

# Assessment of quality of construction at the Baprola RRAY resettlement colony: a report

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## About DHRTF

The Delhi Housing Rights Task Force (DHRTF) is a collective of individuals and organisations working to protect and promote the human right to adequate housing, with a focus on Delhi. Formally established in 2015, DHRTF works to minimize forced evictions, improve public housing delivery, and promote greater discussion and interactions on housing rights through collective work, collaboration, and sharing of resources and knowledge among its members



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## Table of Contents

Executive Summary .....	4
Introduction .....	5
The Baprola Site .....	5
Methodology .....	5
Findings and Analysis.....	6
Conclusion and Recommendations.....	9
References.....	10
Annexure : Questionnaire for the survey.....	10

## List of Abbreviations

DJB: Delhi Jal Board

DUSIB: Delhi Urban Shelter Improvement Board

DSIIDC: Delhi State Industrial Infrastructure Development Corporation

DU: Dwelling Unit

EWS: Economically Weaker Section

JJ: jhuggi-jhopri

JNNURM: Jawaharlal Nehru Urban Renewal Mission

PwD: Persons with Disabilities

RRAY: Rajiv Ratan Aavas Yojana

UBBL-Delhi: Unified Building Bye Laws for Delhi

## Executive Summary

In keeping with its mandate to improve the quality of life of residents of JJ clusters, DUSIB constructed an Economically Weaker Section (EWS) Housing Society in Baprola Phase 2, approximately 25km from central of Delhi. The project was planned and executed under Rajiv Ratan Awas Yojana (RRAY) Guidelines. It was sanctioned in 2008 and completed in 2014 with 2000 DUs: the first batch of allottees were relocated over 2014–15. These residents were from settlements located 10–15 kms from Baprola, such as Punjabi Bagh and Jwalapuri. However, in less than five years from completion and relocation of allottees, issues of seepage, cracks in walls, peeling of bricks, overflowing drains have been reported by residents, including to DUSIB. The emergence and wide prevalence of these issues in such a short duration necessitates the need for a comprehensive assessment of the design, construction quality, and grievance redressal mechanism in this context.

This report presents a preliminary evaluation of the issues at hand. A total number of 110 respondents from Blocks F, G, J, and K were surveyed to determine the nature and extent of the problems and understand measures taken by DUSIB to resolve the same. As many as 64% of all respondents reported structural issues, out of which 83% consisted of moisture in toilets and 73% of brick peeling. While residents on lower floors reported greater incidence of structural issues, those on upper floors faced acute problems in accessing potable water as it had to be carted manually from DJB tankers.

Given the high prevalence of these problems, 41% of the surveyed households reported having carried out repairs in their homes. DUSIB's response to these issues was generally apathetic, with less than 10% of all complaints resolved according to respondents.

Initial assessments suggest two kinds of lapses in the project, which can only be confirmed further by an in-depth evaluation, conducted by or with cooperation from DUSIB. The first major issue lies in the quality of the material used for construction of the buildings, which has resulted in the widespread issues facing the communities today. Secondly, there are minor structural issues with the buildings themselves, despite the design of the project being in line with industry standards.

This report documents how these lapses have detrimentally affected living conditions in the Society and put families at risk in case of collapse and deteriorating conditions. Consequently, a publicly funded project meant to improve allottees' quality of life by providing them affordable and liveable housing has, instead, pushed them into deeper financial and emotional vulnerability. In light of these findings, the report concludes by suggesting measures to ameliorate the living conditions of residents and set a benchmark for all such resettlement and/or rehabilitation projects in the future.



# Introduction

Access to affordable, liveable housing has been universally recognised as one of the primary challenges in making cities inclusive for their citizens. Various central and state government policies and schemes have envisaged housing for all as a key tenet of urban planning and growth in the twenty-first century. Yet, even as residents of JJ clusters have been identified as integral to cities' social and economic life, in practice, their homes and lives are often erased within hours, without any prior notice or consultation. Rehabilitation itself continues to be riddled with lapses of omission and commission. Citizens' rights to shelter and livelihood are known to be ignored in the process of redevelopment of JJ clusters. The design and quality of housing stock is an important element of such redevelopment and rehabilitation, which is all too often overlooked in the conceptualisation and execution of these projects.

