Decolonizing South Asian architecture: Sustainable and community-oriented social housing in India. Figure by Pashmeena Vikramjit Ghom.

Decolonizing South Asian architecture: Sustainable and community-oriented social housing in India

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Abstract: Decolonization process in India involved a range of political, economic, and social changes aimed at dismantling the colonial system and building a new, independent nation. One of the most significant challenges India faced during the decolonization process was the issue of partition. The partition of India in 1947 led to the creation of two separate countries—India and Pakistan—and resulted in widespread violence and displacement. Millions of people were forced to migrate across the newly formed borders, resulting in one of the largest mass migrations in human history which created huge demand for housing. The methodology adopted for this research is based on qualitative analysis and the data source for this study are government reports, research articles, books and newspaper. Further, it examines four case studies of social housing projects designed to provide sustainable and livable solutions for low-income families in different regions of India, including Aranya Community Housing, Incremental Housing in Belapur, ATIRA Staff Housing in Ahmadabad, and CIDCO Housing in Parsik Hill in Navi Mumbai. At the core of the article lies an investigation into the dynamic nature of architecture in the aftermath of independence, coupled with a detailed examination of four distinct social housing ventures. The social housing studies demonstrate innovative and flexible approaches to social housing, with a focus on community building, energy efficiency, and social amenities. The projects have been successful in providing access to affordable and sustainable housing for low-income families in different regions of India. The case studies highlight the importance of a community-centered approach to social housing, emphasizing the need for shared spaces and amenities. The article discusses the challenges and opportunities of implementing sustainable and livable social housing solutions in India.

Keywords: social housing; community building; energy efficiency; economic; sustainable; livable.

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1. Introduction

On August 14, 1947, Jawaharlal Nehru, the then Prime Minister of independent India, gave a speech entitled "Tryst with Destiny," announcing the birth of a newly born nation coming out of the bondages into a modern India with new hopes based on progress, science, and technology (Chauhan, 2022). The country faced a dilemma regarding the peculiarities of its architecture in the post-independence period: whether to be British or completely new, where the aspirations and hope of a developing nation with scientific rigor persisted. The immediate reflections of this visionary approach are depicted through the architecture followed, *as seen in the capital complex by Le Corbusier* (Perera, 2006) *and Bhubaneshwar by German architect & urban planner Dr. Otto Koenigsberger.* Le Corbusier's approach is based on the CIAM model; rational and efficient city. *Dr. Otto Koenigsberger adopted a* linear pattern with a central artery forming the main spine based on the system of neighborhood units and horizontal development (Kalia, 2006).

The first factor influencing architectural style in post-independent India is the political situation, which include establishment of India as independent, modern and progressive country with growing economic development and national aspiration; *a modernity distinct from the colonial version* (Figure 1). The second factor is cultural and socio-economic situation, where architectural characteristics projected are 'secularism and modernity'. The socio-economic situation prevailed then was deplorable with no longer time for elaborate plans. Frantic construction activity to settle the refugees was initiated along with much appreciated *five-year plans*.

There were only four architectural schools and very few qualified architects (Ghom et al., 2023). There was lack of vision among planners and architects with low Government funding (Chauhan, 2022; Kapusta, 2017). While a faction believed in resurrecting 'Indian practices' prior to British rule, others believed in a different architecture with its expressions that are befitting time and needs of a new India that are inspirational architectural symbols for future generations. Although, there were significant architectural ideologies like "*revivalism, modernism, international contribution, and continuity (Indo-British ideology)*" (Kapusta, 2017), Despite the primacy of revivalism and continuity, the architecture of post-independence India was influenced by the European and American Bauhaus movements. Chandigarh, designed by Le Corbusier and supported by Pierre Jeanneret, Jane Drew, and Maxwell Fry, was based on the International Congresses of Modern Architecture (CIAM), which sought *social transformation* and held that "transformation of built environments can affect social change" (Perera, 2006). However, it was evident that it was a "western world-view of eastern architecture" (Lu, 2010). Bhubaneswar, designed by Dr. Otto H. Koenigsberger, emphasized "horizontal development," symbolizing "closing the gap" between rich and poor. Gandhinagar by H. K. Mewada is based on Mahatma Gandhi's concepts and principles. A few public buildings were designed in *continuity*: Ganesh Deolalikar's Supreme Court of

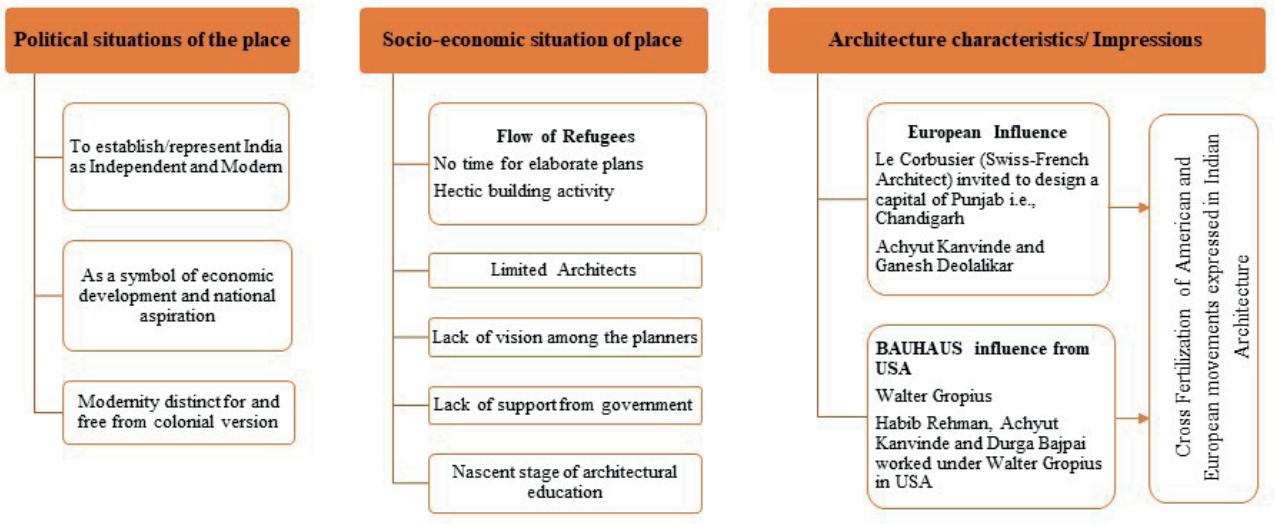

Figure 1 |. Factors influencing architectural style in Post-independent India (Source: Authors).

India and the National Museum of India; and *Vidhan Soudha* following *revivalism* (Ghom & George, 2021b), which are expressions of the Neo-Dravidian style (Kalia, 2006; Kapusta, 2017). However, mostly modernism prevailed after independence due to the wider acceptability of the style and the considerations of efficiency, technology, standardization, the use of grids, and the simplicity of form. In 1960, the increasing "sense of monotony resulting from uniformity, apathy, insecurity, lack of belongingness, and ensuing social problems" dealt a fatal blow to modernism (Jacobs, 2016). Post-modernism developed through criticism of modernism and kicked off at a time when society was experiencing dwindling economies, the increasing impact of the information explosion, the growth of the consumerist economy and marketing, and advancements in computation and allied manufacturing combined with the need for an existential identity (Ghom & George, 2021a). Along with post-modernism, other architectural styles such as deconstruction, brutalism, critical regionalism, sustainable architecture, futurist architecture, and symbolism in architecture co-existed. Ar. Achyut Kanvinde's Indian Institute of Technology Kanpur, based on functionalism and regionalism; Ar. Charles Correa's experiments with Deconstructivism in the Hindustan Lever Pavilion; "critical regionalism" in Gandhi Ashram, Ahmedabad (1963); IUCAA, Pune (1988-92); Jawahar Kala Kendra (1986-91); climate-responsive architecture in *Kanchanjunga* Apartments, Mumbai (1983); and cosmological architecture in Vidhan Bhavan, Critical regionalism began to appear in the works of architects like Charles Correa, Raj Rewal, and Balkrishna Joshi, who depicted a sensible choice in every aspect of a building, *from design to construction*, befitting the needs of resource scarcity and energy. Further, it tries to "appropriately integrate global architectural and technological developments with regional sensibilities derived from spatial, cultural, and historical contexts" (Bahga & Raheja, 2018). Symbolism as a concept is reflected in projects such as Faroborz

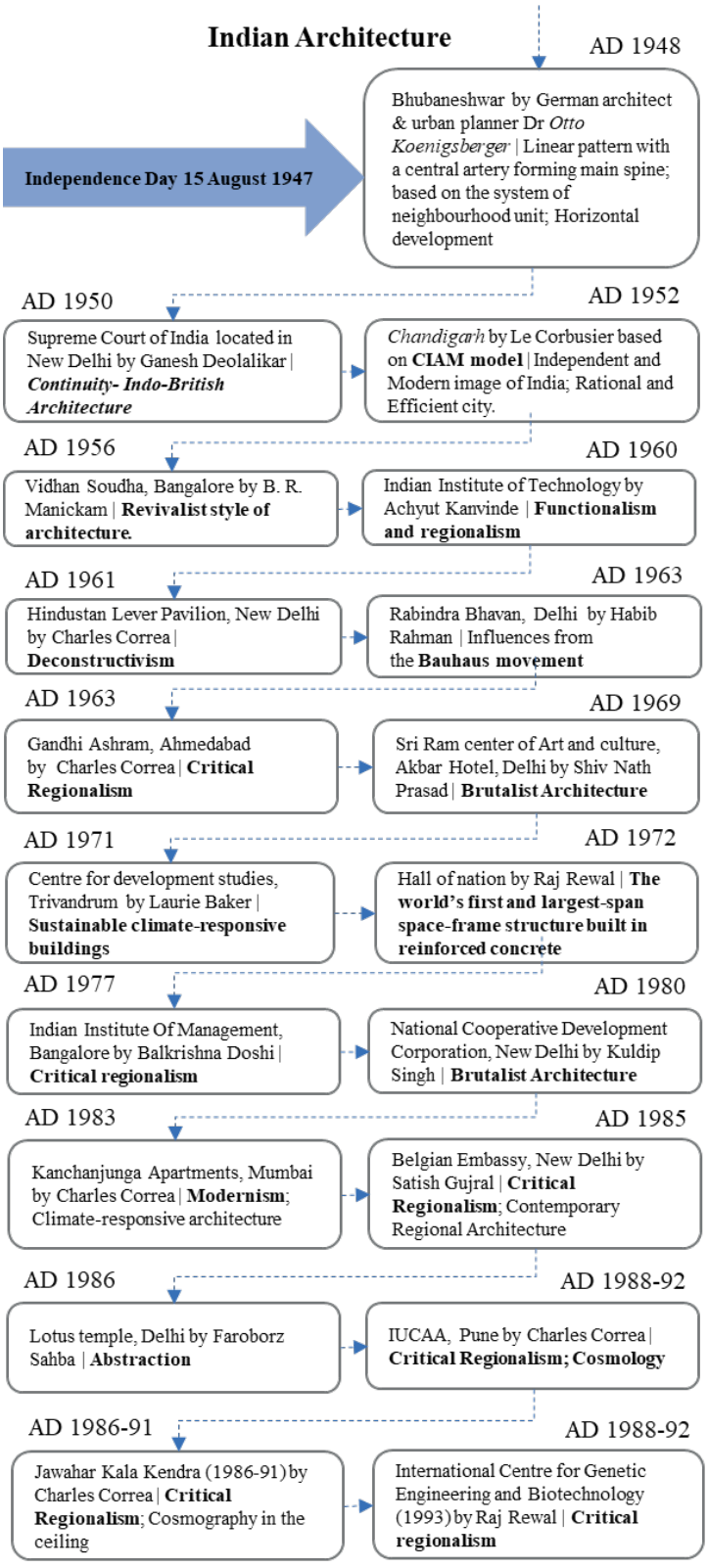

Figure 2 | Architecture after Independence - Part 1 (Source: Authors).

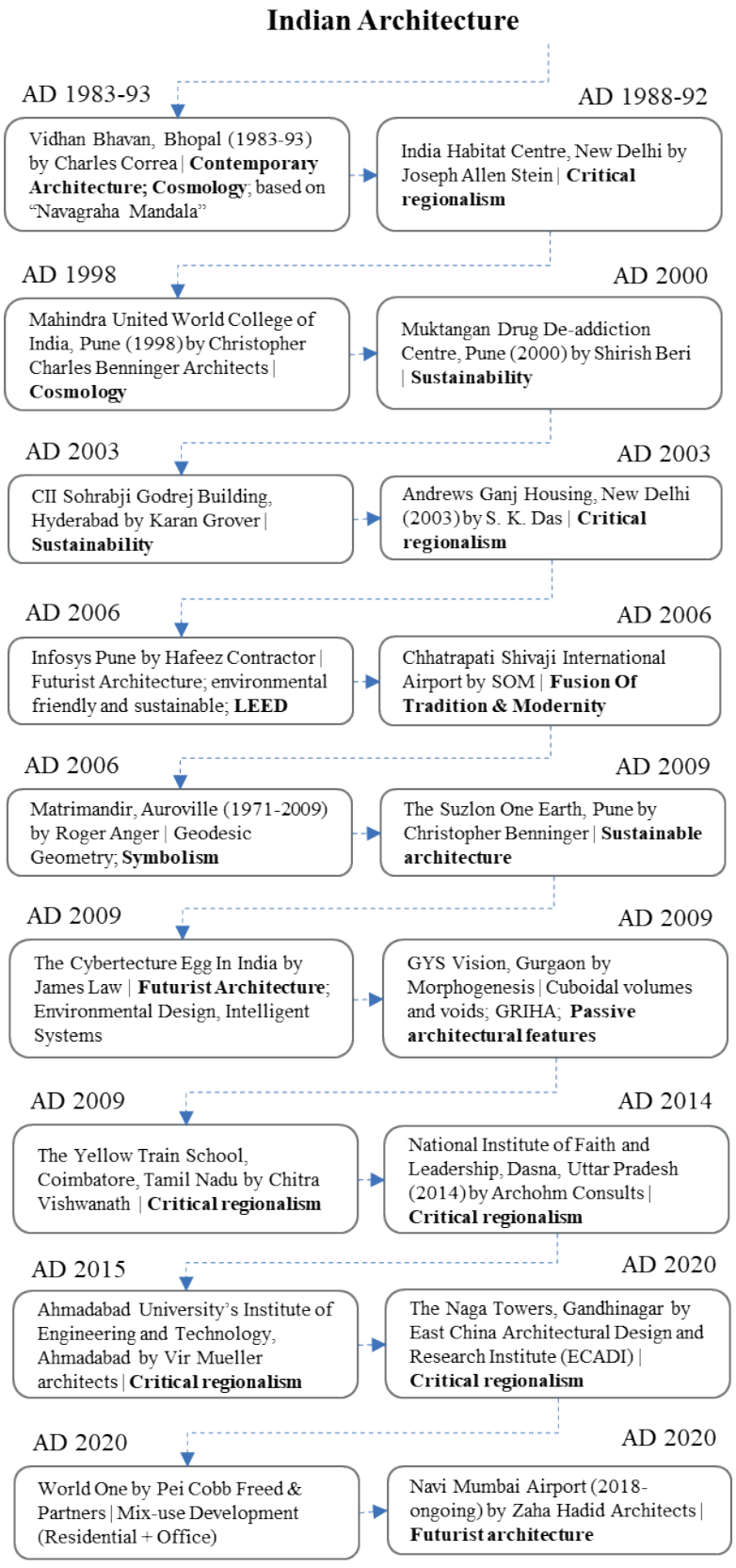

Figure 3 | Architecture after Independence - Part 2 (Source: Authors).

