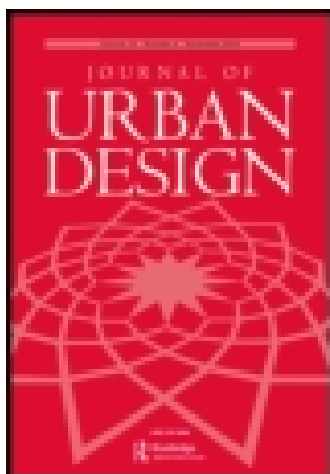


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Sudeshna Chatterjee<sup>a</sup>

<sup>a</sup> Action for Children's Environments, New Delhi, India

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# Making Children Matter in Slum Transformations: Lessons from India's National Urban Renewal Mission

SUDESHNA CHATTERJEE\*

*Action for Children's Environments, New Delhi, India*

**ABSTRACT** *This paper looks at two successful slum redevelopment projects under India's flagship urban renewal mission, which mandate citizen participation and inclusive planning to create planned equitable cities. It examines how children's concerns are addressed and children's well-being is affected in the best of projects. The two case studies represent different design and planning approaches to in-situ redevelopment: (1) replacing the slum with flats; and (2) selective infill houses. The paper, in discussing the planning and design process adopted by the two projects, seeks to answer the question: what can urban design learn from children's use and activities in the urban space of slums to provide qualitatively superior local areas, and from children's perceptions of slum upgrading and redevelopment?*

## Introduction

An estimated 1 billion people live in inadequate urban settlements or 'slums' globally (UN-Habitat 2006a), and India accounts for 17% of the world's slum population (UN-Habitat 2006b). As insufficient attention is paid to improving the living environments of children in urban poverty in relation to the scale of the problem, more children want for shelter and sanitation than are deprived of food, education and healthcare (UNICEF 2012). Millions of children are growing up in slums across India, in poor quality and overcrowded housing, without adequate provision of municipal services, in neighbourhoods which are often unsafe (high levels of crime and violence) and hazardous (polluted water, open sewer systems, poor lighting, congested streets, lack of local safe play areas etc.). This directly violates the right of every child to a standard of living adequate for the child's physical, mental, spiritual, moral and social development as enshrined in Article 27 of the United Nations Convention on the Rights of the Child (UNCRC) of 1992.

India's political leadership post-independence from British rule in 1947 had favoured rural development over urban development. As India's urban population increased (from 17.29% in Census 1951 to 31.16% in Census 2011) slums proliferated in Indian cities and this was directly attributed to migration; in fact the reticence to upgrade slums had often been attributed to the fear of enticing more migration to cities (Burra 2005). India's growing economic power in the wake of liberalization of its economy in 1991, rapid urbanization and the rising aspirations of the middle classes for world-class cities saw the birth of what has been labelled India's first flagship mission on urbanization (Maira 2010): the

\*Email: [sudeshna.kca@gmail.com](mailto:sudeshna.kca@gmail.com)

Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in 2005. It provided Indian cities, which were riding on the success of high economic growth in the last decade, the chance of becoming world-class cities and attractive destinations in globalization through state-funded urban renewal. The government was mindful of emphasizing that all citizens should equally benefit from national economic growth and thus JNNURM married poverty reduction goals to urban development agendas to create a large slum redevelopment programme called Basic Services to the Urban Poor (BSUP).

A hidden benefit of BSUP is the possibility of improving child health and welfare for millions of children living in slums across India's cities. BSUP, when reviewed from a rights perspective, upholds several of the principles enshrined in UNCRC and the right to adequate housing such as commitment to security of tenure, improved housing with environmental improvements and provision of basic services, new houses at affordable prices, promotion of *in-situ* development rather than relocation, provision of civic amenities and utilities, and convergence of social security services with urban upgradation. If BSUP is truly to achieve its stated goals, the resultant projects would enhance not only the physical living environments of children but also their human capital.

This paper looks at two slum redevelopment projects under BSUP that were part of a larger research project that analyzed the impact of BSUP-funded slum redevelopments on children in six Indian cities by the Action for Children's Environments Trust. The two case studies discussed are representative of the best practices of the two predominant *in-situ* approaches adopted to implement BSUP in India: (1) Karimadom redevelopment in Thiruvananthapuram city in the south-western Indian state of Kerala as an example of total redevelopment that replaced the slum with walk-up apartments; and (2) Gandhi Nagar redevelopment in Pune city in the large western Indian state of Maharashtra as an example of infill<sup>1</sup> housing that selectively built *pucca*<sup>2</sup> or new permanent houses in place of semi-permanent or *kutcha*<sup>3</sup> structures. Both case study projects were implemented by reputed non-governmental organizations (NGOs) and not private contractors and, unlike most other Indian cities, both case study cities had institutional capacity within the Urban Local Body (ULB) to support participatory slum upgrading. Adults and not children were the focus of these projects, the common assumption being any improvement benefits children as well. This paper investigates the possibilities of making the urban space of slums work better for children and making urban development more inclusive as mandated by JNNURM.

## Methodology of the Study

The research adopts a multiple case study methodology. The research believes that the process of redevelopment also provides an opportunity to make the living environment of children in poverty more child friendly through planning and design. The City Development Plans (CDPs) of the selected cities, Detailed Project Reports (DPRs) of selected slum redevelopment projects and other secondary data were reviewed. Primary data were collected using a standard format by visiting the project sites to study the socio-physical environments of the slums and the perceived changes before and after BSUP-funded redevelopment by all stakeholders. Interviews were conducted with municipal officers and key non-governmental actors: planners and architects, local NGOs, civil society groups. Workshops/Focus Groups Discussions (FGDs) were conducted with children (a

sample size of at least 30 in each site) and parents in the project communities in partnership with local NGOs, university partners, women's groups, schools, ULBs etc. Community mapping exercises were carried out with children and child-led fieldtrips were conducted in all the study slums. Informal hanging out and interviews with selected children at project sites after the workshops provided in-depth understanding of children's perceptions of urban renewal and their use of urban spaces within the local area.

### **City Renewal and Slum Redevelopment in India: A History**

Rebuilding cities results from a complex interaction of ideas, policies and politics (Zipp 2013). Urban renewal and slum upgrading had followed two different policy trajectories in India. The former was considered a means to remake the city as a better place, while the latter was seen as a way to rid cities of urban poverty and free up urban space. Land thus cleared was made into parks, open grounds around monuments, and used for planning new housing and commercial centres. However, no urban renewal and slum clearance idea could take shape without political will (Kundu 2004) and post-economic liberalization in 1991 without judicial mandate following public interest litigations filed by the middle classes (Bhan 2009).

The word 'slum' in India has historically been used to define overcrowded living environments; degraded housing stock with implications of poverty, demoralization and crime; and, as Gupta (2003) points out, often without reference to the history of the settlement. Many historic urban centres with well-organized community structures were subjected to urban renewal where governments found it easier to remove and relocate residents citing slum-like living conditions (Gupta 2003). This has roots in town planning under British colonial rule, when Improvement Trusts were established in many Indian cities in the late 19th and early 20th centuries with the primary aim of sanitizing native living conditions through plans and programmes for decongesting cities (Priya 1993), and executing the hygienic disposal of waste and control of diseases (Sharan 2006). Patrick Geddes was the most vocal critic of this approach that imported Western industrial town by-laws to redesign parts of existing Indian cities to create 'new sanitary layouts', which often destroyed indigenous neighbourhoods (Goodfriend 1979).

