Smart urban design, planning and integrated decision making towards building
CHILD FRIENDLY CITIES

Children and Youth for Safer Cities
Organised by UNICEF in partnership with NIUA, ACE, CDSA, GEAG and SEEDS

7-8 December 2017
Juniper Hall, India Habitat Centre, New Delhi
Why is it important to design our cities from a children’s perspective?

INDIA
472 million children (0-18 years) comprises of 39% of the country’s total population. Every fifth child in the world is Indian, home to the world’s largest population of children.
01
One in every eight children in urban India lives in slums.

02
The median number of household members per sleeping room is 4 amongst the urban poor population.

03
23 Million children below 14 years in urban India are at risk from poor sanitation; 8 million children are at risk due to poor water supply.

04
63 million adolescent girls in India live in homes without toilet facilities.

05
23 % of urban children (5-18 years) do not go to school.

06
Acute respiratory infections are leading causes of child mortality (30%) followed by diarrhoea (20%), caused by lack of sanitation.

07
7.1 % of road accident victims are in the age group of 0-14 yrs.
NCRB data: Last year, 39 percent of crimes in capital were against children.

NUMBER OF CRIMES AGAINST CHILDREN ACROSS 19 CITIES AT 39.6%. (NCRB)

In 2016, Delhi recorded the maximum number of crimes against children across 19 cities at 39.6%, and topped the list of cases under the POCSO (Protection of Children from Sexual Offences) Act at 1.3 — as per data released by the National Crime Records Bureau (NCRB) Thursday.

The data also showed that the maximum number of cases involving juveniles was registered in Delhi, with 766 involved in thefts, 143 involved in rape and 90 charged under the Arms Act.

As per the data, Delhi recorded 7,392 crimes against children, followed by Mumbai at 3,400 (16.9%) and Bengaluru at 1,333 (7%). The capital also topped the list of kidnapping and abduction cases of children at 5,457. Mumbai came in second at 1,864, followed by Bengaluru at 871.

The Humanitarian, 4-6-2016

The Indian express, 12-1-2017
Multiple Vulnerabilities faced by children in Urban areas

- Poor Living Conditions
- Insufficient Social and Physical Infrastructure
- Inadequate Transportation /Mobility
- Lack of Safety and Security
- Adverse impact on Public health

Multiple Vulnerabilities faced by children in Urban areas
Key Aspects of Child friendly Cities

**URBAN PLANNING**
- Mix of land uses
- Transportation
- Infrastructure
- Water supply and sanitation
- Open spaces

**URBAN POLICIES**
- Current policies at national level
- Current programs at national level
- Proposals under the Policy initiatives
- Contribution of Urban development policies
- Participatory Urban governance

**URBAN DESIGN**
- Mobility/Walkability
- Built environment
- Urban parks/ Access to nature
- Barrier free Access to amenities
- Safety and security

**URBAN DESIGN**
- Participatory Urban governance
- Proposals under the Policy initiatives
- Contribution of Urban development policies
- Current programs at national level
- Current policies at national level

**Mix of land uses**
- Current policies at national level
- Current programs at national level
- Proposals under the Policy initiatives
- Contribution of Urban development policies
- Participatory Urban governance

**URBAN DESIGN**
- Mobility/Walkability
- Built environment
- Urban parks/ Access to nature
- Barrier free Access to amenities
- Safety and security
Children are India's supremely important asset

Did you know?

- India is home to the largest number of children in the world.
- 19 percent of world's children live in India.
- India has 21.6 crore children in the age group of 0-8 years.
- 9.8 crore (26%) children reside in Indian cities.

Key National Policies

- National Policy for Children, 1974
- The National Charter for Children, 2003
- The National Policy for Children, 2013
- National Plan of Action for Children (NPAC), 2016
### Government Initiatives/Programmes In India Towards Child Friendly Development

<table>
<thead>
<tr>
<th>SMART CITY MISSION</th>
<th>AMRUT</th>
<th>HOUSING FOR ALL BY 2022</th>
<th>SWACHH BHARAT MISSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Better infrastructure for children</td>
<td>• assured water supply in every household along with a sewerage connection</td>
<td>• could help improve the state of children living in slums by improving their housing conditions</td>
<td>• improved sanitation</td>
</tr>
<tr>
<td>• Housing for all</td>
<td>• developing greenery and well maintained open spaces;</td>
<td>• aims to create a mix of housing stock</td>
<td>• improving the health profile of the city population including children</td>
</tr>
<tr>
<td>• Walkable localities</td>
<td>• reducing pollution by switching to public transport</td>
<td></td>
<td>• priority to houses with children, and pregnant and lactating mothers.</td>
</tr>
<tr>
<td>• Variety of transport options</td>
<td>• at least one children’s park every year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Developing open spaces</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• inclusion of children in decision-making</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Smart City Mission**: Mission Transform Nation
- **AMRUT**: Atal Mission for Rejuvenation and Urban Transformation
- **HOUSING FOR ALL BY 2022**: PMAY (Pradhan Mantri Awaas Yojana)
- **SWACHH BHARAT MISSION**: Swachh Bharat Mission
Child Specific AMRUT Proposals In Indian Cities

1ST STEP TOWARDS CREATING INFRASTRUCTURE SPECIFIC TO CHILDREN

**JAIPUR**
Provisions for child friendly parks are proposed under the mission

**SURAT**
Children play area in parks more than one thousand sq.mt. with maximum play equipment & ice-cream/Food Parlor

**KOCHI**
20% of the parks out of 48 parks across the city, have planned play area.

Kochi Corporation is planning to install child friendly equipment

**JABALPUR**
JMC plans to cover the housing area parks first and after that other parks shall be considered for child friendly components

**INDORE**
Developed 100 Housing Area Parks with Boundary wall. At least one Neighborhood Park every year of area not less than 1 Ha to be developed as Children Friendly Park.

**BHUANESHWAR**
Parks maintained under BDA has child friendly equipment

**VISHAKHAPATNAM**
Children play zone and innovative components shall be emphasized through private investment.

**CURRENT PROPOSALS ARE FOCUSING MAJORLY ON DEVELOPING PARKS AND OPEN AREAS**
When planning child friendly cities, often it is about providing playgrounds and parks ... It is much more than this ...
Planning Principles for A Child Friendly City

Centered on the creation of appropriate child friendly physical infrastructure with an intent to achieve child-friendly outcomes via improvements in physical and social environments in which the children grow up.
Current Planning areas And How They Can Be More Responsive To The Needs Of Children

TRANSIT ORIENTED DEVELOPMENT
- Less cars
- Enhanced walkability
- Improved public transport system
- Reduced travel distances

COMPACT DEVELOPMENT
- Mixed use development
- Eyes on the street
- Smells, sights and sounds
- Less vehicles
- Better air quality

HOUSING NEEDS FOR EWS, LIG.
- Affordable housing to cater to housing shortage
- Standard size for EWS housing: 30sqm
- Rental Housing

WATER SUPPLY AND SANITATION
- Access to clean water and toilets
- In the public realm too
Children are not forced to use unsafe transport modes.
[COMPACT] neighborhoods

Optimized [DENSITY] [MIX] of housing types
Access to proper housing – structural safety, adequate light/ventilation, adequate space, privacy
ACCESS to Basic Infrastructure – safe water, sanitation etc.
ACCESS to Social Infrastructure
NIUA supports Child Friendly Cities
Design Principles for a child friendly city

The Popsicle test: a child can safely walk to a store, buy a popsicle and return home before it melts.
MIX of uses/amenities – parks, libraries, recreation / community centers, health center, shopping etc. in the vicinity of the home
Independent/safe **[MOBILITY]**

being able to walk/ cycle where you need to go sidewalks, crosswalks, shaded streets, lighting, signage etc. incl. facilities for the disabled
[VIBRANT/ ACTIVE] public realm, permeable frontage, stronger community connections

Improved pedestrian safety through traffic calming measures, wider sidewalks, scaled lighting etc.
[Access] to allocated/inclusive recreational and public spaces (incl. liminal spaces (between front door and street))
[FUN] street art, creative public spaces, diversity
Children led initiatives in India
Identify key interventions & methods of transformation

- Green
- Walkable
- Mixed-use
- Bikeable
- Accessible
- Sustainable
- Safety

Urban and public spaces promoting children
Towards Child Friendly Smart Cities

- Mainstream the needs of young children in Indian cities through urban planning, design practices and policy within the urban agenda of building smart cities
- Promote knowledge driven, advanced and effective child friendly urban planning frameworks
- Include children's perspective and participation in the planning and management of cities and their growth
Work done so far under CFSC

- Impact on policy and guidelines for National Missions
- Communication and Advocacy - promotion of child friendly cities
- Impact on school curricula and pedagogy in planning and architecture schools
- Embedding the links between spatial and physical planning and the well being of children in Indian cities
- Building and knowledge sharing – SmartNet/other cities
- Urban planning and design support unit focusing on outcomes related to children
- Child friendly Design and Infrastructure
- Capacity building
[PROACTIVE PROCESS]
research, participation and action

[COLLABORATION]
Support of city agencies, participation of stakeholders

[CONVERGENCE]
information/ knowledge sharing, technical support

[OWNERSHIP]
Commitment of local government, champion of vision

[NETWORKING]
With local institutions, subject experts, civil society
The National Institute of Urban Affairs (NIUA), has undertaken an initiative in partnership with the Bernard van Leer Foundation (BvLF) to build Child Friendly Smart Cities (CFSC) in India within the urban agenda of building smart cities. The goal of this initiative is to mainstream the needs of children in the urban policy and planning framework of Indian cities under key theme areas - public health, safety and security, transport and mobility and living conditions through programme of activities focused on advocacy and interventions in urban areas.
Moving forward

1. Consolidation of Learning on Child Friendly Cities
   • Addressing different groups of key stakeholders, providing actionable points and agendas that they ought to pursue in order for making cities better for all children, with focus on urban design and planning strategies and tools.
   • A fast-track review of proposals and projects of select cities under the AMRUT and Smart Cities Mission with respect to the relevant aspects.

2. Evidence Based Analyses – Primary Surveys and Studies
   • Assessing School Transport Systems and options for children
   • Audits of public places and streets

3. Developing a Decision support system to inform urban planning and management
   • Assessing children’s needs on a scaled-up, pan-city basis by developing and using a GIS enabled Decision Support System

4. Dissemination, Outreach and Public Engagement
Integrate Technology to support decision making

POC for an Interactive Spatial Decision Support System (ISDSS) Mapping data-correlation of spatial planning with Public health and safety

GIS Platform to correlate community profiles and their vulnerabilities

- for decision makers to take decisions
- disaster mitigation
- quick action by administrators in times of emergencies
Interactive Spatial Decision Support System
– A web enabled GIS platform presenting Delhi city's school resilience capacities
Focal Point of the Study/Application: Delhi Schools

Purpose: To analyse the levels of vulnerabilities Delhi schools are facing with relation to emergency & availability of basic services, environmental facilities etc.

Study Area: Core City Level & Pilot Ward Level
Out of the 272 wards, thematic layers related to different services including schools is available for 204 wards only at present.
Schools at Risk in Core City

The queries were set on three disaster scenarios, i.e. Flooding, Earthquake and Fire. Deficiencies in services can be pointed out by this system in order to promote informed decision making for urban planning and management.

<table>
<thead>
<tr>
<th>QUERIES</th>
<th>KEY FINDINGS</th>
<th>PLANNING ASPECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools more than 2Km from</td>
<td>27 schools are located at a distance of more than 2 Kms from a hospital</td>
<td>Non uniform distribution of public health/ emergency response services</td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools more than 2Km from</td>
<td>24 schools are located at a distance of more than 2 Kms from a police station</td>
<td>Emergency response time increases-impacting safety and security of children</td>
</tr>
<tr>
<td>Police Station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools less than 500mtr from</td>
<td>834 schools are located within 500 mts from drain</td>
<td>Schools located in Low lying areas- prone to water logging</td>
</tr>
<tr>
<td>Drain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools more than 100m from</td>
<td>937 schools are located at a distance of more than 100 mts from a park</td>
<td>In case of disaster, no adequate evacuation area</td>
</tr>
<tr>
<td>Park</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Station in different</td>
<td>High population density zones have higher concentration of schools and lower</td>
<td>Longer emergency response time-leading to higher risks</td>
</tr>
<tr>
<td>population Density Zones</td>
<td>concentration of fire stations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Schools at Risk in Core City

![Schools More Than 2KM From Hospital](image1)

![Schools More Than 2KM From Police Station](image2)

![Schools Greater Than 100MT From Park](image3)

![Fire Station in Different Population Density Zones](image4)

![Schools in Different Population Density Zones](image5)

![Schools Less Than 500MT From Drain](image6)
Primary data of 5 schools of east Delhi and 5 schools of West Delhi in both planned as well as unplanned but regularized areas has been collected.
## Pilot Ward Level: Key Findings

**Primary Survey:** Information about school’s basic infrastructure including:

<table>
<thead>
<tr>
<th>QUERIES</th>
<th>KEY FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single storey school 500 mts from drain</td>
<td>In East Delhi neighbourhood, 2 major lanes and 7 sub lanes are identified as roads with schools within 500 mts radius and are prone to water logging</td>
</tr>
<tr>
<td>Areas prone to waterlogging</td>
<td></td>
</tr>
<tr>
<td>Roads prone to waterlogging</td>
<td></td>
</tr>
<tr>
<td>Schools within 500 mts from waterlogged roads</td>
<td></td>
</tr>
<tr>
<td>Schools with no playground within premises</td>
<td>East Delhi Primary School &amp; Vinod Nagar Co-education Senior Secondary School in East Delhi do not have any play ground within premises</td>
</tr>
<tr>
<td>Schools located on Narrow roads</td>
<td>Sukho Khalsa Senior Secondary School &amp; Sarvodaya Kanya Vidyalaya in West Delhi are located within 100 mts from narrow roads</td>
</tr>
</tbody>
</table>

1. **Not all schools have play grounds, maidans or open spaces around for emergency evacuation**
2. **Poor accessibility for fire tenders/ambulance**
Pilot Ward Level: Mapping & Primary Survey
Making cities child-friendly is an objective that cuts across many overlapping problems and doesn't just benefit children - women, elderly, differently-abled all stakeholders stand to gain.

The CFSC Agenda provides a platform to plan and build sustainable and inclusive cities from the perspective of children ultimately,

“Making Cities Better For Everyone”