Sahba's Lotus Temple in New Delhi (1986) and the East China Architectural Design and Research Institute's (ECADI) Naga Towers in Gandhinagar. Currently, the trend is toward "sustainability and sustainable architecture," with sustainability rating systems to rate such built forms. Sustainability has risen due to the sheer need to create a balanced environment without hampering the lives of future generations, which is a global responsibility of all nations, as enshrined in the Butland report and SD goals. Infosys Pune (2006), designed by Hafeez Contractor, and Cybertecture Egg in India, designed by James Law, are two fine examples of futurist architecture built in India. Infosys mimics a descending UFO, which is environmentally friendly and sustainable (Infosys, 2022; Ingole, 2018). The Cybertecture Egg is futurist architecture with careful but customized environmental design, intelligent systems, and a self-sustaining vessel with an ecosystem that allows life to exist, grow and evolve (Mathur, 2020). It won the CNBC Asia Pacific Commercial Property Awards 2009 and the *Architecture Award India* (Archhello, 2022). However, Laurie Baker's vernacular architecture adapted to the inability to afford modern-style materials, technology, and systematic-machine-involved construction. Acceptance of this great man with his appropriate technology-oriented architecture is well reflected in the conferring of *Padmasree* by the Government of India. A detailed timeline is given in Figure 2 and 3.

2. Case studies on Social Housing in India

At the time of India's independence and partition in 1947, the country faced a massive influx of refugees from Pakistan, leading to a significant increase in the demand for housing. This demand continued to grow in the following decades as the population of India continued to increase. The Indian government initiated various social housing programs to address the housing crisis, but the situation remained challenging,

Balkrishna Doshi	Charles Correa	Raj Rewal
1. Aranya Community Housing, Indore (1983-89) 2. ATIRA Staff Housing in Ahmadabad (1957-60)	The Incremental Housing project in Belapur, Navi Mumbai (1982 to 1984)	CIDCO Housing in Parsik Hill, Belapur, India (1988)

Figure 4 | Architects for Social Housing.

particularly for low-income families. The factors influencing architecture in the post-independence period were political, cultural and socio-economic conditions. Although Indian architects were influenced by Western architecture, they ultimately developed architecture suited to Indian aesthetics, climate, economic and socio-cultural aspects. Post-independence Indian architects who deserve special mention for social housing are Balkrishna Doshi, Charles Correa and Raj Rewal.

In this context, the following case studies highlight the efforts made by these architects to create sustainable and livable social housing solutions in different regions of India, where the demand for affordable housing remains high. These projects provide a positive example of how architecture and design can address the challenges of social housing in the postcolonial era.

2.1 Aranya Community Housing, Indore, India

The design concept for the Aranya Community Housing project in Indore, India was developed in the 1980s by architect Balkrishna Doshi and his team at Vastu-Shilpa Consultants (AKDN, 2020). The project was commissioned by the Madhya Pradesh Housing Board, with the goal of providing affordable housing for low-income families. The design concept for Aranya was inspired by the traditional Indian courtyard house, which is typically organized around a central courtyard that provides natural light, ventilation, and a

