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AN ENQUIRY INTO SPATIAL ATTRIBUTES OF THE URBAN: RURAL TRANSIENTS IN INDIA.

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ABSTRACT | The developing world is currently undergoing a great rural to urban migration. It is a necessary and inevitable trend, yet failures of urban planning and political consideration result in diminishing opportunities for the rural migrants. Activist architecture that attempts to deal with these problems is often focused on the physical manifestation of the failures of this arrival process: the urban slum. This paper explores the lived experiences and practices of seasonal migrants who come from the tribal borderlands of central India to work as construction workers in the city of Ahmedabad. The case study attempts to understand the factors and dynamics that shape these seasonal migrants' housing experiences, practices, choices, and constraints in Ahmedabad. These migrant colonies generate a Kinetic City¹; an incremental city in motion, characterized by reusing easily available construction materials on and around the worksites, bursting with constant modification and reinvention through the practice of Jugaad Urbanism. These quick fix colonies are highly suffering from a lack of any basic infrastructure. Access to basic services like water and sanitation is lacking or profoundly inadequate in most instances while access to social infrastructures of health and education for their children is a major challenge. With interventions in Indian cities being driven by exclusive imaginations of "global cities" and "world-class infrastructure," and more recently of "smart cities," these urban migrants have often been thrown by the wayside. The root of the problem lies in social and political acceptance and interventions. The onsite living conditions of the migrants are mapped taking in consideration 5 representative construction sites in Ahmedabad. Here the documentation communicates the spatial configurations, fundamental materials and structure used in these colonies and throughout the Kinetic City. The mapping documents the struggle to employ architecture as a means of achieving a desired standard of dignity for the migrants. The study concludes stating a need for solutions which anticipate and make room for the innovations of Jugaad Urbanism², employing local techniques and incremental improvements, rather than by imposing a one-off, technologically advanced solution not forgetting that addressing basic necessities of accommodation and sanitation is of utmost importance. The research emphasizes the need to address both on-site living conditions and housing arrangements made by workers at labor "Nakas"³ in cities. It builds upon earlier recommendations emphasizing the essential role of political and administrative commitment as well as advocacy and mobilization of migrant workers.

¹ Kinetic City - The Kinetic City is not perceived as architecture, but in terms of spaces, which hold associative values and supportive lives. Patterns of occupation determine its form and perception. It is an indigenous urbanism that has its particular 'local' logic. It is not necessarily the city of the poor, as most images might suggest; rather it is a temporal articulation and occupation of space that not only creates a richer sensibility of spatial occupation, but also suggests how spatial limits are expanded to include formally unimagined uses in dense urban conditions. (Mehrotra, 2018)

² Jugaad Urbanism - The spirit of jugaad urbanism, is defined by Argawal as a "resourceful and innovative bringing together of disparate parts." The strategies go beyond "making do" and improve and reveal new possibilities within the existing realities of urban life. Jugaad "thinks beyond the object," stated Argawal. They engage with the surrounding "urban milieu" to harness the energy of the street, which is perhaps the most critical resource of all. (Argawal, 2011)

³ Nakas - (India) A place where workers assemble to seek employment. (Wikipedia, n.d.)

1. Introduction

India is one of the most populous countries in the world consisting almost one-sixth of the world's population. According to UN estimates, India overtook China in having the largest population in the world with a population of 1,425,775,850 at the end of April 2023. (Metrics, 2023) Indian cities are also growing at an exceedingly fast rate; in the period from 2001 – 2011 the urban population grew from 286 million to 377 million, and is expected to rise to 600 million by 2030. (UNDESA, 2023) With this rapid urbanization, comes the demand for mass housing to cater to the growth of a new middle class⁴. This has resulted in an abundance of large-scale gated communities situated around the outskirts of cities throughout India. The rate at which these developments are being built comes at a cost; the construction industry thrives on exploitation of migrant construction workers and maintains a low standard of building construction. Construction workers constitute one of the largest segments within the service provider community in urban areas, yet their significant contribution to the economy often goes unnoticed, mirroring the plight of many informal sector workers. In Ahmedabad alone, there exists an estimated population of 100,000 construction workers, more than half of whom are seasonal migrants from both intra-state and inter-state regions (Homeless, 2013). Originating from tribal districts of Gujarat, Rajasthan, and Madhya Pradesh, as well as other states such as Maharashtra, Uttar Pradesh, Bihar, and Jharkhand (Desai, 2020). Many of these workers have been integral part of the city's construction landscape for over a decade. Typically, they spend anywhere from 6 to 10 months in the city, periodically returning to their villages for short durations ranging from 15 days to a couple of months during festive seasons and the period of agricultural activities (Homeless, 2013). Despite the essential role of these migrant construction workers in shaping the urban environment, the intricate dynamics of their employment, migration patterns, and their housing needs within the city remain poorly understood.

Although laws exist for the rights of construction workers, systemic corruption impedes enforcement for these laws (Homeless, 2013). These workers will move with the contractors not only within Ahmedabad, but also to other cities. The workers belong to the most poor and disadvantaged sections of Indian society, the majority from poorer states, such as Uttar Pradesh and Bihar as well as bordering states such as Rajasthan and Maharashtra. (Desai, 2020) Migration provides survival to these workers and their families, but also exposes them to a cruel and vulnerable existence. As these workers are in a setting far from their place of origin, they stay at the construction sites in labor colonies. The labor colonies are made up of individual Jhuggis⁵, where living conditions are so poor that they deprive the workers of basic human dignity. The living conditions these workers are subjected to are harsh and require architectural interventions.

⁴ New middle class - The 'new middle class' in India refers to the socio-economic group that emerged in the post-liberalization era of the 1990s, characterized by rapid economic growth, globalization, and the rise of the service sector. This group has experienced significant upward social mobility and has become an influential force in shaping the social, cultural, and political landscape of India. (Fernandese, 2016)

⁵ Jhuggis - a house, usually made from mud and or sheets of iron, that is dirty and in bad condition, and located in a very poor area of a city. (Oxford Learners' Dictionary, n.d.)



