CONTEXTUAL RESEARCH

Hearing from People in slums about Public Toilets in India

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Environmental Research led Design initiative

Research formed the basis for design interventions

Contextual and Ethnographic methods were employed for data collection out of which INTERVIEWS will be presented in this presentation.
Purpose of study

Intended Users

Research Focus

Research Questions

Urban Slum Sanitation

The country have about **93.06 million people living in slums** (2012). Demonstrate rural poverty in urban areas (1)

53.1% of the households in India **do not have a toilet**, this includes 69.3% in rural areas and 18.6% in urban areas (2).

Migration of rural population in urban areas due to economic reasons

Practice of Open defecation

1. zewnens(2010): NewDelhi
**Purpose of study**

- Intended Users
- Research Focus
- Research Questions

**State of Toilets in Slums**

**Public toilets remain unused**

**Design issues**

- Lack of ownership, maintenance, uhygenic
Purpose of study

**Intended Users**

Research Focus

Research Questions
Learn about open defecation and cultural lifestyle from real life users

Design a new public toilets for universal access in Indian slums, which are firmly rooted in Indian culture and practice.

The insights from the field study serves as the platform for designing new ‘enabling’ toilets for Indian users.
Purpose of the study

Intended Users

Research Focus

Questions

Why people **defecate outdoor**?

What are some of biggest problems with public toilets that deter use?

How **universal are the current designs** of public toilets?

Why bathrooms in public toilets are not used by women? What is more important to them users security/ privacy in public toilets?

Why public toilets are dirty and ill maintained?

What socio-cultural factors influence sanitary practices among slum dwellers?
Research Tools

Data Collection

Data Analysis

**Ethnographic study** in real site involving real users in natural settings

Locations of interviews: Varanasi, Hazaribagh, Kutch, Mumbai and Ahmedabad

**Over 150 people were interviewed:** individuals, in families and in groups

**Talking Points, Open Ended Interviews, audio-taped**, and the life in the slum and use of public toilets were **photographed**

The duration of the interviews ranged between **30 minutes to 1 hour**

A total of 7 set of different talking points were developed, one questionnaire for each of the following user groups: men, women, children from 7 yrs onwards, the elderly, people with disabilities, caretakers and maintenance people of public bathrooms
Three broad classifications by public toilet types and public toilet users, in three stages were developed

1. User Typology Based on Access

- **Public Toilets**
  - Only access to indoor
  - Equal access to indoor and outdoor
  - Partial access to outdoor and more access to indoor

- **Slums**
  - Only access to indoor
  - Partial access to indoor and more access to outdoor

- **Outdoor**
  - Only access to outdoor
  - Partial access to indoor and more access to outdoor
2. Toilet Typology Based on traffic and volume

- Community based toilets
- High traffic bathrooms train, bus station bazaar
- Medium traffic (parks, highways, temples)
- Occasional use (portable toilets for events, natural disasters)
**Methodology**

**Four Stage Process**

1. Notation

2. Data Classification by individual user according to the user typology based on access

3. Data Collation across user groups

4. Data Collation Across Important Design Issues
Four Stage Process

2. Data Classification by individual user according to the user typology based on access

Only access to outdoor

Prefers openness, walk and air circulation
Privacy not a major issue
Men and women go outdoor separately but select different areas to defecate

3. Data Collation across user groups

<table>
<thead>
<tr>
<th>Issues</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potty-Parity</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Security</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Privacy</td>
<td>●</td>
<td></td>
</tr>
</tbody>
</table>
### Methodology

#### Data Analysis

<table>
<thead>
<tr>
<th>ISSUES</th>
<th>SAME USERS</th>
<th>DIFFERENT USERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access (Handicap)</td>
<td>★</td>
<td></td>
</tr>
<tr>
<td>Bathing/Washing</td>
<td>★</td>
<td></td>
</tr>
<tr>
<td>Bathroom/Toilet Fixtures</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Cleanliness</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Collective behavior</td>
<td>★</td>
<td></td>
</tr>
<tr>
<td>Robing/Disrobing</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Independent use</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Odor</td>
<td>★</td>
<td>★</td>
</tr>
<tr>
<td>Outdoor toileting</td>
<td>★</td>
<td></td>
</tr>
</tbody>
</table>