The first centrally sponsored programme in India that helped to change the focus of urban renewal from slum clearance to slum improvement was the Environmental Improvement of Urban Slums (EIUS) in the early 1980s. EIUS was influenced by The World Bank's slum upgrading initiatives at that time. These were rooted in John F. C. Turner's theoretical writings that argued for improving the environment of the slum and not demolishing housing, which residents will gradually improve by themselves if they are provided with security of tenure and access to credit (Werlin 1999). EIUS was followed by two programmes in the next Five Year Plan<sup>4</sup> period: the Urban Basic Services (UBS), which was initiated by UNICEF worldwide, and the Self-Employment Program for the Urban Poor (SEPUP). UBS focused on children's and women's needs in local areas; emphasized self-help and community involvement, and linked social development to urban development (Cousins 1992). Many of these ideas were included in JNNURM which was also launched during the 10th Five Year Plan period.

### Slum Redevelopment under JNNURM

BSUP, which targeted the upgrading and redevelopment of slums in 63 cities spread across India, and the updated programme, Rajiv Awas Yojana (which is to replace BSUP in the 12th Five Year Plan period of 2012–17), are different from previous slum-upgrading initiatives in many ways. Influenced by Hernando de Sotos' (1989) writings that talk about not less 'government' but 'better government' as key to successful slum upgrading, JNNURM mandates reforming ULBs and state governments before central funds could be disbursed. Another important dimension of JNNURM/BSUP is the mandatory citizen participation in decision-making processes which is a key right accorded to children in the UNCRC.

The cities eligible for seeking financial assistance under JNNURM are compulsorily required to formulate a CDP with a long-term urban perspective of 20–25 years (with five-yearly upgrades) indicating policies, programmes, strategies and financial plans. The CDPs would facilitate identification of projects and ULBs are required to prepare DPRs for each project. Targeted beneficiaries of BSUP were slum-dwellers and other urban poor. Beneficiaries of BSUP housing had to make a payment of around 10–12% of the cost of each flat; central government paid 50% of the project cost for redeveloping the slum site, and the state and local governments shared the remaining costs.

The only CDP in the country to adopt a strong child-oriented approach is the CDP of Thiruvananthapuram, capital of the state of Kerala that upholds the participation rights of children and proposes a *Bal Nagar Sabha* (Children's Corporation) to enable poor children to participate in the city's development agenda. The city corporation is yet to implement *Bal Nagar Sabha* though several children's networks or *Bal Sabhas* are operational within urban poor neighbourhoods across the city. The other provisions for children in the CDP adopt a more protectionist approach and recommend: remedial education centres for students from urban poor families; more daycare centres for young children, more government-sponsored *anganwadis*, which are early childhood and mother-care centres among others. The CDP encourages the creation of playfields and organized open spaces for outdoor activities by bringing about 10% of the city's area under open space use. It further encourages provision of play areas and sports courts within housing.

### Local Environments of Children Living in Poverty

Within the discourse of slum improvements and upgrading, the quality of physical living environments comprising habitability of homes, liveability of the neighbourhood and so on are but footnotes in the larger concern with infrastructure improvements. The problems in the physical environment are framed through discussions on unsafe and insufficient water, lack of sanitation facilities, and overcrowded and unhealthy dwellings that make children vulnerable to disease (Bartlett et al. 1999; Satterthwaite et al. 1996). These concerns are no doubt important. However, it is important to recognize the ecological nature of children's development, which according to Bronfenbrenner (1979) consist of a multilevel, nested, dynamic system comprising a set of physical and social structures. According to this ecological framework, physical places in the system closest to the young child (the *microsystems*) comprise the home, and the social milieu comprises the family and immediate caregivers. But as the child

grows older, more places and people (e.g. school and community) are added to the child's socio-physical repertoire and more complex social factors influence their lives, such as the quality of education, parents' work, social networks, neighbourhood groups etc. at higher systemic levels. According to Matthews:

negative effects result from a microsystem characterized by a narrowly defined set of activities, impoverished environmental experiences and a lack of social interaction. In contrast, wide-ranging, enduring, and reciprocal social relationships in diverse geographical settings provide enriching environmental circumstances for the child. (Matthews 1992, 7)

Based on the theory of place friendship that uses this ecological framework (Chatterjee 2005), a child-friendly place is defined as:

an environment that promotes exploration and actualization of its many affordances<sup>5</sup> for different activities and social interactions; offers opportunities for environmental learning and competence by shaping physical characteristics of the place through repeated use; promotes children's participation in care and maintenance of the place; allows children to express themselves freely in creation and control of territories and special places; and protects the secrets and activities of children in these childhood places from harm. (p. 17)

Growing Up in Cities (GUIC), the first multi-nation comparative study on children's environments to include children from impoverished communities in assessing their own environments, was designed by Kevin Lynch during the advocacy planning movements in the 1970s. In its second edition in the 1990s, GUIC included many more low-income urban sites. The two projects that worked with slum children in India and South Africa found that children's ideas of short-term change included improvements in their immediate living environment such as improving basic services. These ideas were closely aligned with adults' visions for development of slums (Banerjee and David Driskell 2002; Swart-Kruger 2002) and contrasted with children's demands for more qualitative improvements in public places and greater involvement in decision-making in developed countries such as in Australia (Malone and Hasluck 2002).

In a study with children living in disorderly and degraded slum environments in Delhi (Chatterjee 2006), it was found that favourite places of children predominantly included formal settings such as nearby well-maintained parks that allowed contact with nature and provided affordances of play and social interactions with friends. The GUIC Bangalore study also noted that slum children had hideaways in natural spaces away from the slum (Banerjee and Driskell 2002). This raises a very important question: should future slum improvement planning be restricted only to the slum or strive to integrate the slum with the wider city? This author had pointed out elsewhere that no doubt cleanliness, safety and friendliness of the outdoor spaces in a slum are important in improving the health and well-being of children, but as slum children are not restricted to their slums in their outdoor explorations, slum improvement plans will work better for children if they integrated the slum at least with the wider local area (Chatterjee 2012).



## Urban Design Possibilities in Child-Friendly Slum Redevelopment

It is now widely acknowledged that children experience cities differently from adults, and their needs from urban space are often different from adult prescriptions for planning provisions in the best interests of children (Bartlett 1999). Buchanan (2013) admits that despite decrepit, unhealthy conditions, slums work better than state-provided replacement housing. By their very nature slums develop opportunistically in the cracks of the ordered city in vacant land in proximity to work, transit hubs, schools, healthcare facilities and markets, and they promote walking, cycling and public transport use on an everyday basis. In a way slums embody the key urban design ideas posited by new urbanism: high density, compact, walkable, diverse and multi-use, car free and transit oriented.

Kim Dovey has been a major champion of developing understanding of the morphologies of urban informal settlements which are economically, socially, spatially integrated in the urban life of most developing cities but which are subject to urban renewal time and again to improve the visual/aesthetic appeal of cities (Dovey and King 2011). A pioneer of the 'assemblage' theory as particularly developed by DeLanda (2006) based on Deleuze and Guattari's (1987) work in understanding urban informality from an urban design perspective, Dovey describes informal practices as rhizomic in contrast to the tree root-like strictures of urban regulation and planning (Dovey 2012), and the apparently chaotic and haphazard socio-spatial order of informal settlements as a sophisticated rhizomic order (non-hierarchical, heterogeneous, multiplicitous, and acentered) that had evolved through trial and error without wasting limited resources (Dovey and King 2011). Seen from this perspective the public realm in a slum permeates throughout the void where streets, common spaces of all scales merge to create the assemblage of possibilities which not only include walking, recreation, play and social interactions but also spill-out spaces for home-based work, washing, cooking, bathing, storage and many other uses. As Dovey and King (2011) point out, this "physical morphology is closely integrated with social networks, domestic economies and employment" (24).

