

Place Matters

Handbook of Global Best Practices on Place Making For Children



Foreword

India's rapid urbanization brings with it huge opportunities for growth and leadership, but also challenges the country to design a high quality of life for the 128 million children who reside in urban areas.

Children's early experiences as babies and toddlers have effects that last a lifetime. Young children thrive in secure, stimulating environments that offer opportunities to engage, have fun, and learn. They deserve a good start in life to help shape their overall development, future health, and well-being, as well as nurture a new generation of productive workers and upstanding citizens.

At the Bernard van Leer Foundation, we believe that giving all children a good start in life is both the right thing to do and the best way to build healthy, prosperous and creative societies. Our Urban95 initiative is rooted in the belief that when urban neighbourhoods work well for pregnant women, babies, toddlers and young children, they also tend to nurture strong communities and economic development.

Place Matters: Handbook of Global Best Practices on Place Making for Children furthers this belief, serving as a ready reference for city agencies and other stakeholders to take lessons from best practices across the world, and adapt some of these to improve the everyday lives of young children. Pro-active urban experiments such as those documented in the book can help cities promote young children's everyday freedoms and choices, linking them safely and directly to their local geography and facilitating their mobility.

I congratulate the National Institute of Urban Affairs and its Child Friendly Smart Cities initiative for bringing together these innovative cases of learning from across the globe. I hope that these inspire positive and impactful changes in Indian cities, and in the process, cultivate a unique identity for the city and foster a sense of belonging in its youngest residents.

Michael Feigelson
Executive Director
Bernard van Leer Foundation

TITLE

PLACE MATTERS: HANDBOOK OF GLOBAL BEST PRACTICES ON PLACE MAKING FOR CHILDREN

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Preface

Cities, with their complexities and numerous stimuli, act as strong catalysts in developing the thinking of their receptive young residents. The actions and reactions of children when they engage with the built environment form the warp and weft of urban communities. While older children have a larger variety of urban interactions spread across the city, the scale and spread of this engagement for very young children (0-5 years) ranges from home at the most to local parks and streets and the neighbourhood; primarily comprising of their homes, schools and play spaces. A child-friendly city ensures children's accessibility to all of these as well as creates an enabling built environment that is healthy and safe; that develops their faculties, and fosters their love for community and for nature.

The Child Friendly Smart Cities (CFSC) initiative at NIUA is supported by the Bernard van Leer Foundation (BvLF). Both NIUA and BvLF firmly believe that the built environment plays a critical role in the holistic development of children. CFSC has assimilated knowledge from best practices throughout the four years of the initiative. The first Compendium of Best Practices published in 2016 focussed on country and city level policies and interventions. This book, the second in the series, brings together a carefully chosen collection of case studies that demonstrate the powerful positive impact of well-designed built space on children, specifically lovingly and sensitively designed 'nodes of interest' i.e., live, learn and play spaces. The collection also showcases best practices of local area or neighbourhood level planning and design that have huge significance in affording young children their everyday freedoms and make it safe and fun for them and their caregivers to move about freely from one 'node of interest' to another .

The handbook is designed to extract and disseminate 'big ideas' from small-scale, impactful interventions to be adopted and adapted by Indian cities, organisations, schools, neighbourhoods, and residents. Aptly titled, 'Place Matters', it highlights the local initiatives and designs that have been critical to a city's overall success. This book is a result of the collective effort put in by the CFSC team, particularly Divya Jindal, who compiled and researched case studies from across the globe and Kanak Tiwari, Team Lead for CFSC, who has been instrumental in giving focussed direction to research and knowledge management under the initiative.

The CFSC team hopes that it would be a valuable resource book on innovative community-driven projects and practices undertaken at neighbourhood scale that have successfully engaged children and families in the decision-making process.



Jagan Shah
Director, NIUA

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About the book

Place matters: Handbook of global best practices on place making for children is designed to be a step towards learning from small-scale yet impactful initiatives from across the globe. The book documents real-time global examples and acknowledge the initiatives that have contributed towards making cities better places for children.

Making cities from the perspective of children is still a nascent subject globally, even more so in India. Although sincere efforts have been made towards empowering children with basic rights, the urban sector has provided only the minimum to fulfil their everyday needs. While organisations working on children's rights have highlighted the need to empower all children with basic human rights, it is critical to ensure the built environment is also designed keeping their needs in mind. Especially for children within the 0-5 years age group and their caregivers as their needs have to be provided locally to be easily accessible; as they are more dependent on their parents and caregivers. The handbook emphasises on the early childhood needs and elements within the built environment that contribute positively to the children's overall development including their cognitive and motor skills.