These problems with slum rehabilitation programmes have been well-documented. Delhi in specific has had a long history of resettling evicted slum dwellers to peripheral locations, initially through plotted settlements and more recently through the provision of built-up flats (Sheikh et al 2014). However, the quality of the resettlement has generally been poor, with resettled residents having to wait several years before receiving even basic services and social amenities, with debilitating impacts on income, women's workforce participation, safety and well-being (Sheikh et al 2014, Bhan et al 2018, Kunduri et al 2019). Household surveys conducted at the resettlement sites themselves have also documented the level of disruption to the lives and households of some of the city's poorest and most vulnerable residents (Menon-Sen & Bhan 2008).

## The Baprola Site

Baprola is situated in Najafgarh tehsil of South-West district, NCT of Delhi. An EWS Housing Society was built by DUSIB in Baprola Phase 2 as per RRAY guidelines under sanction of JNNURM. The Society is built over an area of 87,000 square metres and has a cumulative capacity of 2144 DUs spread over low rise apartment blocks, four storeys in height. Each DU has a built-up area of 25 sq. m. and consists of one room, one kitchen, one bathroom, and a living area. Per the latest available figures, close to 900 households from

multiple sites across Delhi were resettled here as per extant DUSIB policy and guidelines. An average household consists of 5 members: up to half of the households surveyed have a senior citizen or a person with disability. Each household paid the required allotment fee of Rs 1.42 lakh, out of which Rs 30,000/- are earmarked as maintenance fee by DUSIB for a five-year period from the time of giving possession of the DU.

## Methodology

In light of allottees' grievances pertaining to structural integrity, construction quality, water supply, and universal access, a rigorous assessment of the Society was undertaken by members of the Delhi Housing Rights Task Force. A representative sample survey of households was conducted in January 2020, involving 110 households from Blocks F, G, J, and K to determine the nature and extent of the problems being experienced by residents and their ramifications on liveability in the Society. The questionnaire for this survey is included as an Annexure to this report.

An architectural evaluation of DUs across the Society was also performed to understand the correlation, if any, between these problems and the design and construction quality. The study presents the facts as they emerged in this evaluation and key recommendations for addressing these grievances. We also hope that relevant stakeholders in the state and central governments will utilise these findings so that similar resettlement and/or rehabilitation projects may be planned and executed in a timely, cost-effective, and safe manner for all stakeholders involved.

## Findings and Analysis

Our analysis revealed that many households suffer from acute space crunch. UBBL-Delhi 2016 recommends residential buildings to have a minimum of 12.5 sq. m. per person, while in the Society residents have only 5 sq. m. per person due to the diminished size of the DUs. Since about 65% of the surveyed households had more than four members, many households have insufficient space to conduct their everyday activities with dignity. This lack of living space also poses a grave risk to residents' health in light of the ongoing Covid-19 pandemic, making it impossible for families to practice social distancing and/or self-isolation should one or more members be infected.

Likewise, lack of elevators and/or ramps has proven detrimental for senior citizens and persons with disability (PwDs) who have been allotted DUs on the third and fourth floors. As many as 54 of all the surveyed households had either senior citizens or PwDs, of which 20 households (37%) were located on these upper floors.

Access to potable water was another major issue reported by many of the surveyed households: 27% of the respondents complained about issues with the availability and quality of drinking water. While the Society has access to piped water, this is not potable. Drinking water, instead, is supplied via

tankers. This also makes it difficult for residents on upper floors to carry and store water, especially those households with senior citizens or PwDs (37%).

A majority of the surveyed households (64%) also reported structural issues with their DUs. These were:

1. Cracks
2. Moisture/dripping water
3. Moisture/dampness in the toilets
4. Moisture/dampness in the kitchen
5. Bricks peeling off in the building

Blocks J and K reported the highest incidence of such structural issues, while across the Society the most prevalent issues were moisture/dampness in toilets (83%) followed by bricks peeling off in the building (73%). A large majority of the houses which reported peeling of bricks were on the first and second floors (81%); many of these identified this problem as particularly rampant on the outer facade of their DUs.