Figure 1. Accommodation built by one of the RCC – Masonry – Contractors in Ahmedabad for a project duration – 3 years.

2. The Documentation of Conditions at the Construction Sites

2.1 Mapping the Scenario of Construction Sites in Ahmedabad

There is no reliable data to estimate the scale of construction activity in Ahmedabad and its peri-urban area, finding the actual the number of construction sites is also difficult in comparison with the number of sites registered.

I draw upon the following dataset to provide a picture of the number of construction sites in Ahmedabad:

This data-set consists of construction sites registered in Ahmedabad district under the BOCW Act 1996⁶ (see Table 1). Construction sites which employ ten or more building workers for any building or construction work and where the total cost of construction is more than INR 1,000,000 are required to be registered under the BOCW Act. (bocw-act, 1996). The registrations under the BOCW Act are done district-wise and the data is not available at the city level, therefore, the data is presented for entire Ahmedabad district, which covers an area of 8107 sq.km.

Table 1. Construction sites registered in Ahmedabad district under the BOCW Act 1996.

Year	Sites Registered	No. of Workers declared by registered sites		
		>= 100	100 - 500	< 500
2017 (Jan-Mar)	45	34	10	1
2017-18	237	192	43	2
2018-19	485	392	84	9

* There is a possibility that the numbers of workers are often under-reported. (Desai, 2020)

⁶ BOCW Act, 1996 - The building and other construction workers (regulation of employment and conditions of service) act, An Act to regulate the employment and conditions of service of building and other construction workers and to provide for their safety, health and welfare measures and for other matters connected therewith or incidental thereto. established on the 19th of August, 1996. (bocw-act, 1996)

2.2 Field-Visits and Questionnaire at Construction Sites

This paper consists of data from 5 construction sites to document the housing and basic services provision to construction workers (see Table 1). The details of all the construction sites, their developers, contractors, etc. are kept confidential in this report. These 5 sites cover projects such as a residential, a commercial, a hotel, a university building and a road development project. These 5 sites included 2 projects in which different medium and small-scale contractors had been hired for almost each of the construction activities such as excavation, RCC, masonry-plastering, flooring, painting, waterproofing, aluminum windows, grill fabrication, plumbing, electricals, etc. When the project consisted of multiple buildings, often more than one contractor was hired for each of the activities. The remaining 3 projects out of 5 projects were executed by 3 different large construction companies – the large construction company had been hired for the civil work (excavation, RCC and masonry-plastering) and in most cases, for a few other construction activities as well.

A questionnaire was filled at each of these sites to document the following details of the construction project:

1. The number of construction workers employed for various construction activities;
2. Who among them lived at the worksite;
3. Who provides the accommodation other facilities for the workers living at the worksite;
4. The nature of these facilities (Annexure 1).

The questionnaire was filled through a combination of personal observations and detailed discussions with the relevant on-site staff of the developer / contractor (e.g. project manager, safety officer, admin manager, admin in-charge, etc). In a few cases, the questionnaire could not be filled comprehensively due to various reasons. Nonetheless, substantial data could be collected.

Annexure 1.

With regard to the mode of provision and nature of provision, the following aspects were documented:

1. Provision of land for the labor colony;
2. The building of labor accommodation;
3. Creche for the workers' children;
4. Provision of water infrastructure - for drinking and other uses such as bore-well, water pipeline, water tankers, water storage tank, water filter;
5. The building of sanitation infrastructure - toilets, bathing spaces, spaces for washing clothes and utensils, sewage disposal and drainage;
6. Provision of electricity.

Note – Details regarding the provision of health services for the workers and their families, tie-ups with medical clinics or hospitals could not be documented. Provisions of the housing and basic services were documented through photographs.

2.3 Interviews with Developers and Contractors

Interviews with developers and contractors of construction companies were an important part of this study, in order to understand how they view their workers' housing question and how this housing can be improved.

Surprisingly there is a very little systematic information available about the current practices in the construction sector vis-à-vis the provisions made for worker accommodation and other facilities for workers at construction sites. In fact, one developer, when asked about these practices across Ahmedabad, reflected on the lack of information about these aspects within the developer community itself:

“We never discuss it. We discuss FSI when we meet with other developers or in public forums or in conferences. Nobody – not one topic, not even 15 minutes are spent on discussions pertaining to these aspects and what one should do for them. Which is really a reflection on some people [pause]... actually it is a reflection on us, that we don’t think of these things. That we don’t consider them worthy of discussion. We don’t ask each other what are you doing at your site; who is providing housing to the worker. We may be doing something for worker at our site, but we don’t discuss this when we meet other developers. We don’t give this importance enough for it to figure in the conversation.” (Pavan Bakeri, Bakeri Group, discussion in 2018)

2.4 Study of Regulatory Framework for Housing and Basic Services for Workers

In the 2017, CIRA⁷, the existing regulatory framework was studied to understand the mandated responsibilities of developers and contractors with respect to housing and basic services provision for migrant construction workers (Desai 2017). The study included worker legislation, along with the follow-ups done in the present study to understand the implementation of the provisions of BOCW Act for registering construction sites and regulating housing and basic services provision for workers at the construction sites. The 2017 study by Renu Desai also noted that, though ambiguous, the development permission (DP) has a provision for regulating housing and basic services for these workers. The RERA, 2016⁸ – which is part of the regulatory framework for real-estate construction projects and requires registration of these projects before project launch – was also briefly examined to see if it could play any role in regulating housing and basic services provision for these workers. These regulatory frameworks were studied through discussions with government officials as well as relevant documents/data obtained using Right to Information (RTI). The data obtained was also used to estimate the number of construction sites in Ahmedabad in the recent years.

2.5 Labor Legislation and Governance

Based on a previous study on the entitlements of migrant construction workers (Desai 2017), and follow-up research on the implementation of the BOCW Act, this section outlines aspects which shape how worker legislation and its implementation impact provisions by employers for housing and other facilities for workers at construction sites.

Besides the question as to whether or not a construction site is registered under the multiple worker laws that are applicable to it, the provisions vis-à-vis housing and other facilities to be provided by the employers for workers vary across these laws. While the ISMW Act⁹ and related central rules have some of the strongest and least ambiguous provisions on housing and other facilities, the enforcement of this law in general is weak due to various reasons. Enforcement of the BOCW Act and related Central and Gujarat State rules is deficient but better than the ISMW Act, but BOCW Act has ambiguous provisions for housing and other facilities for workers (Desai, 2014). Different regulatory actors to enforce the different worker laws applicable to construction sites The CL Act¹⁰ and the ISMW Act are to be implemented by the Worker Commissioner wing of the Labor and Employment department of Gujarat government, while the BOCW Act is to be implemented by the Directorate for Industrial Safety and Health (DISH) wing of the department. The BOC inspectors, who were recruited in 2017 under DISH to enforce the BOCW Act most of the times do not

⁷ CIRA - The Contract Labour Regulation and Abolition Act, 1970, An Act to regulate the employment of contract labour in certain establishments and to provide for its abolition in certain circumstances and for matters connected therewith. (CIRA, 1970)

⁸ RERA - Real Estate (Regulation and Development) Act 2016 - An Act to establish the Real Estate Regulatory Authority for regulation and promotion of the real estate sector and to ensure sale of plot, apartment or building, as the case may be, or sale of real estate project, in an efficient and transparent manner and to protect the interest of consumers in the real estate sector and to establish an adjudicating mechanism for speedy dispute redressal and also, to establish the Appellate Tribunal to hear appeals from the decisions, directions or orders of the Real Estate Regulatory Authority and the adjudicating officer and for matters connected therewith or incidental thereto. (RERA, 2016)

⁹ ISMW Act - INTER-STATE MIGRANT WORKMEN Act, 1979, Is an Act to regulate the employment of inter-State migrant workmen and to provide for their conditions of service and for matters connected therewith (ISMW, 1979)

¹⁰ CL Act - Contract Labour Act, 1970 - Chief Labour Commissioner (Central) - This act has been enacted to regulate the employment of contract labour in certain establishments and to provide for its abolition in certain circumstances and for matters connected therewith.

know, and are not responsible for enforcing, the provisions in the CL Act and ISMW Act at the construction sites they visit. It is unclear how frequently inspectors from the Worker Commissioner wing visits the construction sites to enforce the CL Act and ISMW Act. During discussions on construction sites in the Labor Commissioner's office for a previous study, the officials often declared that they did not have much to do with construction sites and that one should go to the DISH wing since the BOCW Act was under their purview (Desai 2017). These reasons include, but are not limited to, lack of policies.

3. Current Practices of Providing Housing and Services for Workers Living at Worksites

The RCC and masonry-plastering workers, who form the largest proportion of the workforce in any project, predominantly lived at the worksite in all the 5 projects covered in the study. These workers were circular migrants¹¹. On a few projects, there were also a few RCC and masonry-plastering workers who were locals or settled and lived off-site; while some of them were Naka workers brought in intermittently, some were also attached to contractors on a regular basis. With respect to the workers engaged in other construction activities in the 5 projects, there were variations across the projects in terms of whether and how many workers engaged in each activity lived on the worksite and off-site in their own arrangements.

This seems to depend on a combination of factors such as:

1. Migrant's status of the workers engaged in a specific construction activity (see Table 2);
2. Duration of work for that activity;
3. Scale of the project;
4. Kind of accommodation;
5. Services provided for them at the worksite;
6. Off-site accommodations provided by contractors (seems to be very rare);
7. Workers' preferences between offsite / onsite.

¹¹ Circular migration - Circular Migration can be understood as "the temporary, recurrent movement of people between two or more cities / countries, mainly for purposes of work or study" (UNECE, 2016) For the migrant worker, however, circular migration is a survival strategy when economic opportunities do not respond favorably at home. Moving between the host and the sending economies offers an opportunity of social and economic mobility for the migrant. But the rhetoric of an all-benefit situation arising out of circular migration, nevertheless, stops short in face of labour rights and well-being. Circular migration strikes a high personal cost for the migrant, which is for most of the time unnoticed and the labour invested in earning a bare living, unprotected.

¹² Saliya Kaam - Bar bending work (In Gujarati language - a colloquial term) is the process of making and bending steel reinforcing bars and beams, also called "rebar," which are used to strengthen concrete in buildings.

¹³ Bharai - Filling Work - A filling refers to a quantity of earthen material such as soil, rock, aggregate, shingle, and sand that is placed and compacted in trenches, foundation, and under floors for the purpose of filling in a hole or depression.

Table 2. Type of work and workforce at the construction sites registered in Ahmedabad district under the BOCW Act 1996.

Type of Labors	Family type description	Place of living
RCC – centering & saliya kaam ⁱ	Single male migrants	Worksite
RCC - Masonry-plastering	bharai ⁱⁱ	Worksite
	Local / settled workers	Off-site
	Mostly migrant families but also single males (women work as unskilled helpers)	Worksite
Flooring	Local / settled workers	Off-site
	Single male migrant	Worksite or Off-site (shared rental rooms where workers pay the rent)
	Migrant families (women work as unskilled flooring workers)	
Painting	Single male migrants (majority of the painting workers)	Worksite or Off-site (shared rental rooms where workers pay the rent)
	Migrant families (women do not working in painting)	Worksite (rental rooms were workers pay the rent)
Waterproofing/China mosaic	Mostly migrant families	Worksite
	Local / settled workers families (women work as unskilled workers)	Off-site
Electrical work	Local / settled workers	Off-site
	Single male migrants	Worksite
Depart workers	Often migrant families	Worksite

The accommodation for all workers living at the worksite was built by the developer at all of the 3 projects. The nature of accommodation varied across the projects. At Site 1, rooms with verandahs and walls made from pre-cast concrete panels were built by a contractor specifically hired for making these rooms.