The handbook is focused on the way children live, play, learn and move between these places within the age of 0-5 years, and interventions at the neighbourhood level have substantial influence on them; further highlighting the importance of scaling of neighbourhoods from their perspective. In addition, some examples demonstrate how residents and families can also contribute towards bringing about changes in the built environment of a neighbourhood to enhance the liveability quotient, leading to stronger communities that are responsible about their surroundings and sensitive towards the needs of children.

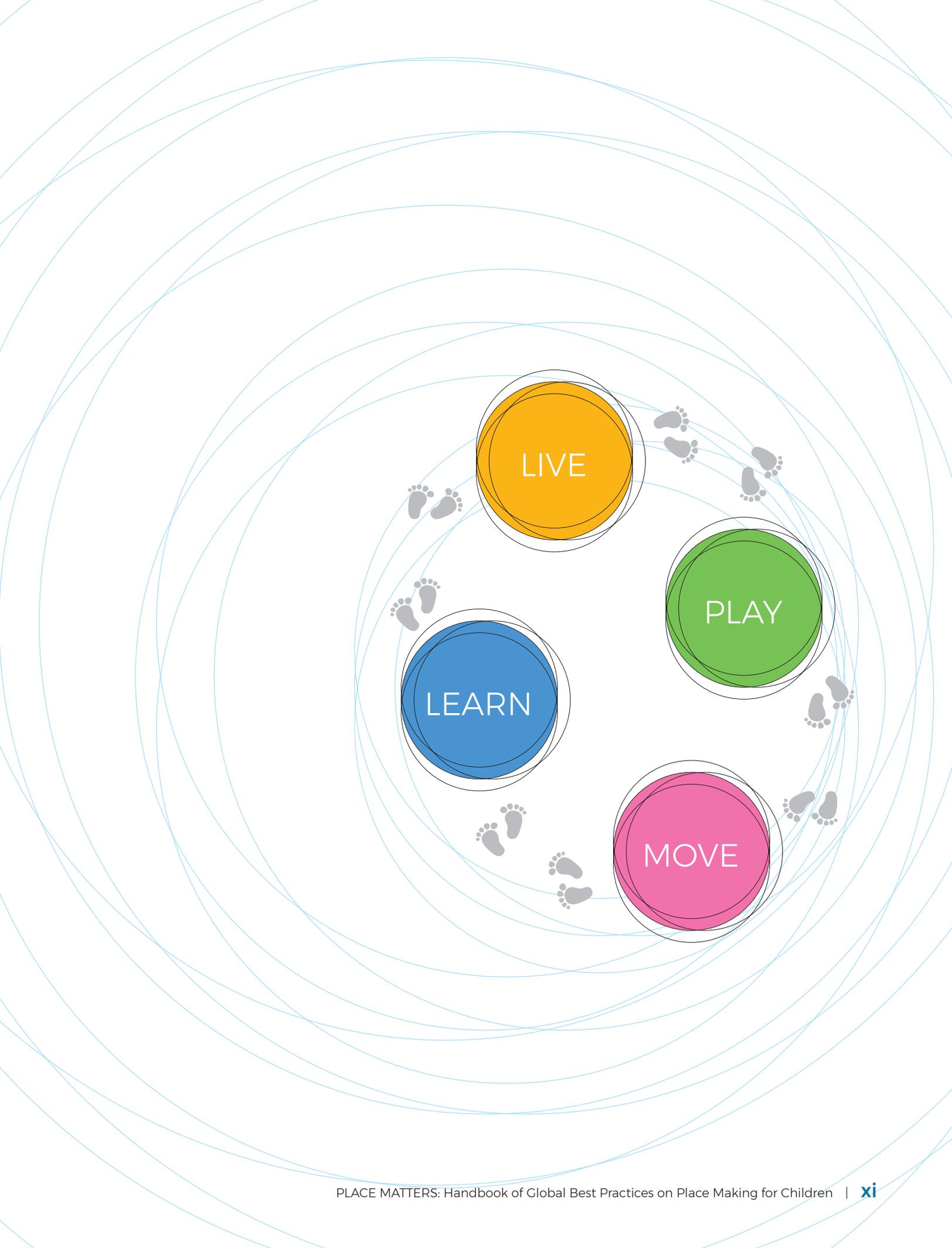
The case studies also address the importance of learning from each other and understand how communities across the globe have been able to drive their local authorities and in some cases, even national policies, bringing children to the forefront of decision making and planning and urban design discussions. We hope that the handbook would serve as a reference to enable urban designers, planners and architects to find better ways to design homes, parks, schools, neighbourhoods, and cities that nurture childhood.