The appearance of cracks and seepage so shortly upon construction of the Society underlines structural and constructional imperfections and lapses. Not only do these undermine residents' quality of life, but they also put them at considerable risk in case of natural or man-made disasters such as earthquakes, fire, or collapse. Given these concerns, almost half of all surveyed households (41%) reported

**Table 1: Distribution of households with senior citizens/PwDs**

Block	F	G	J	K	Total
Upper Floor Households	8	19	9	15	51
Upper Floor Households with Senior Citizen/ Person with Disability	1	11	4	3	20
% of Total Senior Citizens/ PwD Living on Upper Floors	12.5%	37.9%	40.0%	50.0%	37.0%
Lower Floor Households	12	28	9	10	59
Lower Floor Households with Senior Citizen/ PwD	7	18	6	3	34
% of Total Senior Citizens/ PwD Living on Lower Floors	87.5%	62.1%	60.0%	50.0%	63.0%

**Table 2: Comparison of issues across lower and upper floors**

	Lower Floors (1,2)	Upper Floors (3,4)
Total Houses	59	51
% with Cracks	49%	51%
% with Leaks/Moisture	53%	51%
% with Brick Peeling	81%	63%

Figure 1: Household responses regarding issues

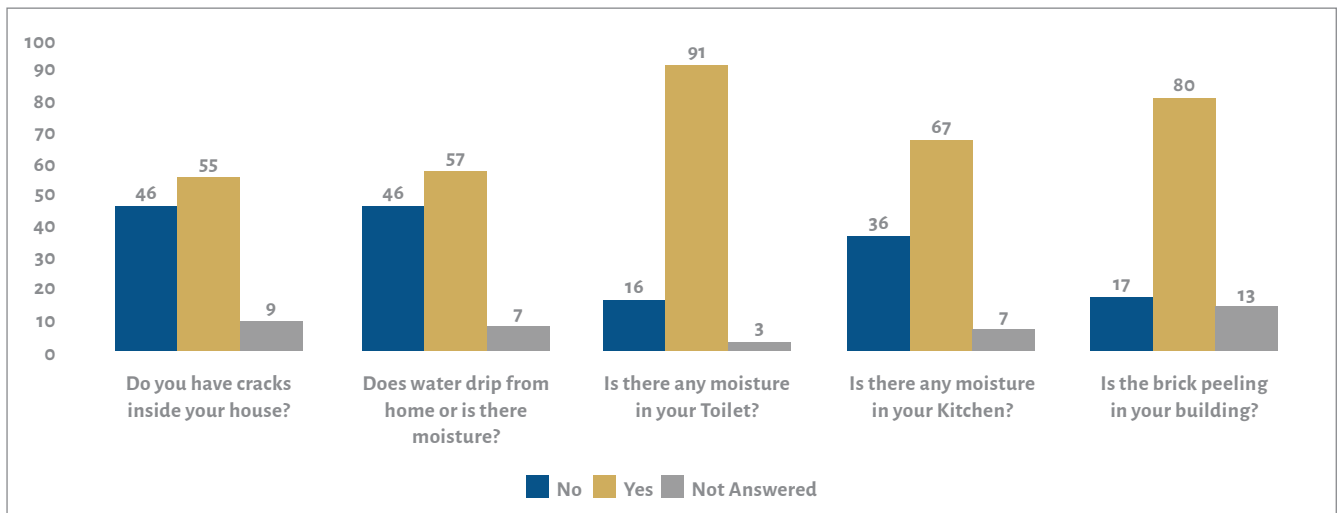


Figure 2: Housing issues by Block

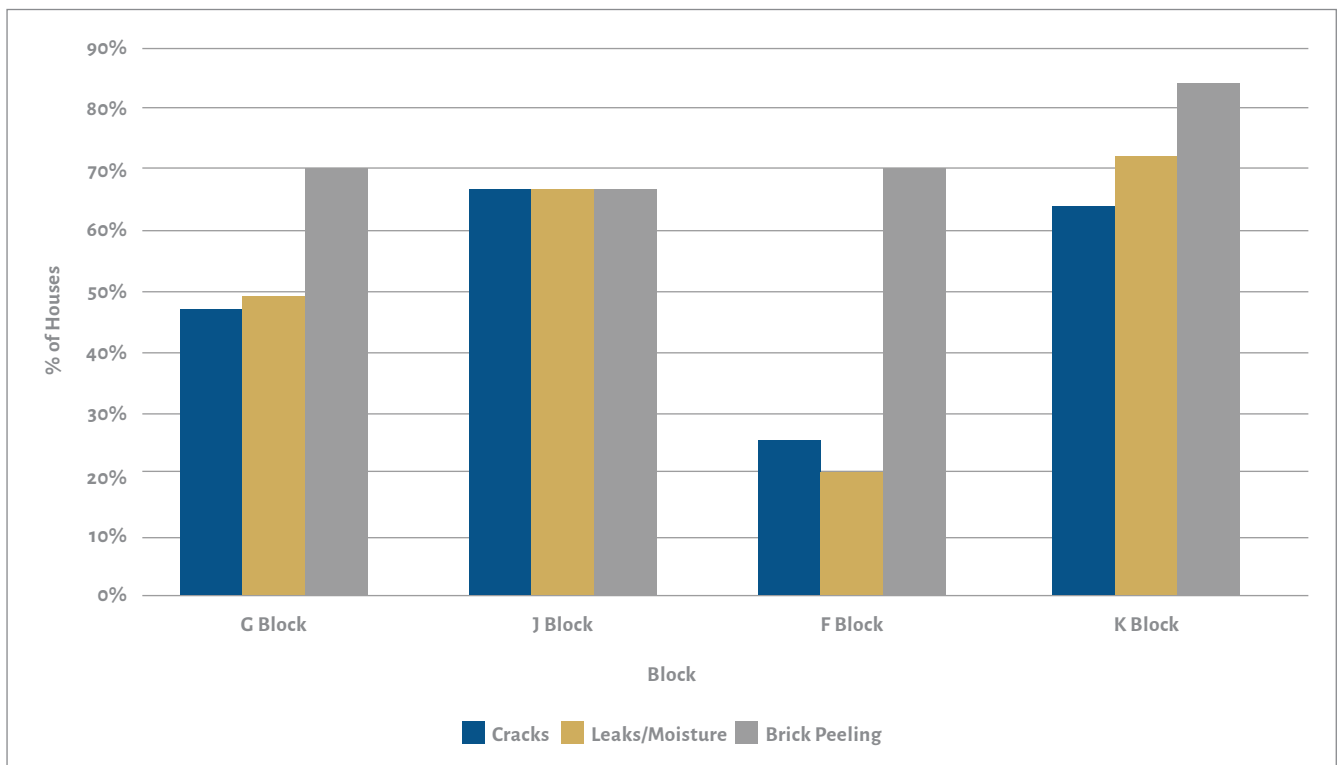


Figure 3: Brick peeling in the Building

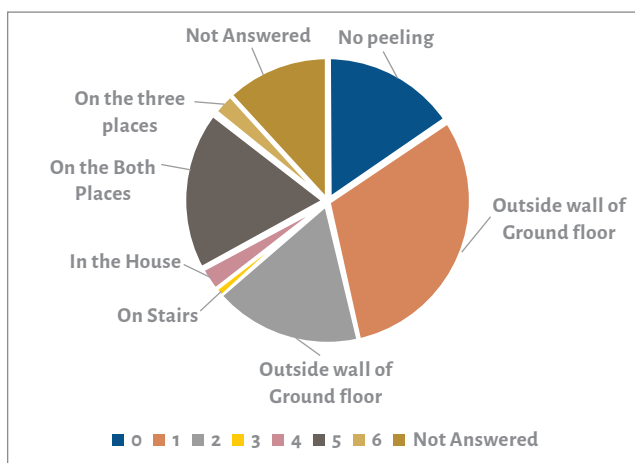
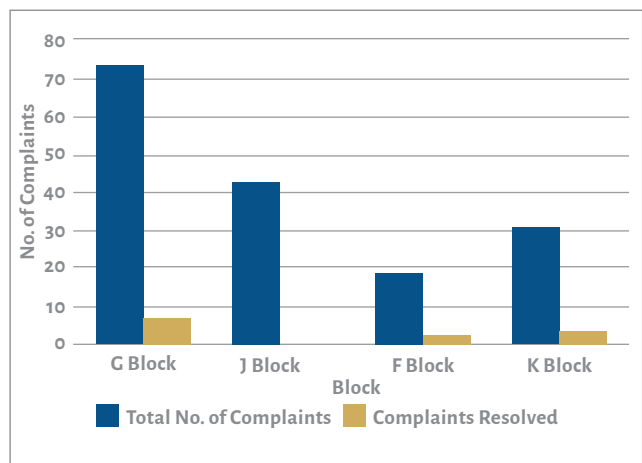


Figure 4: Complaints and DUSIB Response





**Figure 5: Exposed brickwork peeling on exterior walls (left) and seepage in toilet walls (right)**



**Figure 6: Cracks on the external walls of the buildings indicating poor quality of construction and Poor maintenance of drainage system and common areas**



having carried out repairs on their own or by DUSIB at least once after taking possession and relocating to their DUs. Nonetheless, these problems were not consistently reported across the four blocks which were surveyed. Since maintenance for the entire Society is being carried out by DUSIB, it may be surmised that construction quality, including quality of materials used, differs across the Society.