In rethinking slum redevelopment from an urban design perspective *it is important to develop new or adapt existing frameworks that will introduce the public/common space as an important element of design without neglecting the concerns of basic infrastructures*. The idea of the 'capital web' as developed by David Crane and refined and promoted by Peter Buchanan has potential for creating such an urban design framework. The capital web comprises the public space network including open spaces, streets, pavements, parking, access to public transport, and the area's above- and below-ground infrastructure including public facilities and services such as shops and schools (Carmona et al. 2003). As infrastructure networks are key generative elements of slum redevelopment, redesign of slum space, as Graham and Marvin (2001) suggest, needs to knit buildings and common spaces with networked infrastructures and the flows supported by them. Some of the ideas put forward by Buchanan (2013) in a checklist to develop urban design criteria for the capital web may have significance for child-friendly slum redevelopment such as the ideas of *context* and *continuity* that connect the site to the elements in the surrounding city to make the most of the various opportunities; *configuration*, *choice* and *comprehensiveness* that allow for a richly configured armature or capital web



creating choice of diverse kinds of places, which can each host various functions and afford a range of experiences; *change* to allow flexibility and adaptive possibilities over time; *character* to enable the creation of positive place identities; and important place-making indicators of *community*, *culture*, *customs* and *climate*. Child-friendly urban design criteria for Capital Web are explored in Table 1 by integrating Buchanan's capital web ideas with literature on children's place relationships and experience of places. The case studies will be analyzed using this evaluative framework.

### Case Study: Karimadom Colony, Thiruvananthapuram, Kerala

Karimadom Colony, the largest and most ill-reputed slum in the heart of Thiruvananthapuram, was one of the slums taken up for redevelopment under BSUP/JNNURM. *Kudumbashree*,<sup>6</sup> the state nodal agency for BSUP that organizes women at the neighbourhood, ward and city level through self-help micro-credit groups, won three prestigious national awards and the implementing agency COSTFORD<sup>7</sup> won the national HUDCO Design Award for 2013 for Karimadom redevelopment. Karimadom is located in the heart of the city near a famous temple complex and two major sources of employment for the community: the 300-year-old Chalai market and the railway station. The pond next to the slum, originally created to improve the drainage of the temple area, over the years has degenerated into a sewage pond with frequent flooding. Across the road from the slum is a large vacant land plot which is being used as a city-level rubbish dump ever since the city's landfill became unavailable in 2011. The stench in the slum is overpowering due to these hazardous environmental conditions even after redevelopment of two phases. The slum in addition to its degraded environment, till recently, had active drug-dealing businesses that threatened the social life of the community.

### The Vision for Redevelopment

A non-profit, COSTFORD, involved with cost-effective, energy-efficient housing in Kerala prepared the DPR for Karimadom redevelopment. Laurie Baker, founding chairman of COSTFORD, and renowned for his contribution to contemporary vernacular architecture in Kerala, had developed some ideas for spatially reorganizing slums into apartment blocks in the mid-1990s that stepped back like "seats in a stadium" to create terraces on one side overlooking community open spaces. Baker's sketch of these blocks (Figure 1) resemble the pattern for the "housing hill" proposed by Alexander, Ishikawa, and Silverstein (1977), where it is recommended, "to build housing three or four stories high, build a hill of houses. Build them to form stepped terraces, sloping toward the south, served by a great central open stair which also faces south and leads toward a common garden [...]" (p. 214).

Baker argued that replacing existing dense huts with four-storey walk-up apartment blocks would free up much needed ground space for gardening, cattle and recreational uses. He even promoted mixed-use buildings that integrated schools, community centres and clinics. Baker had used these ideas to create a redevelopment proposal for Karimadom which unfortunately he did not live to see realized. Sensing an opportunity in BSUP, COSTFORD, which was already advising the Kerala government on slum redevelopment, convinced the city

Table 1. Evaluating case studies from a child-centred urban design perspective.

Urban design criteria selected from Buchanan (2013) for capital web	Child-centred Capital Web considerations after Buchanan (2013) and using the framework of children's friendship with #place (Chatterjee 2005, 2006)	Karimadom	Gandhi Nagar
Context and continuity	The project should not be a disconnected island but be connected to the elements in the surrounding city to make the most of the various opportunities in and around the local area	Children negotiate heavy traffic streets with no pavements, no marked pedestrian crossings, inadequate streetlights and traffic lights to walk or cycle to nearby schools and evening tuition classes in adjacent neighbourhoods. Some adolescent boys visit other parks, open spaces and natural areas in the locality (Figure 12). Some boys had a secret place named 'Paradise' that they used to frequent to escape the slum. Paradise comprised a series of vacant lots with tall coconut trees and grazing cattle along a dead-end street. However, Paradise is shrinking due to the pressures of urbanization and losing its charm for the boys	Children from Gandhi Nagar seek out play and recreation opportunities in parks and playgrounds, vacant land and dilapidated properties outside the slum at times travelling 2 kilometres away from their homes on foot crossing heavy-traffic streets and taking unnecessary risks (Figure 13). An integrated planning approach could have provided safer access to the parks, playgrounds and markets in the local area which commonly attract children from resource deprived slums
Configuration	Children in urban poverty spend a fair amount of time outdoors in different places in the local area to avail facilities that are lacking in their neighbourhood Urban design is the art of creating a richly configured armature or 'capital web' of movement and green space systems interwoven to create as many qualitatively different places and locations as possible	New BSUP blocks were located on artificially raised ground to prevent flooding and no attempt was made to integrate the low-lying public spaces between the older government housing already present in the heart of the slum. This has resulted in dangerous differences between levels and an unfinished, debris-strewn and rubbish-cluttered open-space system (Figure 14) that puts children at risk of injuries while using their local area	As the redevelopment selectively tore down existing houses and built on their footprints, the public space was untouched and thus unimproved

Numerous, interlocking, diverse places, rich in affordances of doing in the local area that children themselves explore, engage with and develop emotional and affective relationships with, comprise a child-friendly capital web and local environment

Choice

A rich capital web creates choice of diverse kinds of social and physical places that provide as wide a range of functions and experiences as is appropriate for all the different ages and stages in people's lives that it must host

In the configuration of their new four-storey flats children are disconnected from the habitual play spaces of the streets, nearby open spaces and close friendship networks; house-level small terraces are no replacement for these community spaces and friends now live in blocks far away due to random allotment of flats. The lack of understanding of how children actually use public space resulted in undefined open spaces between freestanding blocks, forcing children to play in the rubbish-strewn clearing near the pond or in the broken rough ground near the old government housing or on the main street where fights between different groups are common (Figure 13). The open space next to the community hall was designated as a playground for children by the local councillor, but it soon degenerated into a rubbish dump. For girls with limited mobility licences, hanging out with friends immediately outside the block or playing on terraces and in front of the *madrasa* (a non-formal school for Islamic studies for children) are the few options

The wide, paved or concrete roads with closed drains that were created prior to BSUP afford a safe place to play close to home. Young boys and girls can be seen playing a variety of games in the streets (Figure 15). However, certain practices of the community such as: washing clothes in the streets, which women and men were averse to doing in en-suite toilets using the metered water at home (Figure 16); heating water in firewood stoves outside homes instead of using expensive cooking gas in the kitchen; and throwing rubbish in the streets after they had been picked up for the day make the streets unsafe and inadequate for children's activities. There are no open spaces in Gandhi Nagar nor did the BSUP-funded slum redevelopment create new or enhance existing play spaces by introducing new features or settings

(Continued)

Table 1. (Continued)

Urban design criteria selected from Buchanan (2013) for capital web	Karimadom	Gandhi Nagar
Child-centred Capital Web considerations after Buchanan (2013) and using the framework of children's friendship with #place (Chatterjee 2005, 2006)		
The rhizomic and often car-free spaces of slums better support the explorations and activities of children than planned purified neighbourhoods in Indian cities. Typically, slums offer plentiful affordances for creating play territories such as through abundant loose parts in informal spaces and allow children to claim less developable leftover open spaces through spontaneous outdoor activities. From an environment-behaviour perspective such public realms would be considered child friendly		
Community	<p>In keeping with Baker's ideas, COSTFORD had proposed much new social infrastructure targeting children and women such as <i>anganwadis</i>, study centres, women's work centres and market kiosks for women to sell vegetables in a bid to make the planned redevelopment more inclusive. At the end of two phases, only one <i>anganwadi</i> and one market kiosk have been built with no concrete plans for the others. No attempt was made to improve the existing community hall, health centre and the daycare centre, which are now an integral part of the community life. Nor was any attempt made to incorporate the many small businesses and home-based enterprises through mixed-use planning and mixed-use buildings</p>	<p>Even though Gandhi Nagar has two existing <i>anganwadis</i>, one is a bare hall for multipurpose use and the other a badly maintained rented space with many environmental hazards for young children. A gym is present in Gandhi Nagar, but it has no equipment. No audit of existing social infrastructure was done prior to development, which prevented existing facilities from being upgraded under BSUP</p>

*High density, mixed use and informal design* are conditions that allow the coexistence of adults and children, work and play, pedestrians and smaller vehicles in the same space inside most Indian slums, and these conditions often make non-planned communities more vibrant than planned purified ones

Character and place identity

The armature or capital web is designed not only for function and flexibility but also to confer a memorable character and place identity, which may enhance quality of life and offer a competitive advantage over other locations

Children from the new flats typically wanted to stay in Karimadom when they grew up to remain close to friends and family. They felt that their local environment was improving and shedding the image of a 'slum' and that of a dangerous place as the drug trade had been eradicated from the community through women's proactive involvement before and during the redevelopment process

Despite the positive attributes of infill redevelopment, children of Gandhi Nagar pointed out that the new housing created houses "better than the previous house but the environment has not changed". Lack of focus on overall environmental improvements is inevitable when the approach to *in situ* redevelopment simply replaces '*kutcha*' houses with '*pucca*' ones and when the participatory process only focuses on the domestic space within the footprint of the house. Children wanted to move out if possible saying: "After all this is a slum area, who would like to stay here forever? Even after redevelopment this is still considered a slum. If I stay on, I will spend my whole life in a slum"

The character of their living environments is crucial for children's emerging place identity, which is a substructure of the self-identity of the person consisting of broadly conceived cognitions about the physical world in which the individual lives

(Continued)

Table 1. (Continued)

Urban design criteria selected from Buchanan (2013) for capital web	Child-centred Capital Web considerations after Buchanan (2013) and using the framework of children's friendship with #place (Chatterjee 2005, 2006)	Karimadom	Gandhi Nagar
Culture and customs	Cultural traditions—of decorum, privacy, gender roles etc.—can be major determinants of urban form, particularly of the shaping of the public realm and its uses	Karimadom has a majority Muslim population (57%). Most children awaiting new flats considered the <i>madrasa</i> at the heart of the existing slum a good place for them as girls to hang out in the evenings. The <i>madrasa</i> this was a legitimate social space for boys and girls was especially important to girls as this was the only institution outside of school they had licence to attend. When this part of the slum is redeveloped in phase four, no <i>madrasa</i> will be provided. Even though gender separated study centres are proposed in the layout, these are not the same as the <i>madrasa</i> where Muslim boys and girls legitimately come together and study the Koran and engage in after-school activities in a shared space. It is one of the few child-friendly places in Karimadom that allows children to participate in cultural practices of the community and create their own childhood cultures	Adolescent girls, with a limited range of independent mobility outside their neighbourhood, perceive the public realm of their local area as an unsafe and restrictive space. They repeatedly complained about lack of mobility and safety even within the neighbourhood due to lack of safe, well-lit outdoor spaces and community facilities for socializing. The rampant alcoholism within the community often leads to violence in public spaces and sexual harassment of women and girls.



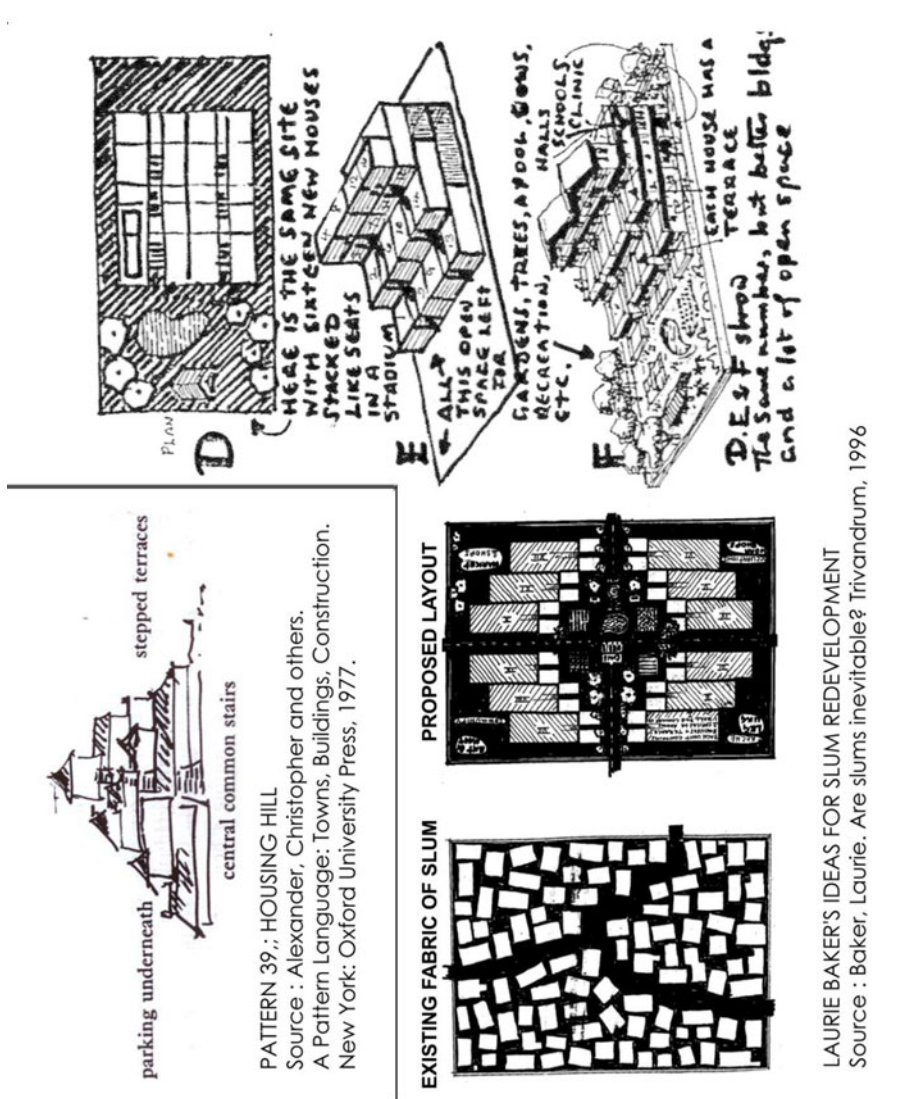


Figure 1. Ideas shaping the slum replacement block at Karimadam.

municipal corporation to include Karimadom for redevelopment under BSUP. COSTFORD could quickly produce the DPR for redevelopment using the findings of a primary survey and Baker's ideas.

### The Consultative Process

In 2008, several meetings were called by the local elected representative in the Karimadom community hall to fulfil JNNURM's mandate of citizen consultation for project development. COSTFORD, municipal officials and mostly women from the self-help groups attended these meetings where drawings and models of the redevelopment proposal were shown. Initially the community had several reservations but through negotiations issues were sorted out. However, *people's feedback was not taken regarding the house design and so no modifications were made.* Children also attended these meetings with their mothers, but only as silent spectators. According to the president of the most active *Bal Sabha* in Karimadom who was present at the meetings with her mother, "No one allows children to speak up, children are only meant to listen to elders here."

### Vision to Reality: How Child Friendly is Karimadom Redevelopment?

The project included housing for 560 families in apartments. COSTFORD developed Baker's sketch for the typical block (Figure 1) and created a site plan housing 28 blocks each with 20 flats with a 31 m<sup>2</sup> floor area plus terraces in 50% of the flats. The central open space as originally envisaged by Baker and mentioned in the DPR as a children's playground/social gathering space was done away with. Instead spaces generated between blocks were considered to serve those functions. Blocks were scattered all over the site without any attempt to create streets or courtyards or well-defined open spaces. Karimadom redevelopment was to be carried out in a phased manner in four phases (Figure 2), of which two phases were completed by 2012 (Figure 3).

On the positive side, the Karimadom redevelopment provided larger more habitable apartments to slum-dwelling families than in previous government housing projects in the slum. Even though children living in the existing slum felt that the slum was a better place to live because streets near home were available for playing (Figure 4) and many of them claimed to have larger homes than the BSUP flats, in reality the larger homes were occupied by large extended families and many streets were in hazardous condition (Figure 5). The Municipal Corporation allotted flats by households, which resulted in large families getting several flats on payment of the beneficiary's share for each flat; the record being seven allotments to one family.

Improved water supply and sanitation were provided in the new housing, which was appreciated by children, particularly girls. Children who were still living in the old slum repeatedly talked about frequent fights over rubbish in common space; the rush to fetch water in the morning from the public standpipe which resulted in them being late for school; and dirty drain water overflowing and flooding their houses during the rainy season. In contrast, children living in new flats had positive things to say about their lives and the new houses. Two 15-year-old Muslim girls said, "We very much like our new house. Very much. All amenities are there." When asked to compare the new house with the old one, one explained how she used to feel unsafe going to the public toilet at night and hated



Figure 2. Phased proposal for Karimadom redevelopment.

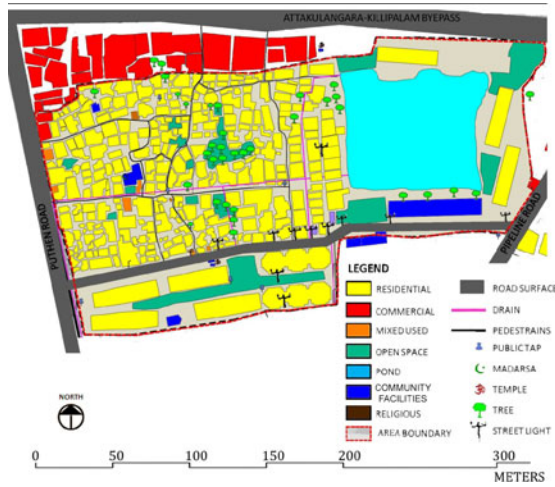


Figure 3. Status of redevelopment in 2012.



Figure 4. Children playing in the streets of the existing slum in Karimadom.





**Figure 5.** Hazardous condition of some existing streets.

collecting water from the standpipe in buckets. The new house was also less crowded as her extended family received three flats. Children from the new flats typically wanted to stay in Karimadom when they grew up to stay close to friends and family. They felt that their local environment was improving and shedding the image of a 'slum' and that of a dangerous place as the drug trade had been eradicated from the community through women's proactive involvement before and during the redevelopment process.

The replacement buildings at Karimadom are aesthetically designed, well constructed, fire safe and flood safe. The architectural design of this project is far



**Figure 6.** Occupied Phase 2 buildings of Karimadom redevelopment.

superior to any other BSUP project in the country. COSTFORD has indeed been able to deliver good-quality affordable housing built in the best traditions of contemporary Kerala vernacular architecture and thus provided a new landmark for the city (Figure 6). In fact the residents feel very proud that they now have a living environment that is on a par with most middle-class neighbourhoods. Property values have shot up since redevelopment started. Fearing gentrification, the municipal corporation has withheld the ownership papers of the flats for seven years to prevent selling and moving out by beneficiary families.

### Limitations of the Project

The majority of the slum, despite the awards, is yet to be redeveloped as only seven of the 28 proposed blocks had been constructed by 2012, at the end of JNNURM phase I (2005–12). The majority of families and children are still living in the slum, including the most deprived families whose houses are to be developed in phase four which may never get built due to the current political apathy towards completing the project. No attempt was made to better integrate or connect Karimadom to the nearby markets, transport hubs, schools and workplaces. The proposal was for an island development replacing a slum with imageable apartments behind the streetwall of high-density commercial plots.

A total redevelopment approach even when done in phases requires a clear site. The first two phases of redevelopment were relatively unproblematic as houses were built in the clearing near the older government housing and by removing the few hutments from the northern and eastern sides of the pond (Figure 7). Later phases involve clearing dense slum hutments on the eastern side of the pond and north of the main street. The local corporation provides an opportunity to slum-dwellers to vacate and demolish the houses themselves by a deadline, failing which the huts are forcefully demolished. The courts and other locals availing BSUP houses support the local corporation in this. At no stage did the project proponents consider an *in-situ* selective infill design replacing obsolete structures on the same footprint. Nor was an off-site relocation considered for this site next to a sewage pond, which would have qualified the slum as untenable for onsite redevelopment under JNNURM guidelines. Extra attention and care were needed in mitigating the environmental and health hazards posed by the sewage pond before implementing the *in-situ* redevelopment. Consequently, children of Karimadom are exposed to risks of vector-borne diseases and preventable injuries

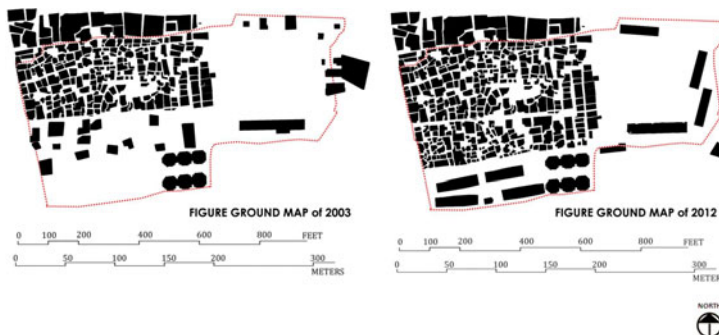


Figure 7. Figure grounds from before BSUP and status of redevelopment in 2012.

while playing outdoors in unhygienic and unsafe environments. Honouring the legacy of Baker and realizing an interpretation of his redevelopment proposal for Karimadom were priorities.

### Case Study: Gandhi Nagar, Pune, Maharashtra

Gandhi Nagar is considered a success story for infill housing by NGO MASHAL,<sup>8</sup> which had implemented several BSUP projects in Pune. Initially the Pune Municipal Corporation (PMC) wanted to relocate the slum-dwellers in state-built, off-site, multi-storied apartment blocks and MASHAL was contracted to mobilize the relocation of the community. On finding slum-dwellers reluctant to relocate, MASHAL suggested to PMC to adopt an infill housing approach. MASHAL helped PMC in preparing the Detailed Project Report (DPR) under which *kutcha* slum structures on government lands would be converted into *pucca* structures with the involvement of the beneficiaries using BSUP funds.

Today, Gandhi Nagar resembles a low- or even a middle-income neighbourhood more than a slum (Figure 8) and stands out in its ward, Yerwada, which is the most slum-filled urban ward of Pune. The local corporators in Gandhi Nagar, particularly corporator Gangaram, were instrumental in transforming the colony from a slum with *kutcha* houses and no physical infrastructure to one with neat rows of mostly double-storey houses, a closed drainage system, an underground electricity network, an underground water supply and a telephone connection network. Most of the houses in the community are *pucca*, built either under BSUP or by using funds from previous government slum-upgrading programmes (Figures 9 and 10). There are toilets and kitchens in all new BSUP houses.

The community was mobilized and involved in every aspect of the development over many years. As Gandhi Nagar was pressed for space by new



Figure 8. Gandhi Nagar neighbourhood character.



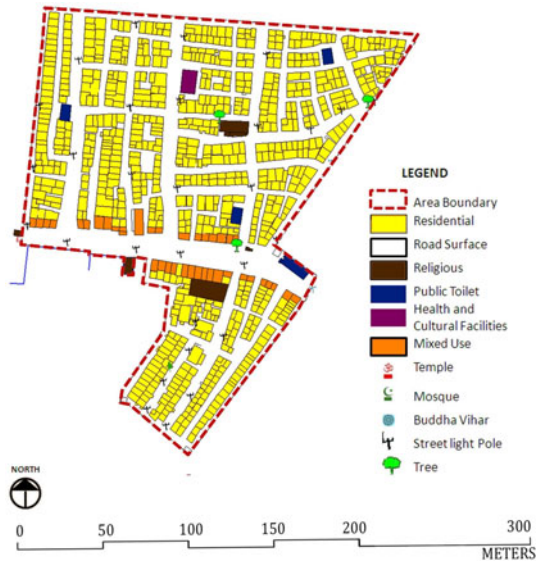


Figure 9. Gandhi Nagar land-use plan.

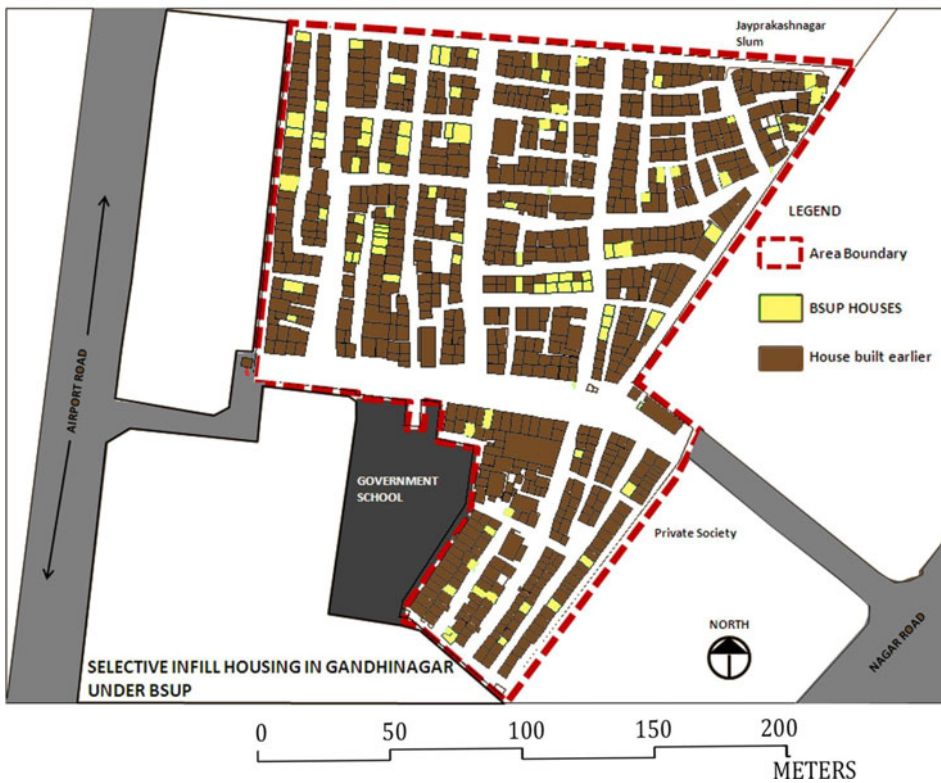


Figure 10. Selected infill housing under BSUP in Gandhi Nagar.

migrants, the local corporator encouraged people to build their houses according to a prescribed layout and not to encroach on drains. He even convinced people to give up some portion of their land to maintain wide and organized roads in the community. However, as figure grounds from 2003 and 2012 show, no attempt was made to create any open spaces or community spaces in Gandhi Nagar (Figure 11) other than imposing a more orderly street network. The community-centred development process preceded BSUP and benefitted from many government programmes as the community had a blueprint for development that was locally developed based on regular assessment and monitoring of mostly local infrastructural issues.

**Consultative Process**

For the implementation of the BSUP project several meetings were held between the beneficiaries, elected local representatives, NGOs and government. A meeting was held every 15 days to explain the design typologies, architectural models and to incorporate the design changes suggested by the beneficiaries. As people were deeply involved in design, each house was custom designed according to its footprint with adaptive possibilities built in. Today many internal adaptations are visible typically for the purpose of subletting. Despite an active and committed corporator, an Urban Community Development cell within the Pune ULB, several highly engaged Resident Community Volunteers and NGOs involved with community development and community mobilization, children and youth in Gandhi Nagar had no formal platform for participation unlike in Thiruvananthapuram.

**How Child Friendly was Gandhi Nagar Redevelopment?**

Incremental redevelopment efforts over the years including BSUP have managed to create better physical infrastructure and housing in Gandhi Nagar. Children

**FIGURE GROUND MAPS of GANDHINAGAR**



**Figure 11.** Gandhi Nagar figure ground drawings before and after BSUP.



This map illustrates the movement patterns of children in Netaji Park, highlighting areas of daily use, schools, and potential hazards. The map includes the following features:

- Legend:**
  - Children's movement path (Yellow line with arrows)
  - Areas children daily visit (Green shaded areas)
  - School (Triangle icon with a person)
  - Dangerous road Crossing (Red circle with a cross)
  - Traffic Hazard (Orange zigzag line)
  - Market / Bazaar (Red line)
- Key Locations:**
  - Netaji School
  - Jayprakashnagar
  - GANDHINAGAR
  - VACANT GOVERNMENT LAND USED AS PLAYGROUND
  - BEAR ROAD
- Map Features:**
  - A yellow line with arrows indicates the children's movement path, starting from the bottom left, passing through the playground area, and heading towards the school.
  - Green shaded areas represent areas children visit daily, including the playground and the area near the school.
  - Red circles with crosses mark dangerous road crossings.
  - Orange zigzag lines indicate traffic hazards, primarily along the path and near the school.
  - A red line indicates a market or bazaar area on the left side of the map.
  - A north arrow and a scale bar (0 to 300 meters) are provided for orientation and measurement.

**Figure 13.** Nearby places visited by children outside Gandhi Nagar.



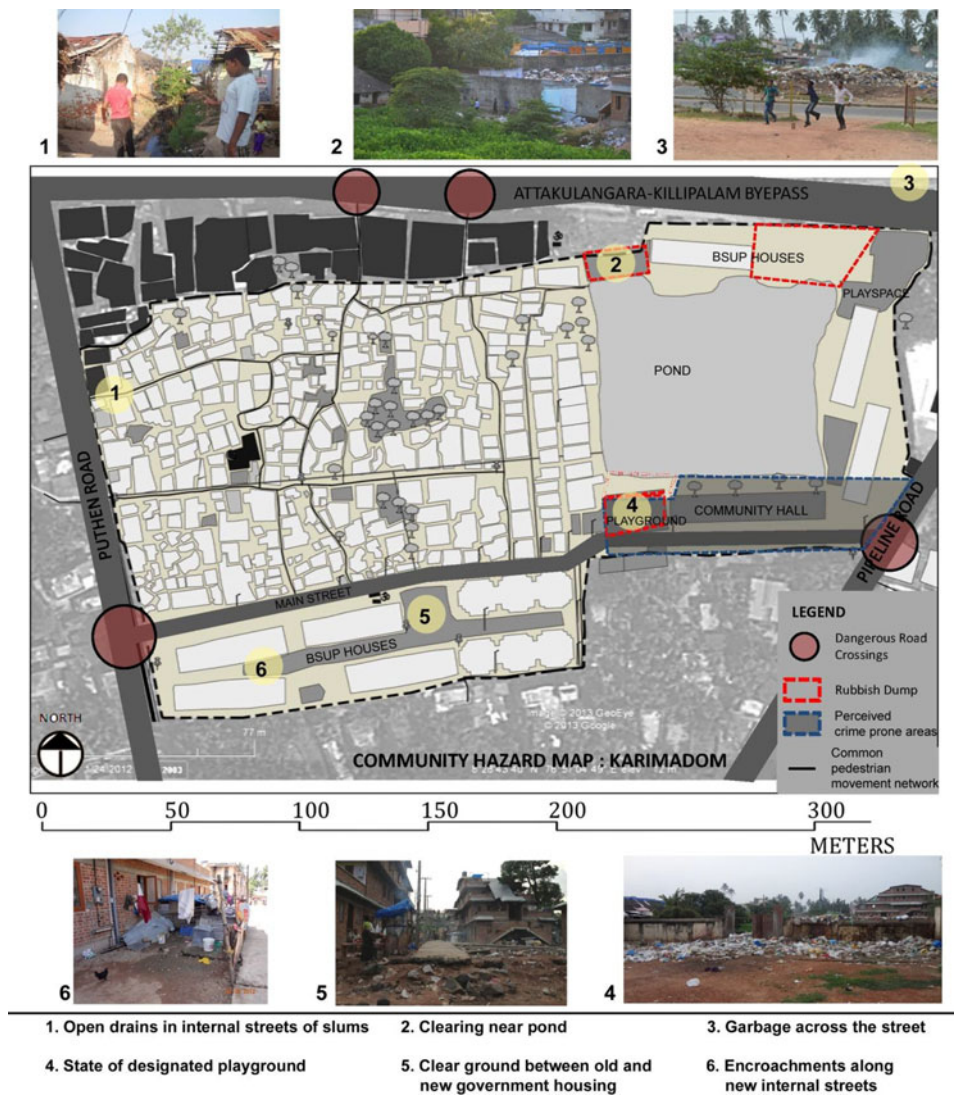


Figure 14. The hazard prone urban space of Karimadom.



Figure 15. Habitual play space inside Gandhi Nagar.



Figure 16. Streets often inadequate for play.

old Praveen also feels good about his improved living environment. According to the girls, the best aspect of the redevelopment is the piped water connection and toilets at home. Now they do not have to stand in a queue at public toilets or at community standpipes for water. The new houses have raised plinths to prevent flooding; in the words of one of the boys, “it feels nice to sleep peacefully at night without fear of our homes flooding”.

Though children did not participate in the redevelopment process or in designing houses, they had strong views about the type of redevelopment that had taken place. According to both boys and girls the residential blocks with flats promote alienating environments marked by social isolation. Most houses in Gandhi Nagar follow an open-door policy where neighbours are welcome to walk in anytime and the community helps each other in times of need. In infill housing as was done in Gandhi Nagar, social cohesion is strengthened with trusted neighbours and not strangers living next door. Children were in favour of the redevelopment typology in Gandhi Nagar.

### **Comparison of Case Studies from a Child-Centred Urban Design Perspective**

Karimadom redevelopment when reviewed from the perspective of children’s well-being fails at many levels. As also Gandhi Nagar, which in spite of being an excellent example of a community-driven process-oriented participatory slum redevelopment, when reviewed from the perspective of child rights, fails children in several ways. For a critical analysis of Gandhi Nagar redevelopment in comparison with Karimadom redevelopment from a child-centred urban design perspective, see [Table 1](#).

### **Discussion**

In slum-upgrading literature, infill housing is considered a better option as it allows continuity of life, livelihood and social networks of communities. However, ULBs across India preferred to build apartments through total redevelopment of the site using JNNURM/BSUP funds, despite residents preferring an infill-plotted housing model as they consider those to be better suited to their lifestyles. Total redevelopment completely erases the dynamic, multi-use, rhizomic spaces of the existing slums and habitual play spaces and everyday territories of children and is inevitably facilitated through forced evictions as was evident even in the most awarded BSUP project at Karimadom. Architects, planners and government functionaries are more comfortable with the total redevelopment approach as it fits their imagination of ‘planned urban development’ as mandated by JNNURM for decongesting existing slums by freeing up some ground space. It is also easier for ULBs to control this top-down planning model as opposed to a bottom-up, participatory community-driven process which according to many ULBs delay project schedules with inevitable implications for funding flows from central government that are based on timely delivery of maximum possible housing units (and with no accountability for quality). As BSUP is a programme under the Ministry of Housing and Poverty Alleviation, new flats on well-serviced land are seen as a way out of poverty, as an enabler of a more dignified way of urban living (as per middle-class value systems) and as contributing to the real estate of the city. Even though both the project typologies studied here offered slum-dwellers secure tenure and better

infrastructure, it was evident from people's perceptions that a formal planned order, particularly if it produced architecturally aesthetic buildings, is more desirable for the transformation of place identity, which is a substructure of the self-identity of the person consisting of broadly conceived cognitions about the physical world in which the individual lives (Proshansky, Fabian, and Kaminoff 1983). Even though selective infill strategies produced environments better suited to the lifestyles of the urban poor, with no focus on the aesthetic quality of housing and public places, they were unable to erase the negative symbolic identity of a 'slum' as a ghetto of underdevelopment.