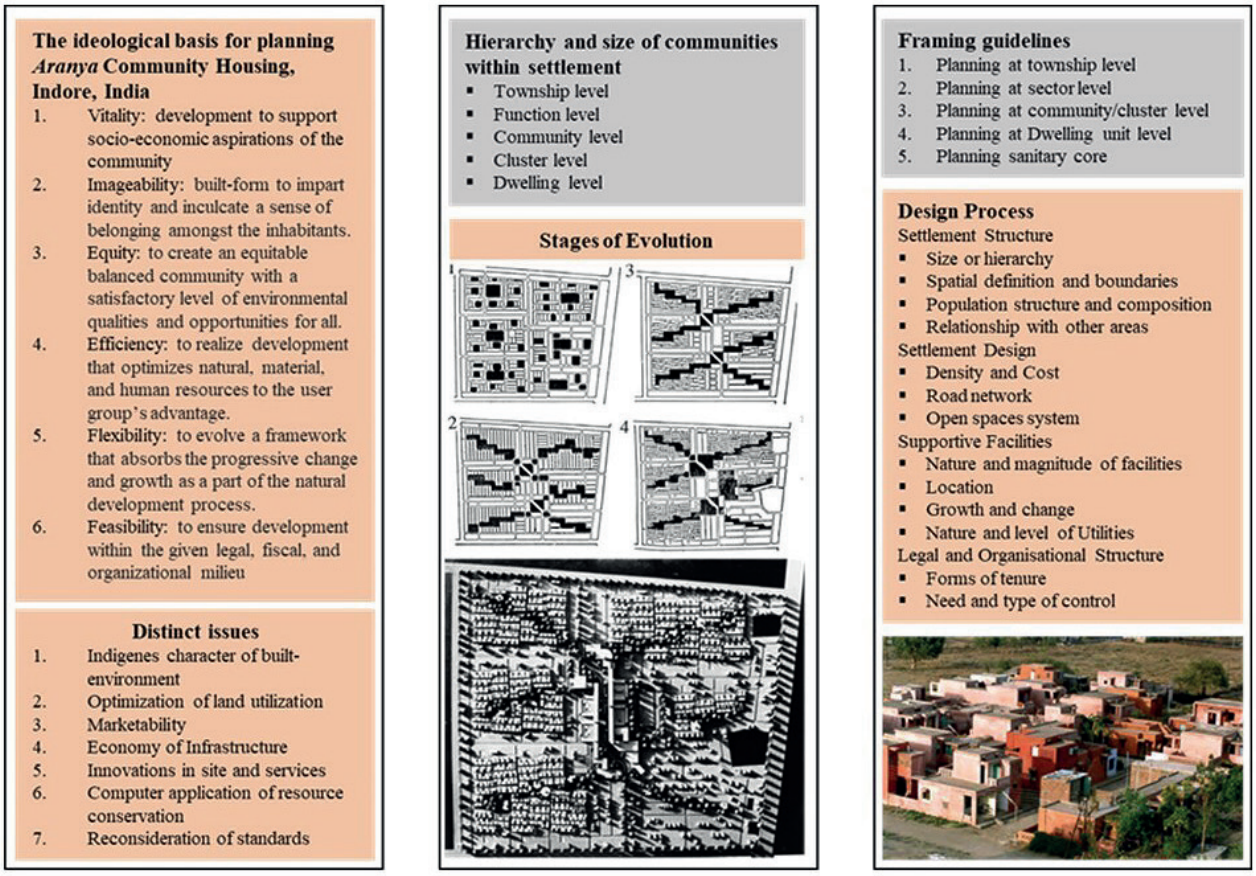

Figure 5 | Design Concept of Aranya Community Housing, Indore, India (Source: Authors).

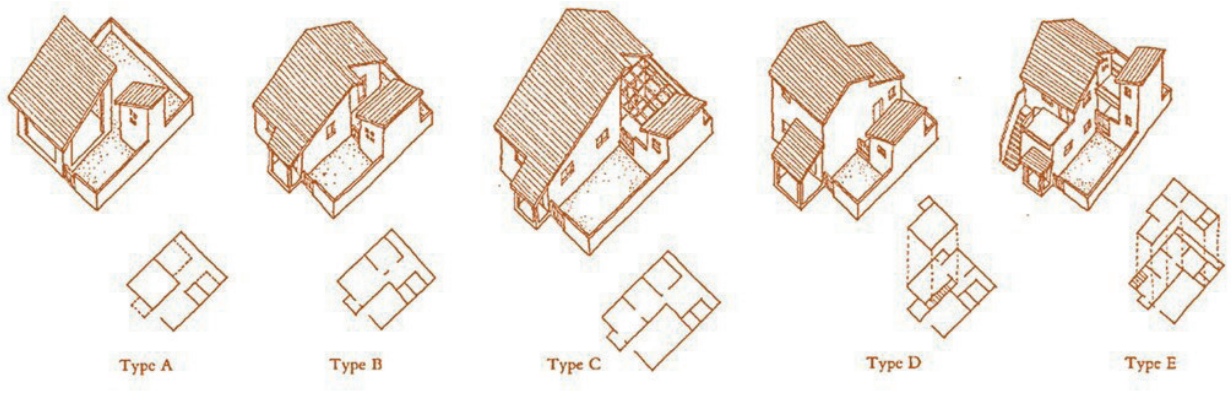

Figure 6 |: Unit plans of Incremental Housing, Navi Mumbai (Correa, 2020).

sense of community. Doshi and his team adapted this concept to create a high-density housing complex that could accommodate a large number of families on a relatively small site. The housing units at Aranya are organized into clusters, with each cluster consisting of several courtyards surrounded by a series of apartments. The courtyards serve as communal spaces for the residents, providing opportunities for social interaction and shared activities. The housing units themselves are designed to be flexible and adaptable, with a variety of different unit types and sizes to accommodate different family sizes and income levels. The buildings are constructed using locally sourced materials and traditional building techniques and are oriented to take advantage of natural light and ventilation. Overall, the design concept for Aranya was based on a deep understanding of local culture and tradition, and aimed to create a sustainable, livable community that could provide affordable housing for generations to come (Davidson & Serageldin, 1995; Doshi, 1989; Mollard, 2019).

2.2 Incremental Housing, Belapur, Navi Mumbai, India

The design concept for the Incremental Housing project in Belapur, Navi Mumbai, India, was developed in the late 1980s by architect Charles Correa and his team at the Charles Correa Associates architectural firm. The project was commissioned by the City and Industrial Development Corporation of Maharashtra (CIDCO), with the goal of providing affordable housing for low-income families. The design concept for Incremental Housing was based on the idea of incremental growth, which allowed residents to build and expand their homes over time as their needs and finances allowed. The project consisted of a series of low-rise buildings that were arranged in clusters around shared courtyards and public spaces. The buildings were constructed using local materials and techniques and were designed to be adaptable and flexible to accommodate the changing needs of the residents. Each building contained a range of different unit types and sizes, from small single-room dwellings to larger multi-room apartments, allowing families to move up and down the housing ladder as their circumstances changed. The shared courtyards and public spaces were designed to encourage social interaction and community building, with a focus on creating a sense of ownership and pride among the residents (Baitsch, 2018; Correa, 2020; Gupta, 2021).