Place Matters is the second volume of best practices collated by the CFSC team, the first being the *Compendium of Best Practices of Child Friendly Cities-2017*. Cities in India are in a phase of transformation facilitated by the national urban missions such as Smart Cities Mission, AMRUT and Swacchh Bharat, and these examples can help trigger big change through small interventions and show the way towards active community participation, as people can be united on the aspect of well-being of children.

Moving forward it is hoped a stronger and collective voice towards improving the built environment for all children can be formed through learning and sharing ideas from across the globe. As famously quoted by Enrique Peñalosa '*If we can build a successful city for children, we will have a successful city for all people.*'

Kanak Tiwari
Team Lead

Divya Jindal
Research Associate



LIVE

PLAY

MOVE

LEARN



INTRODUCTION

Place making for children

Children are a universal indicator of the level of well-being in a society. The primary image of their urban environment experience and initial understanding of their ecosystem and overall urban conditions are based on where they grow up. Understanding that children's exposure to environmental, social and physical changes in the places where they live, play and grow affects their vulnerabilities to health and overall development during every stage of their life and especially the early years. It is critical to map out spatially and understand the areas where children get exposed to possible environmental hazards and assess the risks faced by them in order to address the shortcomings.

With the changing course of the way cities grow, it becomes more relevant for policymakers and urbanists to understand how urban communities function and how the inter-relationship between the child and the urban ecosystem is drawn. This is most important for urban designers and planners in order to better equip them towards making equitable and inclusive cities for all children.

Often a city's decision makers find it difficult to look beyond current challenges due to the lack of ample global comparative examples, particularly those concerning children and the built environment. There is a definite need to encourage cities to share ideas and ways to address various concerns to help city managers and decision makers correlate community profiles and their vulnerabilities. Proactively recognising these urban design and planning aspects and finding ways to deal with them is crucial to creating a more equitable and inclusive urban

environment for all children.¹

Poorly designed living environments and lack of proper infrastructure have been linked to a wide range of negative impacts such as poor physical health and social interaction, low educational achievement and cognitive development, behavioural and socio-emotional problems and poor respiratory health.² Improper design of buildings creates health risks for children from a physical safety perspective. Physical features such as street layouts, frequency of pavements, pedestrian crossings, cycle tracks, access to recreation facilities etc. further influence the mobility and safety of children.

The many considerations that are part of the urban design process have a real impact on the health of a large portion of the urban population. This is especially so in the case of very young children, as their physical mobility and independence is limited within the neighbourhood area. When the built environment does not cater to their basic everyday requirements, they become even more vulnerable. Realising the need to focus in this area, and with the work already undertaken through the Child Friendly Smart Cities (CFSC) project at the National Institute of Urban Affairs NIUA, this document has been prepared with a focus on global examples of where children of the age group 0–6 years primarily move within a neighbourhood. To understand that in detail, a framework focusing on three key areas of intervention — live, play and learn in places where there is a large concentration of children during most hours — has been designed.



LIFE AS A 3 YEAR OLD

LIVE. PLAY. LEARN Framework

Children between the ages of 0–5 years are primarily taken care of by parents or care givers. Mostly children in that age move between homes, play spaces and day care centres and primary schools. These years are the most crucial for their cognitive and motor skills and overall development. Those skills that cannot be acquired at later stages of life and cannot be taught, children learn primarily through play, exploration and self-discovery.

Children spend most of their time between school, home, care facilities and play areas. While it is important to assess each of these spaces because of the direct impact, they have on the overall development, health and happiness of a child, it is also imperative to know how children move between these facilities. However, understanding that these spaces have a higher concentration of children during most hours, the focus is not just restricted to these areas. The aim is to better understand and share the interrelationship between design and planning on everyday life and overall health and development of children. It is also important to understand how children actually move between these places, and how these places can better address their needs.