Additional rooms, made during peak construction time when the above-mentioned rooms were inadequate for the number of workers, were built from corrugated metal sheets – it was unclear if these were built by the developer's depart workers or the RCC contractor's workers. At Site 2, room-like enclosures were built with corrugated metal sheets by the developer's depart workers in the basement of an under-construction building. At Site 3, the developer hired a contractor to specifically build the worker colony which was intended to be a "model colony"; here, the rooms were arranged around communal verandahs and were made from a combination of materials like corrugated metal sheets, PVC plastic sheets and agronets. In the remaining 2 projects, the contractors were involved in building some of the or all of the workers' accommodations.



Figure 2. Overview of the 5 construction sites in Ahmedabad.

As explained later, the nature of accommodation built by the contractors varies, with large construction companies often building relatively better rooms than the medium/small-scale contractors. Furthermore, a contractor will generally build rooms only for his own workers. Therefore, in a project with multiple contractors, often more than one entity builds rooms for the workers, leading to variations in the worker accommodation built for a single project. Thus, in 5 projects involving multiple contractors, one or more contractors-built accommodations, each for their own workers; whereas the developer-built rooms for it depart workers and the workers of the remaining contractors.

Corrugated tin sheets act as both wall and roof, they are tied with wire and nails to odd pieces of metal scaffolding and occasionally bamboo poles. Wooden off cuts provide a frame for an opening. The roof is held down with rocks, branches, shoes, helmets etc. These things are also kept here for storage. A stiff plastic tensions cable wraps around the front of the houses keeping things in places as well as providing a clothes rack for drying laundry. A day bed rests on its side against the front of a house to allow room for the laundry above to dry on the tension cable. When the cable is not being used for laundry, it acts as support for cloth to drape over for shade while occupants rest below. The concrete poured on the ground in front of the houses claims an area used as an outdoor social space.

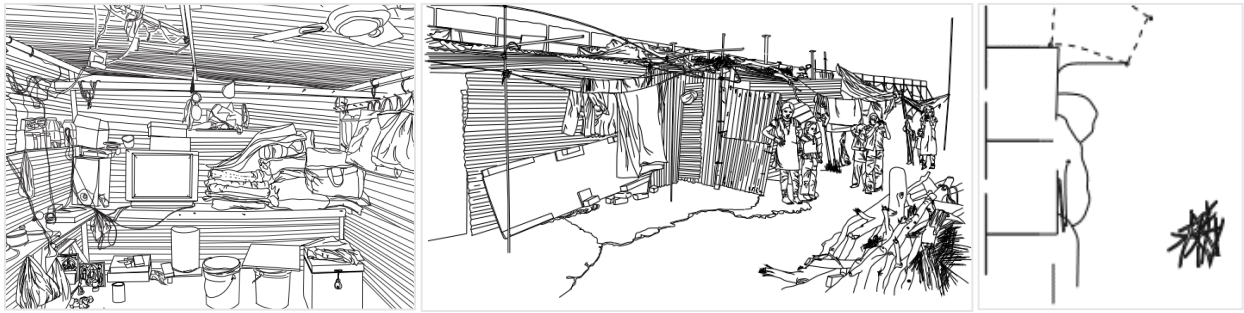


Figure 3, 4. Interior of construction worker's house and a typical construction worker's housing.

Figure 4 shows a one room house, shared by a family of seven, at the construction site. During the day all of the bedding is folded and stacked on a shelf which also act as structural bracing. The beams all have nails and hooks attached to provide storage. The cables providing electricity come in through small gaps where the corrugated tin sheets meet and are hung from the beams.



Figure 5. Frame structure made by fabrication onto which corrugated metal sheets are bolted, also a single storied structure is seen built with the same assembly.



Figure 6, 7, 8. Rooms made from Aerocon panels (Aerocon sheets are cement sandwich panels, made of two fibre reinforced cement facing sheets on either side of a light-weight concrete core).



Figure 9. Workers living in an under-construction building.



Figure 10. Makeshift bathing enclosure seen to the left of the room, below the plastic sheet or cloth.



Figure 11. Hanging electrical wires to make arrangements for a bulb, extension board and fan.