2.3 ATIRA Staff Housing project in Ahmedabad, India

The design concept for the ATIRA Staff Housing project in Ahmedabad, India, was designed by architect Balkrishna Doshi (Hidden Architecture, 2018). The project was commissioned by the Ahmedabad Textile Industry's Research Association (ATIRA) to provide housing for its staff. The design concept for the ATIRA Staff Housing was based on the principles of sustainability, community, and affordability. The project consists of a series of low-rise buildings that are arranged in clusters around shared courtyards and public spaces (Figure 8). The buildings are constructed using locally sourced materials and techniques and are designed to be energy-efficient and environmentally friendly (Mehta, 1988). Each building contains a range of different unit types and sizes, from small single-room dwellings to larger multi-room apartments, allowing staff to move up and down the housing ladder as their needs change. The

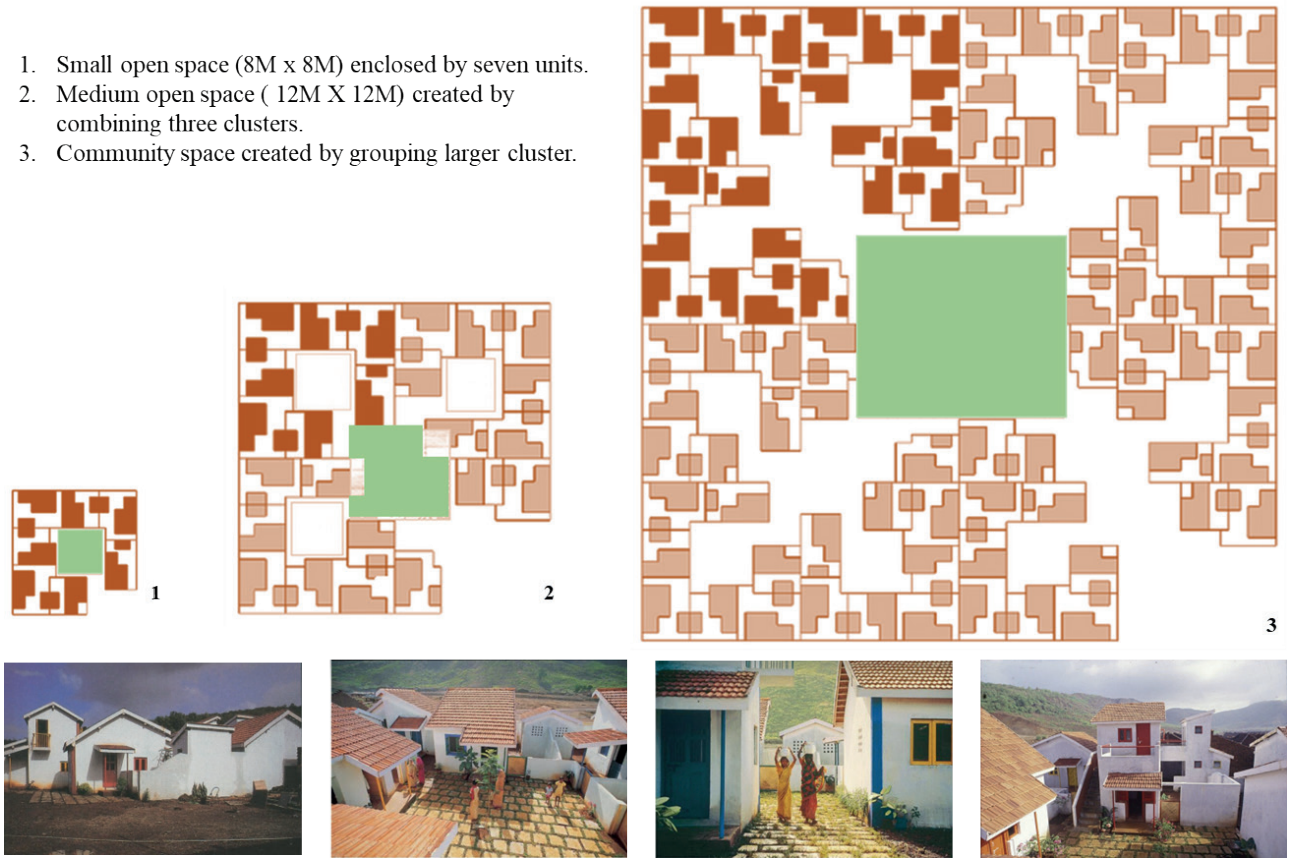

Figure 7 | Cluster Planning of Incremental Housing (Correa, 2020).

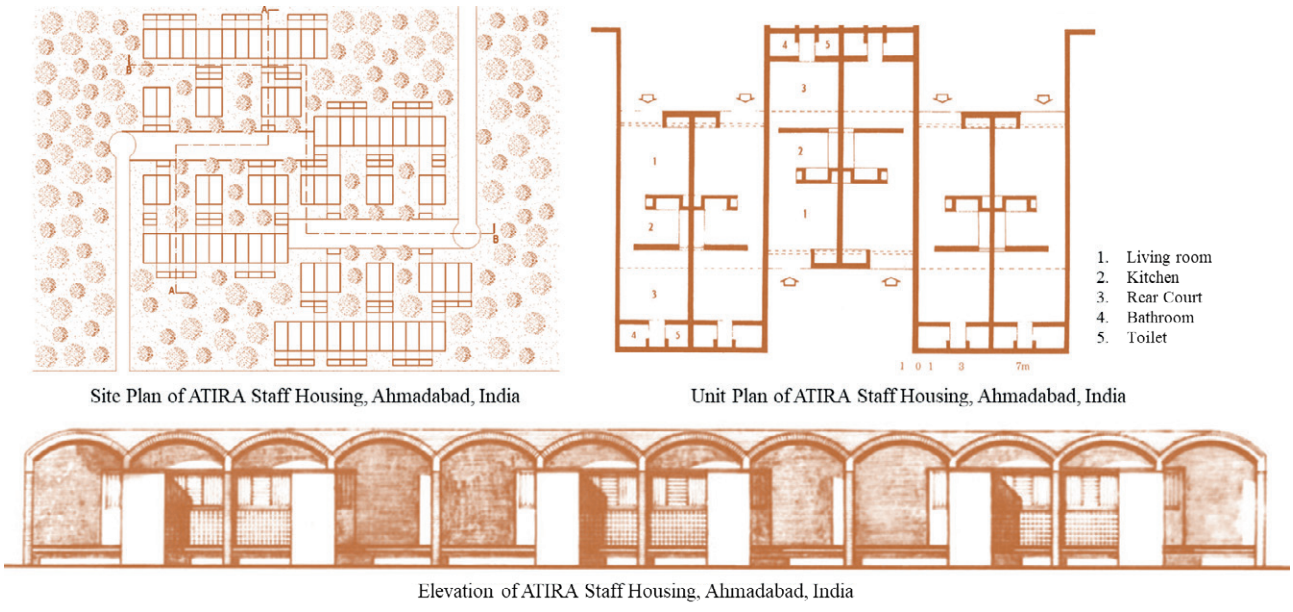

Figure 8 | Details of ATIRA Staff Housing, Ahmadabad, India (Hidden Architecture, 2018).

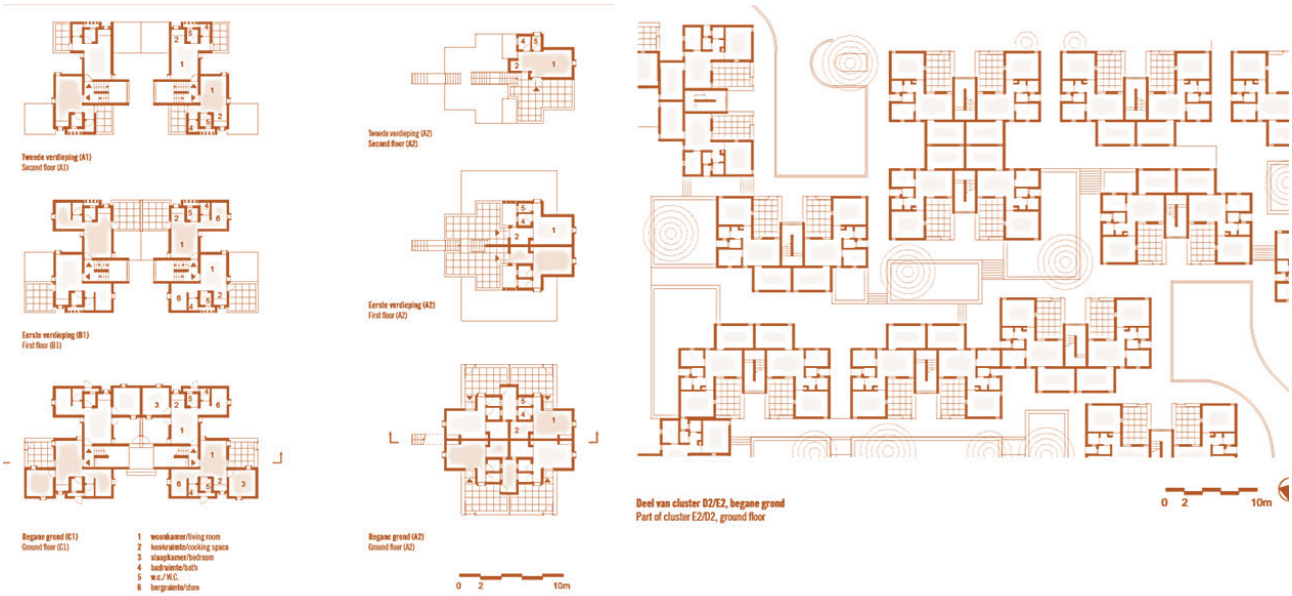

Figure 9 | Plan of A, B, C, D, and E of CIDCO Housing, Navi Mumbai, India (Raj Rewal Associates, 2020).