With the understanding that this inter-relationship between spaces is key to ensuring children's everyday freedom, a neighbourhood offers the appropriate scale for a child to be self-sufficient and move about freely, to use daily basic requirements of play, school and housing. A neighbourhood should be able to cater to all these basic facilities of ensuring a mix of housing typologies, ample play areas, day care facilities and schools within safe, walkable and accessible distances. However, in most Indian cities this has not always been possible, although

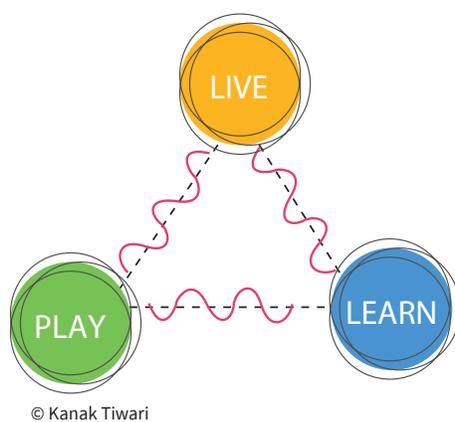
planning norms and standards exist. It is critical to evaluate how neighbourhoods, and furthermore, the city can be designed/planned to better cater to everyday needs of children. To achieve this it is vital to look at the different scales on which a city works and how children navigate the spaces between these areas.

Tools such as the popsicle test, tot-lots, and Urban 95 cm help understand the gaps that exist within the built environment on place making at the neighbourhood level with a focus on children within the age group of 0–6 years. The report focuses on key examples globally where

through focus on urban design and planning, initiatives at community scale and small-scale interventions have had a lasting impact on children of the communities, the communities as a whole. In Addition have made a greater impact on policy and design dialogue.

The study lays emphasis on three essential areas of a child's everyday needs and movement pattern between the areas of 'LIVE, PLAY, LEARN'. LIVE is centered at residential

neighbourhoods,³ the liminal spaces in between houses, basic infrastructure and living conditions. PLAY includes neighbourhood parks and play areas, tot lots, open spaces within housing societies and around. LEARN includes care facilities such as play schools, primary schools, day care centres, and anganwadis. The study also focuses on both analysing these nodes as areas of key concentration of children at a different times of the day, in addition to understanding how children move between these places. This includes the different modes of transport taken and how appropriately are they designed to cater to the needs of children in terms of safety and distances travelled and overall time spent in moving from one place to another.



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Leading the way

Shared in this booklet are some of the initiatives where local authorities and communities have reflected that sincere efforts and focused interventions can lead the way for lasting changes in urban design, planning and even policy, making the lives of children living in those areas better. The areas where children move have been divided into 4 key sections:

Live

Play

- Parks and Play Spaces
- Streets

Learn

- Primary Schools
- Day Care Centres/Kindergartens/Anganwadis

Mobility

- Understanding how children move

Within these six parts, global examples have been mapped from around the globe, which have been exemplary at their community and neighbourhood levels and have had a huge positive impact on the lives of children living in those areas.

These practices are not exhaustive as the criteria was to focus on initiatives where:



Prime focus was on early childhood



Community engagement



Localised solutions



Scalable solutions



Innovative use of materials



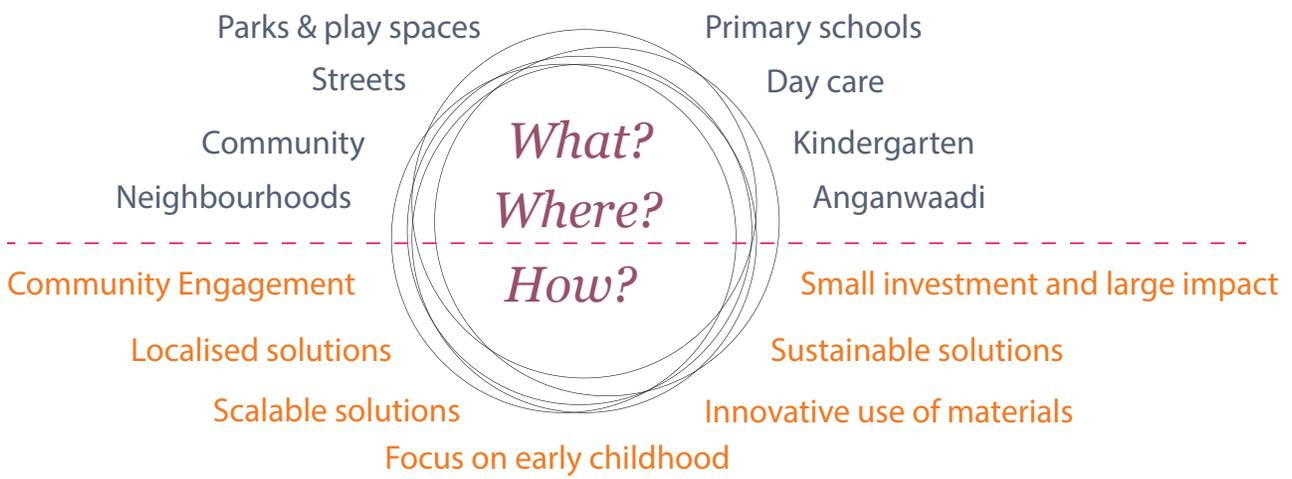
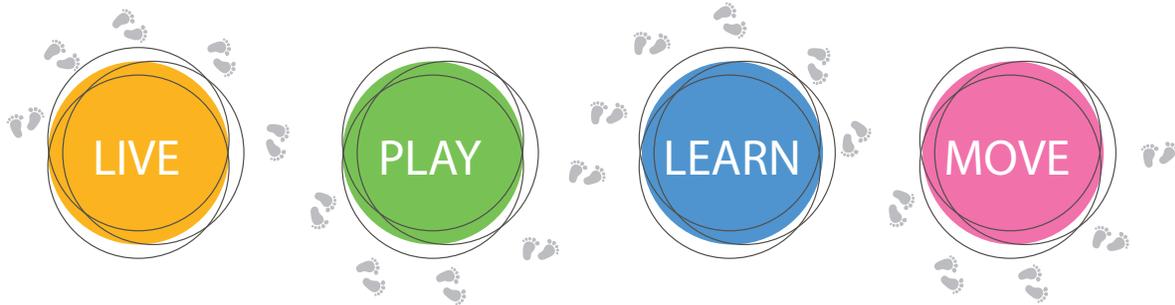
Sustainable solutions



Small investment and large impact

A key objective in collating these global examples was to focus on solutions that could be easily translated to Indian cities or from which relevant initiatives could be triggered off. These would help city agencies, stakeholders, communities, and NGOs to learn how to initiate impactful interventions locally and to collaborate both locally and with those cities globally focusing on similar projects, to improve the everyday lives of children living in these areas. However, it is important to emphasise that materials and resources should be available locally for Indian initiatives.

Where does a 3-year old go?







LIVE

Live: Neighbourhood units

Where children live – the condition, location and stability of accommodation has a wide-ranging impact on the early health and development of children.¹ Safe and stable housing is essential to support healthy child development and family life. Children thrive in secure, stimulating environments that offer opportunities to engage and learn; however, far too many are exposed to inadequate housing conditions that threaten their physical, emotional, and cognitive development.² Children in poor or improper housing are generally 1.5 and 3.5 times more likely to develop coughs and common allergies and ailments such as meningitis.³ They are also at a 25% higher risk of contracting severe ill health and disability issues during childhood and early adulthood.

Housing instability refers to precarious, unsafe, or unsustainable situations. Examples of conditions that make housing unstable include poor quality construction, overcrowding, frequent mobility and — in the most extreme cases — homelessness.⁴ Housing instability has both immediate and long-term consequences for children. These consequences extend across multiple domains, including physical and mental health, learning and cognition, and academic achievement.⁵

The average family size (also known as household size) in urban India is 4.3,⁶ which includes the children, parents and grandparents living under one roof. Many times, families from poor neighbourhoods cannot afford to have separate rooms for children, leading to living in cramped-up homes. This lack of ample space for kids to play and move around in their own homes and lack of privacy affects both their physical and mental growth. Under the Pradhan Mantri Awaas Yojana PMAY, the carpet area for EWS and LIG houses is 30 and 60 sq m respectively. Although the areas may have been improving, the conditions for children to get ample space in a house still remains a matter of debate. On the other hand, the cost of housing has been rising. Rents take up about one-third of the income of families, while those buying their own home spend almost 15–20% of their income on mortgage payments.⁷