4. Data Collation Across Important Design Issues
FINDINGS

Open Defecation
Universal Design
Stall Sizes
Cleanliness and Maintenance
Cultural Aspects
Other Environmental Shortcomings

Why people defecate outdoor?
Habit from rural areas, children being unpaid users receive least priority in toilet use
Poor design of public toilets (ventilation, odor, light)
Available open space
Poor understanding of health and hygiene

Design Implications
Design of the public toilet should meet cultural requirements
Educate users how to use public toilets
FINDINGS

Open Defecation

Universal Design

Stall Sizes

Cleanliness and Maintenance

Cultural Aspects

Other Environmental Shortcomings

How universal are the current designs of public toilets?

Inaccessible to children, the elderly and people with disabilities. Lack of support, handicaps everyone, creates dependency on caregivers, deter use and promote outdoor defecation.
**FINDINGS**

Open Defecation

**Universal Design**

Stall Sizes

Cleanliness and Maintenance

Cultural Aspects

Other Environmental Shortcomings

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**How universal are the current designs of public toilets?**

The squat pans are oversized or poorly designed.

![Images of public toilets](images)

![Diagram of squat pan](diagram)
**FINDINGS**

Open Defecation

**Universal Design**

Stall Sizes

Cleanliness and Maintenance

Cultural Aspects

Other Environmental Shortcomings

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**How universal are the current designs of public toilets?**

**Design Development- Squat Latrine with Different Users**

- Disabled users
- Pregnant women
- Across ages
How universal are the current designs of public toilets?

The urinals are mounted at heights inaccessible to children and People with disabilities.
How universal are the current designs of public toilets?

Sinks are mounted at heights inaccessible to children and crawlers.
**FINDINGS**

Open Defecation
Universal Design

**Stall Sizes**
Cleanliness and Maintenance
Cultural Aspects
Other Environmental Shortcomings

**Why bathrooms in public toilets are not used by women and they use the outdoor for bathing?**

The current size of bathroom and toilet stalls is 3’x3’, small for everyone. Do not allow robing and disrobing of Indian clothes, women return home in wet clothes.

**Design Implications**
Dedicated places for robing/disrobing will help bring women back to using bathrooms in public toilets.
**FINDINGS**

Open Defecation
Universal Design
Stall Sizes

**Cleanliness and Maintenance**
Cultural Aspects
Other Environmental Shortcomings

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**Why public toilets are dirty and ill maintained?**

**Water**

Lack of *ownership* in public toilets, unlike personal toilets
Cleaning is the work of “*lower caste*” workers
Building Material, poor design

**Design Implications**

Many Models of Ownership
What socio-cultural factors influence sanitary practices among slum dwellers?

Collective Behavior

Security over privacy

Design Implications

Choice of individual and communal use

Potty-parity
FINDINGS

Open Defecation
Universal Design
Stall Sizes
Cleanliness and Maintenance
Cultural Aspects
Other Environmental Shortcomings

Standing in Queue

Luggage Security

Design Implications

Incorporation of seats will help all users including the elderly, children and people with disabilities can rest while waiting.
Universal Design thinking

1) Install appropriate size stalls to facilitate independent use and caregiving.

2) Promote use of public toilet by incorporating the experiences of natural settings like maximum daylight, good ventilation, odorless environments.

3) Provide choice in fixture location and allow customization of stall interiors.

4) Address privacy and security issues of women.

5) Provide inclusive fixtures like latrines, washbasins, urinals that address the needs of wide range of users.
Thankyou

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Publications

Mullick, Abir; Agarwal, Shikha; Kumar, Ashok; and Swarnakar, Pushplata. New Bathroom Standards for Universal access. The Spandrel, published by the School of Planning and Architecture, Bhopal, India. July, 2012. (Accepted for Publication)


Abir Mullick and Ashok Kumar. Research and Design of a Cultural Product: The Squat Latrine. 56th Annual Meeting of the Human Factors and Ergonomics Society, October 22-26, 2012. (Accepted for publication)