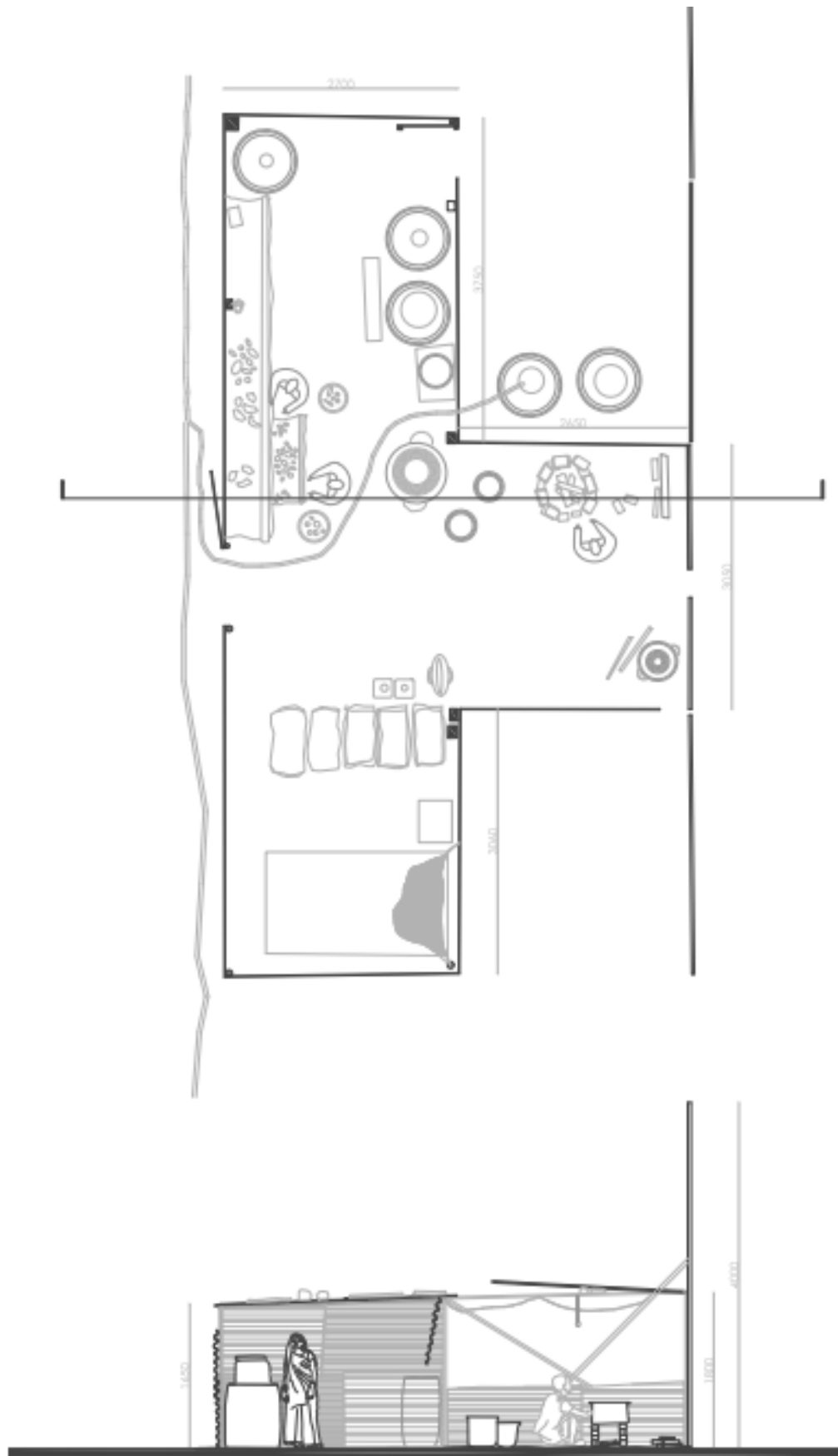


Figure 12. Communal Kitchen.



Figure 13. Children's Creche.

Overall, with regard to the mode and nature of provision, the field visits and discussions across the projects revealed that corrugated metal sheets were widely used to build the rooms – by large construction companies, most medium/small-scale contractors and developers – but there was a variation in the quality of the rooms. The worker accommodation made by many of the medium/small-scale contractors was poorly built with recycled materials that were in very poor shape and with no proper flooring. However, some of these contractors had built better rooms using concrete blocks with relatively better flooring. In general, rooms made from corrugated metal sheets created harsh spaces to live in during summers. There were no windows and the doors, leading to inadequate natural light and ventilation. The aspect of environmental comfort was rarely a consideration.

Let's focus on the rationale of large construction companies for using an insitu fabrication system for the structure is that this allows for quick erection, dismantling and re-erection. The rationale behind the wide use of corrugated metal sheets for the walls / roofing – whether they are roughly erected or erected through in-situ fabrication system – is its low cost. It is not only cheaper than using other materials like Aerocon panels or pre-cast concrete panels but also easy to handle, possible to re-use several times across different worker colonies, and furthermore fetches a price in the scrap market when finally discarded. Among all the different kinds of rooms built across the 5 sites, there were however a few cases where an attempt was made to address light and ventilation for the rooms and use more climatically appropriate materials and design. While there were still limitations in the materials / design / cluster-layout, it may be possible to learn from and build on these “better practices.” Rooms meant for a family or a group of 4-5 single males were generally 8 feet x 10 feet (7.5 sq.m) or 10 feet x 10 feet (9.3 sq.m). At some sites, bigger rooms were made to accommodate large groups of single male migrants. At one such site, groups of 10 male workers were accommodated in rooms of 20x20 feet (37 sq.m). Compare this to the ISMW Act which mandates a norm of 10 sq.m. room for a family, and a norm of 6.5 sq.m. per person in barracks for 10 workers.



Figure 14. The image displays a 800 mm X 2030 mm corrugated sheet commonly used for the worker housing.



Figure 15. Use of commonly available materials and impromptu joinery details.



Figure 16. The toilet areas covered with tarpaulin sheets with improper drainage left to run along the site peripheries.



Figure 17. Use of commonly available materials and impromptu joinery details.

4. Research Findings

4.1 Tenure Security

On-site settlements have high tenure security for the duration of the construction work. Among off-site settlements, rental housing in the city's recognized slums have highest tenure security even though the rental agreement with the landlord, who is an informal occupier of the land, is undocumented. The other two off-site typologies have low tenure security despite residents having lived at the same location for many years. The most vulnerable are the shelters / settlements on pavements and street edges, under flyovers and bridges, where residents often face violence in the form of evictions and harassment, leading to losses of belongings and investments they have made in their housing as well as an everyday experience of uncertainty and insecurity about their shelter and belongings. This is also true of some shelters / settlements on government or private lands which are non-recognized slums, especially those on railway lands and government lands being reclaimed by the local authority. This low tenure security is a direct result of the state's attitude towards informality and the urban poor, compounded by its attitude towards recent and non-permanent migrants from lower-income backgrounds. These tenure conditions deny large numbers of construction workers a secure space in the city and access to basic services.

4.2 Housing Quality

Four main types of shelters were found in construction workers' settlements in Ahmedabad:

1. The first is potla type shelters which are arrangements where residents tie up their belongings with tarpaulin during the day when away for work and open the potla in the evenings to set up a sleeping and cooking area. This is found in the off-site settlements with very low tenure security. These shelters are extremely vulnerable to weather conditions, rodent and mosquito infestation and theft of belongings.
2. The second type is kutccha shelters made from tarpaulin, and is found in off-site settlements with low tenure security as well as on-site settlements of smaller construction sites. They are unstable structures vulnerable to weather conditions, rodent and mosquito infestation, theft of belongings and flooding in case of waterlogging in the settlement.