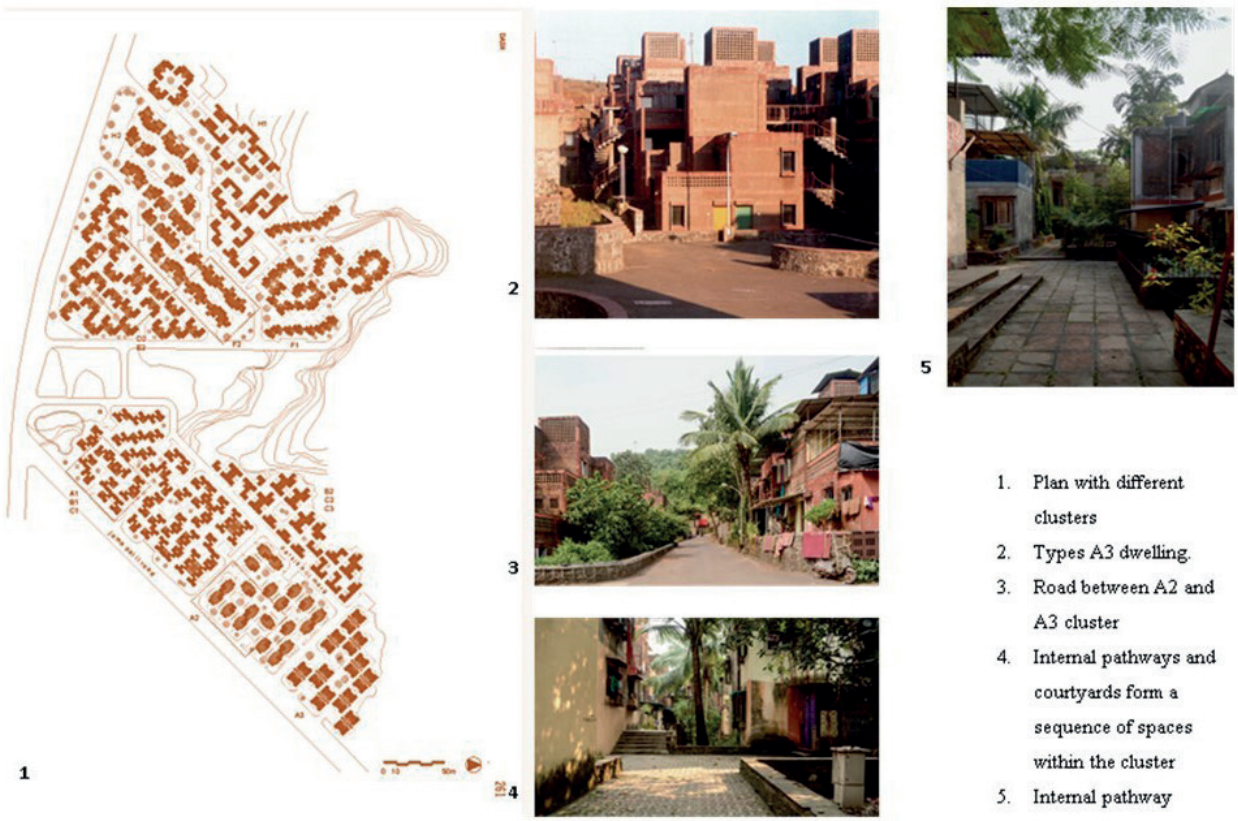

Figure 10 | Site Plan and View of CIDCO Housing (Raj Rewal Associates, 2020).

shared courtyards and public spaces are designed to encourage social interaction and community building, with a focus on creating a sense of ownership and pride among the residents. The project also includes a range of amenities and services, including a gymnasium, a library, and a community hall, to support the needs of the staff. The design concept for ATIRA Staff Housing also incorporates several sustainable features, such as rainwater harvesting, solar water heating, and passive ventilation systems. These features help to reduce the environmental impact of the project and promote a healthier, more sustainable way of living. As a whole, the design concept for ATIRA Staff Housing is based on a deep understanding of the needs of the staff and the surrounding community and aims to create a sustainable, livable, and affordable housing solution that can serve as a model for other similar projects in the future (Curtis, 2016; Hidden Architecture, 2018; Raje, 1984)

2.4 CIDCO Housing Project in Parsik Hill, Belapur, India

The CIDCO (City and Industrial Development Corporation) Housing Project in Parsik Hill, Belapur, India, was designed to provide affordable housing to low-income families. The project was designed by Raj Rewal and built by CIDCO, a government agency responsible for the planning and development of new cities in India (Rewal, 2018).

The design concept for the CIDCO Housing project was based on the principles of sustainability, community, and affordability. The project consists of a series of high-rise buildings that are arranged around shared courtyards and public spaces. The buildings are constructed using locally sourced materials and techniques and are designed to be energy-efficient and environmentally friendly. Each building contains a range of different unit types and sizes, from small single-room dwellings to larger multi-room apartments, allowing residents to move up and down the housing ladder as their needs change (Figure 9). The shared courtyards and public spaces are designed to encourage social interaction and community building, with a focus on creating a sense of ownership and pride among the residents. The project also includes a range of amenities and services, including parks, playgrounds, community centers, and schools, to support the needs of the residents. The design concept for CIDCO Housing also incorporates a number of sustainable features, such as rainwater harvesting, solar water heating, and passive ventilation systems. These features help to reduce the environmental impact of the project and promote a healthier, more sustainable way of living. Overall, the design concept for CIDCO Housing is based on a deep understanding of the needs of low-income families and the surrounding community and aims to create a sustainable, livable, and affordable housing solution that can serve as a model for other similar projects in the future (Rewal, 2018; Raj Rewal Associates, 2020).

3. Conclusion

The common points in these case studies include:

1. Affordable Housing: All the case studies focus on providing affordable housing to low-income families.

2. Sustainable Design: Each project incorporates sustainable design features such as rainwater harvesting, green spaces, energy-efficient systems, and solar panels.

3. Community and Social Amenities: The projects emphasize creating a sense of community through shared spaces and social amenities such as community centers, schools, and playgrounds.

4. Diversity in Housing Types: Each project includes a range of housing types and sizes to cater to the diverse needs of families.

5. Flexibility in Housing: The Incremental Housing in Belapur, Navi Mumbai, and ATIRA Staff Housing in Ahmadabad provide flexible and accessible housing solutions that allow families to gradually expand their homes over time as their needs and financial resources change.

6. Urbanization: All the projects are located in urban areas, highlighting the challenges of providing affordable housing in densely populated cities.

7. Collaboration: Each project involved collaboration between architects, developers, and local government to create sustainable and livable housing solutions.

Ultimately, these case studies highlight the significance of developing affordable, sustainable, and socially responsible housing solutions to meet India's growing demand.

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