This dominant narrative has been internalized by children as well. In Karimadom children wanted to remain in the neighbourhood as the neighbourhood is no longer a 'slum' because the image of the physical environment has changed substantially through the creation of good-quality buildings that look like some of the best Baker-designed landmarks in the city. However, as the urban space does not adequately cater to social and cultural needs of children and the apartment designs fail to integrate home-based work, encroachments and building modifications have started which will lead to a change of character and ultimately place identity; it is to be seen how children feel about the development in future. In Gandhi Nagar the character of the slum has not been significantly transformed after redevelopment. Children wanted to move out as they considered the neighbourhood still a slum despite Gandhi Nagar's stand-out redevelopment achievements within its ward. Children continue to struggle psychologically with their place identities in Gandhi Nagar mostly due to the persistent negative image of the larger context of the ward, Yerwada, which is known as the slum ward of Pune.

At the visioning stage of both BSUP projects no attempt was made to include girls and boys in planning and design processes to understand their concerns and needs from the local area and the city. A consequence of this is the lack of adequate play, recreation and socialization spaces in both slums. Play and recreation are now recognized as important forms of social participation of children in the community (UNCRC General Comment No. 17, 2013) and it is the responsibility of local governments and communities to promote these rights through adequate provisions. Local governments and community groups including NGOs were the most important actors in delivering BSUP housing and, hence, the responsibility for providing for children is upon them. From an ecological perspective, diverse geographical settings in the neighbourhood, local area and the city are needed to enrich the socio-physical environmental repertoire of children to engage progressively in more complex reciprocal interactions with people and places according to the age and competence of the child. As this research found out, what children wanted in these two BSUP sites has strong parallels with the child-generated indicators for a good place to grow up established by GUIC-II: freedom from social threats, a positive community identity, secure tenure, and positive physical attributes such as peer-gathering places, different activity settings, green areas, a safe hazard-free environment, freedom of movement and the provision of basic services (Chawla 2002).

In both case studies, the projects were disconnected from their surroundings. Children in both Karimadom and Gandhi Nagar actively used the local area beyond their housing area to avail facilities that are lacking in their neighbourhood. Even after redevelopment due to lack of child-friendly spatial provisions, children step out of their neighbourhoods to access resources in the



wider local area. As slum redevelopment projects, irrespective of their typologies, are often unable to provide a choice of diverse kinds of places, they at least need to allow children to move independently and safely through urban public spaces within and outside the local area.

## Conclusions

India has an unrivalled youth demographic. However, the country pays little or no attention to children and youth in urban development and planning of cities including slum redevelopment, despite the fact that millions of children are growing up in slums and other adverse living environments across India. This directly violates the rights of many children to an adequate standard of living. Vast social engineering programmes of poverty eradication through the provision of housing and infrastructure to the urban poor such as the JNNURM-BSUP are using binary business consultancy urbanism (a phrase coined by Ash Amin 2013) models of total redevelopment in flatted projects or selective replacement housing to redevelop the informal slums with little consideration for children's needs and rights, as shown in these case studies.

Architects and urban designers predominantly use formal, top-down techniques in slum redevelopment that favour control and purist order over the evolving, adaptive, self-organized systems of informal settlements. With this approach, Indian cities run the risk of not becoming slum free but creating new ghettos of poverty that are caricatures of middle-class housing. There is much to learn from spatial organization tactics of informal morphologies that promote diverse, networked adaptable common spaces, multiple play territories and flexible home environments which accommodate extended families, work and subletting opportunities. Future research needs to investigate design possibilities for producing flexible, adaptable and resilient slum redevelopment models which will address these issues as well as the other important issue of place identity, which itself is linked to the quality and aesthetics of the built environment. In the current models, the resultant environments remain stigmatized (particularly in infill housing), polluted and degraded (in both models) as the focus of improvements rarely enhance the overall quality of the environment of the site and its surroundings.

What does formal planned order really offer children in slum redevelopment projects? In both projects the spaces available to children were inadequate and often exposed children to environmental and social hazards. The most awarded BSUP project, Karimadom, has failed children and families in many ways in giving primacy to the prototypical housing hill form while compromising on other elements of Baker's vision which included infrastructure networks as other key generative elements of slum redevelopment. If indeed all Baker's ideas for promoting gardening, cattle rearing and recreational opportunities in open spaces, the inclusion of shops and markets and mixed-use buildings that encouraged home-based work, and the implementation of small businesses, the urban space of Karimadom in knitting buildings and common spaces as a richly configured capital web would have created many different kinds of activity settings and worked as an assemblage of possibilities for children to explore and act on. In Gandhi Nagar, the improvement in networked infrastructure did not include community facilities or public places in keeping with trends in infill housing in Indian slums where only the structure of

the domestic environment is transformed with incremental improvement possibilities. However, for children and their families to develop positive place identities in these local environments may require investing in qualitative improvements in community facilities, open-space networks, public places, access conditions to the slum, and urban improvements in the slum's local context such as the ward, to transform the symbolic image of the slum as a place of underdevelopment.

Despite the spatial constraints, a more child-centred environmental design approach is needed in future slum redevelopment in India to configure layouts that offer choice; allow change; and are comprehensive, culturally appropriate, climatically responsive and well integrated into the local area. The capital web of such environments should secure habitual play spaces of children by improving the quality of common spaces and existing community facilities; and promote many more new places of doing for children and the community while strengthening the link between the community and the city. In delivering better cities through ambitious social engineering projects India has no option but to cater to the youth demographic and mainstream children and youth concerns by directly involving children in planning and design and make children and young people matter in city-making and slum transformations.

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### Notes

1. Infill housing in this context involved selecting obsolete or impermanent or makeshift structures and replacing them with a new house of floor area 270 square feet on the vacated site.
2. The Hindi word *pucca* means stable, permanent. A *pucca* house is a superior house made of durable materials such as bricks, stones, reinforced cement concrete etc.
3. The Hindi word *kutchra* means crude or rough and when used in the context of housing refers to a house, the walls and/or roof of which are made of easily available, cheap, fast-decaying materials such as unburnt bricks, bamboo, mud, grass, reeds, thatch, loosely packed stones etc. The BSUP infill housing projects sought to replace *kutchra* houses with *pucca* ones.
4. Five Year Plans are centralized and integrated national economic programmes that guide India's economic development monitored by the Planning Commission.
5. Affordances are meaningful information about functional possibilities that a person picks up from the environment and may use them to fulfil some need, activity or interest. Places that afford doing things in it and with it interactively engage children.

6. Kudumbashree is a society comprising local women's groups at the neighbourhood, area and ward level in Kerala that serves as the community wing of Local Governments. It plays significant roles in development activities, particularly as the state nodal agency for all poverty eradication programmes.
7. COSTFORD (The Center of Science and Technology for Rural Development) is a non-profit organization based out of Kerala working towards improving the lives of the poor by applying appropriate technologies in construction.
8. MASHAL (Maharashtra Social Housing and Action League) is an NGO based in Pune. It primarily works in the area of housing for the urban poor.

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