3. The third type is kutccha shelters made entirely from tin sheets. These are found in on-site settlements of small to medium-size construction sites. They are susceptible to over-heating and have little or no ventilation, leading to extreme discomfort for its residents and posing health risks.
4. The fourth type is the semi-pucca shelter consisting of brick walls and tin sheet roofing. They are found in on-site settlements of larger construction sites, and off-site settlements of rental housing and the more consolidated and secure settlements on government land. These are less vulnerable to weather compared to the other three types, although the tin roofs still lead to heating up of the shelters. Rodent and mosquito infestation can be controlled and the structure provides security of belongings.

In off-site settlements, residents choose to build a particular shelter type depending on the tenure security, migration pattern which shapes their willingness to invest in housing, and affordability. In on-site settlements, there is an absence of government enforcement of existing regulatory frameworks (Interstate Migrant Workmen Act 1979, The Building and Other Construction Workers Act 1996, PWD and CPWD guidelines, etc) to provide proper housing to construction workers as well as inadequate provisions in these frameworks. As a result, shelter type is linked to the size of the construction site and duration of work, since currently, it is the scale of the project which determines whether a developer / contractor thinks it is worthwhile to invest in better shelters or not.

4.3 Basic Services and Amenities

Off-site settlements:

Generally, do not have any basic services like water, sanitation and electricity. Residents often have to pay or do some work to get access to water. Most lack toilet facilities, nearby pay-and-use facilities are not affordable, and most residents resort to open defecation as a result. Bathing facilities do not exist and many residents have built temporary enclosures for bathing, however, women face privacy issues in these, requiring them to bathe early morning or at night when it is dark. Rental housing may have access to water but sanitation and provision of electricity is usually inadequate or nil. Most settlements are prone to waterlogging due to lack of drainage.

On-site settlements:

These are often provided with water, however, at the smaller private-sector construction sites and public-sector flyover construction sites, potable water is not always provided and water storage facilities are often unhygienic. Toilet facilities were not provided as per the case-study of public-sector flyover construction site, and while toilet facilities were provided in the other on-site settlements, they were not well-maintained, leading to open defecation. The public-sector construction site of IIT Gandhinagar was found to have the best facilities of water, toilets and bathing facilities, and electricity, as well as a crèche and regular health camp. This was due to the keen interest of the IIT Gandhinagar administration in the issues faced by construction workers and their families.

4.4 Documents for Rights in the City

Documents showing proof of residence in the city such as ration card, election card, property tax receipts, and electricity bill are important for the urban poor to build claims to their informal housing spaces and basic urban services as well as realize entitlements to government schemes, including housing programs. Almost all the seasonal migrants in the study were found to have these documents only for their villages and were not willing to give up these to get new ones at their city address since their migration patterns require them to keep their village documents. However, the lack of documents for entitlements in the city

leads to high vulnerability. Alternate documents for such migrants could be obtained through registration with the Building and Other Construction Workers' Welfare Board, however, registration with the Board is currently difficult. Therefore, construction workers cannot avail the Board's schemes, including housing scheme, let alone access housing schemes of the local urban authority. Any policy intervention to improve the housing conditions of construction workers will have to take this into account in its design and implementation so that city-based documentary requirements do not lead to exclusions.

4.5 Construction Work, Migration and Housing

The typology of settlement in which construction workers find shelter, the mode of obtaining construction work (finding work at a Naka, or by being part of a worker gang, or by getting regular contract work through contacts one has built up over time) and the dynamics of migration (which include type of migrant household and migration pattern) are interlinked aspects which need to be understood to propose housing interventions that are viable for construction workers. Naka workers and regular contract workers live in off-site settlements. Local and permanent migrant Naka workers are found across the off-site typologies, depending on the individual family's socioeconomic condition. Local and permanent migrant regular contract workers are relatively better-off and thus do not live in the most vulnerable off-site settlements, that is, pavements and street edges, under flyovers and bridges. Seasonal migrant Naka workers are found across the off-site typologies, depending on the individual family's socio-economic condition and also the migrant household type. Thus, only the single males among them live in rental housing. Significantly, the rental housing is affordable to them not only because they share the rent with other single male migrants, but also because arrangements with the landlord and their sharers to pay rent only for when they are living in the city. This rental housing is not affordable to the seasonal migrant Naka workers who come to the city along with families (with children or couples) and it is this group that lives in the most vulnerable off-site settlements. Construction workers who find work through worker gangs are mostly seasonal migrants and live in onsite settlements as they are provided housing for the duration of the work. However, among this group, those who work in public-sector or private-sector infrastructure-laying work such as road-building or pipeline-laying are not provided housing and they live in off-site settlements on government or private lands, access to which may be informally negotiated by the contractors. The study also found that kinship and community ties play a central role in determining the settlements that seasonal migrant workers choose to live in. Another important finding was that Naka workers, especially the seasonal migrants, walked a maximum distance of 15-20 minutes to reach a Naka. This is important since they do not have to incur transport costs to reach a Naka where there is no guarantee that they will obtain work every single day. Majority of Naka workers obtain work for 10-15 days a month. Housing interventions would have to be sensitive to these aspects.

4.6 Household Income and Housing Expenditure

Monthly household income amongst construction workers depends on number of earning members, their skill levels and mode of obtaining work which determines daily wage rates and the number of days for which they get work in a month. The study calculates that for Naka workers who have a single earning member household, monthly income is Rs.3000-4500 if he is unskilled and Rs.5000-7500 if he is skilled. For two earning member households, monthly income is Rs.6000-9000 if they are unskilled and Rs.8000-12000 if the male is skilled. (Naik, 2015.)

The study found that construction workers live in rental housing with monthly rents in the range of Rs.800-2500, often with additional charges for basic services. (Desai, 2020) Single male migrants share a room, each incurring Rs.300-500 per month for rent and basic services. This is 7-15 per cent of an unskilled single male migrant's monthly income and 4-10 per cent of a skilled single male migrant's monthly income. Thus, rental housing is affordable for single male migrants when they share amongst 4-6 males, and each is paying no more than 4-15 per cent of their income on rent and basic services. (Desai, 2020) Those who live on pavements and street edges, under flyovers and bridges, or on government or private lands which are not recognized slums, incur expenses on building / repair of shelter but this is difficult to estimate. Some of

them spend around Rs.300 per month for buying water. For families who live in these types of settlements, rental housing would entail higher expenses of Rs.900-2500 per month, which would be 16- 25 per cent of their income. (Desai, 2020) Such a regular expense is unaffordable to them, due to which they do not choose rental housing.

5. Summarizing the Argument

Seasonal migration stands as the primary mode of economic mobility for the impoverished, particularly amongst the economically weaker sections of the society. This migration tends to be circular, driven by the need to maintain ties with hometowns during the agricultural season and hindered by barriers to permanent settlement in urban areas due to a lack of social security. Addressing the housing and basic service needs of these marginalized urban poor is imperative for inclusive city development. Urban planners and policymakers must grasp the dynamics influencing the lives of seasonal migrants to effectively accommodate them in the cities. Urban governance significantly impacts migrants' housing conditions through informal settlements and rentals. Current urban policies largely exclude seasonal migrants due to eligibility criteria reliant on city residency documentation (Desai, 2020). Housing programs primarily focus on homeownership, neglecting rental options favored by migrants. Although some efforts, like the Shelter for Urban Homeless (SUH) scheme exists, inadequacies persist in shelter availability and suitability for migrant families. To address these challenges, policymakers must integrate seasonal migrants into urban planning and housing policies. Collaboration between construction workers' welfare boards, municipal governments, and housing departments is crucial. Informal settlements should be viewed as viable habitats and upgraded rather than eradicated. Investments in basic services and sanitation are necessary, alongside measures to ensure affordable access, such as subsidizing pay-and-use facilities. Systematic mapping of worker markets, such as construction worker Nakas, is vital for designing inclusive urban spaces. Understanding migrants' specific needs and their adaptation of inadequate spaces is essential for effective policy formulation. Ultimately, building inclusive cities necessitates recognizing migrants' rights to a decent and dignified urban life. Efforts must prioritize enhancing housing options, providing basic services, and integrating seasonal migrants into urban planning processes. By acknowledging their presence and needs, policymakers can pave the way for more inclusive and equitable cities.

6. Initiatives in and Around

In recent years, there have been some initiatives that address the housing of migrant workers in the cities. These include interventions and proposals for homeless shelters, some under the national-level Shelter for the Urban Homeless (SUH) scheme, in Ahmedabad, Surat and Bhuj; the Apna Ghar projects by the Kerala State government; migrant hostels in few cities by the NGO Pratham under its Project RISE program; and the Garima initiative in Kozhikode, Kerala (SUH, 2018). Following section outlines the initiatives in Ahmedabad and other cities for migrant construction workers – those who live at worksites as well as those who go to worker Nakas and arrange for their own housing. Following section further discusses interventions on migrant workers' housing in countries like China, South Africa and Singapore.

6.1 Night Shelters or Ren Baseras

Night shelters, also known as Ren Baseras, have been established in numerous Indian cities following directives from the Supreme Court in 2010. While initial implementations faced challenges related to location, design, and management, there have been notable improvements in some cities over time, often driven by pressures from the Supreme Court and civil society organizations. These shelters have played a crucial role in providing better housing options for migrant workers who would otherwise be homeless or living in extremely vulnerable conditions. Many of the enhancements have been facilitated by the national-level Shelter for the Urban Homeless (SUH) scheme, launched in 2014. (Desai, 2020). The SUH scheme's guidelines envision these shelters as 24-hour facilities offering a range of services, ultimately serving as a space to connect the homeless with various entitlements.

6.2 EWS Site Converted into Family Shelter in Ahmedabad

In Ahmedabad, the AMC converted an EWS housing site which had been lying vacant into a family homeless shelter in 2019. It consisted of 36 four-storey buildings (about 1150 flats). The AMC has begun allotting these flats to homeless families who had been shifted to one of the other homeless shelters in the city and had lived there for several months or more. The families who have shifted to this family shelter have been verbally told by AMC that they will have to pay Rs.500 as monthly rent, however, there has so far not been any rent collection even from families living here since 2-4 months (Desai, 2020).

6.3 Apna Ghar Initiative, Kanjikode, Kerala

In Kanjikode, approximately 5000-6000 inter-state migrant workers are employed across various industries including metal works, ice-cream manufacturing, packaging material manufacturing, mattress-making, aluminum works, and lamination. The majority of these workers hail from states such as Orissa, West Bengal, Assam, Chattisgarh, Jharkhand, Bihar, Uttar Pradesh, and Madhya Pradesh. To accommodate these workers, Apna Ghar provides housing facilities with a capacity to accommodate 620 individuals. The infrastructure includes a four-storied building with 64 rooms, out of which 62 rooms are allocated for worker accommodation, 1 room serves as lodging for the hostel warden, and 1 room functions as an office. Each of the 62 rooms designed for workers' accommodation houses 10 individuals and is equipped with 5 bunk-beds and 10 lockable storage units. Additionally, the facility features 32 community kitchens and 8 dining halls arranged in kitchen-dining blocks. Each block comprises 4 kitchens, each furnished with a gas stove featuring two burners and an LPG connection. These kitchens are shared between 2 rooms or 20 persons, providing one burner per room or 10 persons. Furthermore, each dining hall within the block is equipped with amenities such as a television, filtered drinking water, and wash basins, catering to the needs of 8 rooms or 80 individuals. Other amenities include 96 toilets, urinals, washbasins, bathing spaces, and areas for clothes washing and drying. Additionally, communal seating areas, a lawn, and a volleyball court are provided for recreational purposes.

6.4 Initiatives in Other Countries: South Africa, China, Singapore

South Africa

The migrant hostels in South Africa have a deeply rooted history stemming from the colonial era, particularly during apartheid (1948-1994), when they were established as single-sex institutions to accommodate African migrant workers in white urban areas. These hostels were tools of racial discrimination and economic exploitation, embodying the apartheid regime's strict controls over the movement and living conditions of black workers. Despite being intended solely for labor containment, families began inhabiting these hostels over time, leading to severe overcrowding and deteriorating living conditions. Around 1997, there were approximately 604,000 hostel beds in South Africa, with many accommodating whole families, totaling about 1 million people. The hostels varied in ownership and location, with public and "grey sector" hostels typically situated in segregated black townships, often on city peripheries. The conditions within these hostels were often appalling, with overcrowding, inadequate facilities, and neglect contributing to a dehumanizing environment for residents. Efforts to improve hostel conditions gained momentum in the early 1990s, driven by mounting criticisms and community advocacy groups like the Western Cape Hostel Dwellers' Association. The National Hostels Redevelopment Program aimed to convert hostels into family units, but the extent of its implementation and outcomes remains unclear. Some redevelopment projects have shown promising improvements in living conditions, but sustainability concerns persist, particularly regarding long-term management and rental revenue. Additionally, the experiences of rural-urban migrants and migrants from other African countries living in informal settlements warrant further research to understand the broader impact of urban policies on migrant tenants in South African cities.

China

Since approximately 2008, the Chinese national government has embarked on an expansion of public rental housing and relaxed the hukou¹²-related distribution system, aiming to facilitate migrants' access to housing. This shift was notably influenced by the "New Urbanization Plan" (2014-2020), which gradually prioritized migrant benefits in destination urban areas. Zhou (2018) particularly focuses on Chongqing's public rental housing program, which, despite preceding the New Urbanization Plan, served as a significant model for national housing development and migrant welfare improvement. By 2011, Chongqing had constructed public rental housing equivalent to 10% of the nation's total output, reaching 670,000 units by 2013 (Knowles, 2016). The program also aimed for eventual ownership by allowing eligible tenants to purchase units after a five-year rental period. Additionally, Wang, Li, and Zhang (2015) introduce an integrated prefab accommodation system designed for construction workers residing on worksites. This system, utilizing modular construction technology, was experimented at a prominent developer's project in Xuzhou.

The accommodation units, made of colored steel plates meeting national fire-protection standards, featured 8.4 m² rooms shared by two occupants, each equipped with private amenities such as toilets, bathrooms with water heaters, and air conditioning. Smart-card locks ensured security, and on-site facilities included storage rooms, dining areas, kitchens, convenience stores, and recreation/training rooms. Management was proposed to be handled by a professional agency, with developers or investors procuring accommodation and services based on contractors' and subcontractors' requirements. Despite the higher cost (1639 Yuan per worker per year compared to 1165 Yuan), the additional expense (474 Yuan) was offset by charging migrant workers a fee, representing 1-1.5% of their daily wage. Alternatively, developers or investors could cover the increased cost, adding less than 1% to project expenses.

Singapore

In Singapore, there are over 1.3 million transnational migrant workers, predominantly from Malaysia, China, Bangladesh, India, and other Asian countries, including domestic and construction workers (Kirk, 2015). Singapore's temporary contract labor migration system confines foreign workers to transient statuses, restricting job mobility and bargaining power. Employers, responsible for housing, often avoid public housing estates due to citizen opposition, leading to migrant workers primarily residing in dormitories, often converted industrial spaces or unregistered accommodations. The Ministry of Manpower enforces housing regulations, but inspections reveal persistent overcrowding and inadequate ventilation in registered dorms. Purpose-built dormitories (PBDs) offer better conditions, exemplified by Tuas View, accommodating up to 16,800 workers (Lee, 2016). While PBDs provide amenities and spacious accommodations, concerns arise regarding surveillance measures and social isolation, prompting comparisons to apartheid-like segregation. Worker advocacy groups praise improved living conditions but critique the isolation fostered by PBDs, suggesting they serve as containment strategies following a 2013 riot involving migrant workers. Brenda Yeoh highlights the state's dual approach of control and care, immobilizing workers within isolated spaces away from mainstream society. Despite government incentives for PBDs, many employers persist in substandard housing practices, facilitating worker exploitation and coercion. Overall, while PBDs offer improved living conditions, concerns persist regarding social isolation and surveillance, reflecting broader tensions between labor control, migrant welfare, and urban development in Singapore.

¹² Hukou - 'Hukou' refers to a household registration system in China that is inherited from one's parents and can be moved based on certain criteria such as income, education, and property ownership, impacting individuals' economic status.

7. Way Forward

The rural-to-urban migration trend necessitates addressing failures in urban planning, particularly in providing opportunities to migrants. This study explores migrant housing experiences, emphasizing the Kinetic City concept marked by Jugaad Urbanism, especially when these colonies lack the basic infrastructure such as access to clean water, sanitation, etc., highlighting the need for social and political interventions. Even though there are legislations protecting the interests of the rural migrants at central and state level, lack of synchronization between the concerned bodies executing these legislations, defeat the basic purpose of these regulations. At present, the impact of the increasing number of non-governmental organizations, which strive to strike a co-ordination between the various functioning bodies and end-users, is felt only at a local scale. The accommodations provided by the government agencies to the construction workers is a positive step but these facilities do not comprehensively address the daily needs of the workers. Hence, a deeper investigation is needed to go beyond addressing basic needs to improve migrants' quality of living, incorporating local techniques and incremental improvements. Policies, such as the National Urban Rental Housing Policy 2017, propose interventions with respect to social rental housing and worker hostels. However, translating policies into action requires detailed guidelines, budget allocation, and state-level initiatives. Other challenges include land availability, affordability, and regulation of the informal rental sector in the city, etc. The study highlights the dire need to investigate this topic in details to map the complex interactions between the various actors, identify the systemic loop holes and bridge them to establish a comprehensive solution to the woes of the rural migrants.

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