Significantly, DUSIB was reported to have been apathetic or unresponsive to residents' requests and/or complaints

for repair and other issues related to maintenance. As per its own guidelines, DUSIB is responsible for providing maintenance to allottees for a duration of five years after possession. Although 80% of the surveyed households have been in the Society for less than five years, less than 10% reported that their grievances were resolved by DUSIB. Respondents from J block were worst affected, with no complaint being resolved despite the highest number of complaints per household.



## Conclusion and Recommendations

One of the primary missions of the RRAY was to redress “the failures of the formal system that lie behind the creation of slums by planning for affordable housing stock for the urban poor and initiating crucial policy changes required for facilitating the same” (5). The scheme aimed to empower communities “by ensuring their participation at every stage of decision making” (5). Our assessment of living conditions and structural issues in the EWS Housing Society at Baprola Phase 2 reveals that neither of these stated goals have been met in execution of the scheme on ground. Allottees and their families have already been suffering from lack of accessible fair price shops and loss of livelihood due to relocation. Living conditions such as these have only worsened their financial and emotional well-being, perpetuated structural inequities, and pushed them into greater vulnerability. The alarming prevalence of seepage and other structural and construction issues in most of the surveyed households in less than five years after completion and possession of the DUs highlights the lapses of omission and commission committed by DUSIB, the implementing agency. Carrying out repairs in such DUs will present an additional burden to the exchequer, which would not have been necessary had adequate care been taken to ensure adherence to basic building byelaws and standards as established by law.

Considering these findings indicate risk to life and health of allottees and their families in the Society, we suggest the following measures to ameliorate the living conditions of residents and set a benchmark for all such resettlement and/or rehabilitation projects in the future:

1. A comprehensive, independent, scientific, time-bound assessment of construction material used in all blocks of the Society be undertaken to determine quality of the material used.
2. All necessary repairs be determined and carried out by DUSIB within a time-bound manner in active consultation with the allottees.
3. Contractors and/or suppliers involved in construction of the Society be blacklisted and/or penalised if an assessment as per point 2 above reveals a deliberate lapse of commission.
4. All allottees who have carried out repairs in their DUs within five years of possession be duly compensated by DUSIB in lieu of its mandate to provide maintenance for this initial period.
5. Potable piped water must be provided to all DUs in keeping with the stated aims of the central as well as the state government.

## References

- Kalyani Menon-Sen and Gautam Bhan (2008). Swept off the map: Surviving evictions and resettlement in Delhi.
- Gautam Bhan, Tripta Chandola, Kinjal Sampat & Nidhi Sohane (2018). Building a Home. Building a Life: Incrementality and Investment in Resettlement Colony. Indian Institute of Human Settlements.
- Shahana Sheikh, Subhadra Banda and Ben Mandelkern (2014). Planning the Slum: JJC Resettlement in Delhi and the Case of Savda Ghevra. A report of the Cities of Delhi, Centre for Policy Research.
- Eesha Kunduri, Ritika Gupta and Sunil Kumar (2019). Industrial spaces and women's work: Reflections from Delhi. IWWAGE.

## Annexure 1: Questionnaire for the survey

1. Name
2. Which block do you live in?
3. When did you move to RRAY?
4. How many people reside in your home?
5. Are there cracks within your house? (Please tick all the relevant answers)
  - NO
  - YES, ON WALLS
  - YES, ON CEILING
  - YES, ON FLOORING
6. Is there water seepage or dampness on your walls? (Please tick all the relevant answers)
  - NO
  - YES, INSIDE THE HOUSE
  - YES, OUTSIDE THE HOUSE
7. Is there seepage in your toilet? (Please tick all the relevant answers)
  - NO
  - YES, ON THE WALLS
  - YES, ON THE CEILING
8. Is there seepage in your kitchen? (Please tick all the relevant answers)
  - NO
  - YES, ON THE WALLS
  - YES, ON THE CEILING
9. Are any bricks chipping in your building? (Please tick all the relevant answers)
  - NO
  - YES, ON THE WALLS
  - YES, ON THE CEILING
10. Have you complained about any of the above before? If yes, for what, when & to whom?
11. Have you gotten repair work done in your house in the past? If yes, when and how many times?
12. Is there adequate ventilation in the house? Do you get sunlight in the house?
13. Do you running water supply in the house? Is the drainage system in the house good?
14. How is the drainage system in the common facilities, and outside the building?
15. Take photographs of the cracks/ seepage/ brick: