet area of the unit including a detailed break up of all one time as well as recurring costs so that the consumer gets a clear picture at the outset.

Regrettably, purchasing units partly with money from the black market is widespread. Developers commonly accept cash payments, do not declare these amounts or issue a receipt for the customer. The rating system makes it a point to push developers to only accept money that is not transferred by cash and is therefore traceable.

2.2.5 Optimize energy-use and reduce effect on environment

Affordable housing poses a novel challenge to the building industry- the population densities that need to be accommodated in affordable are significantly higher than in any other housing project. The rating system ensures that the developer does not cut costs when it comes to providing efficient drainage and waste handling, as well as optimizes contributions to maintenance and operations.

The rating makes sure that the operations and maintenance costs are low by considering passive ventilation and lighting at the conception of the project. A key aspect is that the responsibilities and duration for operations and maintenance are clearly defined. The rating also evaluates the efficient use of the remaining energy needs, thermal efficiency and water management.

¹ Base of the Pyramid for India is defined by Ashoka as any family without a formal income statement and earning less than 500\$ a month as household Income.

2.3 A rating system for beauty in construction - the example of living building

Similar is the example of Ashoka fellow Jason McLennan. Recognizing the limitations of current approaches to the built environment, Jason has created a framework and platform that catalyzes systemic change through regulatory reform, market pressures, and design innovation. Whereas green building practices focus on reducing negative impacts of building, Jason orients the building industry to pursue a new end point: to create “living buildings,” structures which are self-sustaining and contribute to virtuous natural cycles, like plants.

For example, in some places, net zero water may be more appropriate across a neighborhood rather than an individual house. The principles he sets out are relevant far beyond buildings and apply to anything that is built from furniture to bridges to parks and roads. The mindset shift he advances, codified in a novel certification approach, considers the inter-connections among and between indoor air, energy, water, walkability, local food systems, and other factors that shape how humans interact with buildings across their lifetime.

The result of Jason’s approach is that builders and designers conceptualize buildings or neighborhoods as a whole, and therefore avoid shifting burdens from one environmental or social objective to another – for example, creating a building that compromises water usage for the sake of walkability. Considerations of beauty, nature, and social equity are central to Jason’s approach not for moral and aesthetic reasons but because they energize practitioners to assume roles as innovators, taking action as it is needed to modify local building codes, detoxify building supply chains, liaise with local planning committees, and problem-solve the myriad of other challenges – practical, ideological, economic – that arise. Through a robust communications strategy and ambassador program, Jason is shaping a talent force across the industry that will continuously and iteratively evolve new approaches as challenges arise.

In 2006, Jason launched the Living water and energy), buildings must include light, patterns and shapes found in nature (biophilia), the support of regional economies through local sourcing and equitable access to nature. LBC has also tackled the issue of toxins in materials and Jason is launching Declare, a nutritional label for building materials. Unlike LEED, there are no prescriptive requirements about how each imperative is met, thus stimulating industry players to more freely innovate in a myriad of creative ways to meet the performance-based criteria. A building can be certified as a Living Building after a minimum of one year of performance data has been gathered, not projected energy and water use – this is not a theoretical approach, but one that focuses on getting ideas to action and results, and charting outcomes and progress.

3. Conclusion

The scenario of affordable housing in India is promising and when such large demands (over 25 million homes) are yet to be met, it is imperative that any new construction must become sustainable in nature. CASA Standards and Rating system is one such initiative that is beginning to gain acceptance in the real estate industry. More such initiatives will cause a positive change in the affordable housing future of India.

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