In addition to the state and city level housing policies, local authorities have a number of existing responsibilities for housing, spatial planning and support for vulnerable families, which they should be fulfilling in a way that is responsive to the needs of young children alongside

other sections of the population. These include support to homeless families with children to find suitable accommodation, enforcing standards in rented accommodation, dealing with environmental health and plan building developments so that they take account of the needs of the local population.⁸

Traditional Indian neighbourhoods were designed in a way that aspects of sun, shade, light, eyes on the street, enclosures, and other basic aspects of urban design were organically taken care of. However, with the changing urban fabric, lifestyles and aspirations, neighbourhood planning has evolved towards higher densities and less ground coverage. Hence, the methodologies also need to change to newer and contemporary approaches towards making neighbourhoods in urban areas particularly, child- and family-friendly.

In making neighbourhoods more child-friendly, local authorities now understand the value of using children and youth as a resource at neighbourhood level to help plan out their neighbourhood better. It is now understood that children themselves can perceive their problems at the neighbourhood level. Through initiatives such as ‘Map my community’ by Dr. Sophie Hadfield-Hall for parts of Delhi and Pune, children from communities mapped their neighbourhoods and addressed their problems to the local administrator. The initiative helped them learn about their area, be empowered, and in the process improve the neighbourhood through their active participatory actions.

Tests such as the Popsicle test, where a child has to run to the nearest store, buy a Popsicle, and come back home help to understand a neighbourhood from the perspective of a child on various parameters of safety, security, distance from home, street network etc. Similar exercises such as the toddler walk-shed, urban 95cm the world over are being designed to better understand urban areas from the perspective of younger children and to ensure their everyday freedoms in terms of mobility, safety and play. These innovative exercises have been good tools for city agencies to recognise and understand the way children navigate between places at the neighbourhood level and aspects that concern them.

In this chapter the aim is to bring together global examples that have addressed the needs of children in

neighbourhood planning and the positive impacts these initiatives have made in their lives. It is hoped that some of these initiatives will help trigger relevant changes in

the design and planning of neighbourhoods and housing in urban areas in order to improve the everyday lives of children and families.

1. Barcelona Superblock



Barcelona, constructed in a relatively small area of 92 sqkm, with a density of 16,000 inhabitants per sqkm—still one of the highest in Europe—represents a model that serves to put into question the relationship between the compact city and its administration.⁹ The city initiated a programme entitled ‘Let’s fill streets with life’, the establishment of Superblocks in Barcelona, came about from the need to rise to the two-fold challenge of improving people’s quality of life, by making the city healthier and more habitable, while reducing the impact of human activities and ensuring the environment’s short- and long-term integrity.¹⁰

With traffic and noise pollution increasing, the initiative became a part of the new mobility plan, with the aim of reducing the city’s traffic by almost 21%. The plan aims to free up nearly 60% of streets currently used by cars by turning them into active ‘citizen spaces’. This is based on the idea of superblocks, with mini neighbourhoods around which traffic can flow and the spaces within can be repurposed for citizens.¹¹

The objective of the intervention is to reduce car use over the coming two years and increase mobility by foot, bike and public transport. The superblocks will be complemented by the introduction of 300 km of new cycling lanes, in addition to the existing bus network, whereby buses only navigate a series of main thoroughfares. The new repurposed spaces within the blocks can be used for children to play and communities to flourish.¹²



Aerial view of the Barcelona superblocks

Source: <https://i1.wp.com/stay-u-nique.com/blog/wp-content/uploads/2016/06/Eixample-Sagrada-Familia.jpg?w=1400&ssl=1>



People using the inner streets freely, without any vehicular movement

Source: <https://planning.ubc.ca/vancouver/news-events/photo-gallery/2017-01-24/barcelona>

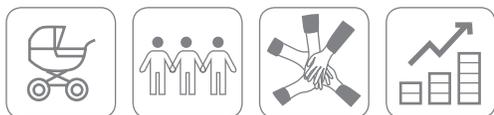


Weekend market to revitalize the inner streets and local markets

Source: <https://www.weforum.org/agenda/2018/06/cities-go-wild-with-child-friendly-design/>

Image: Thomson Reuters Foundation/Sophie Davies

2. St. Lawrence Neighbourhood, Toronto, Canada



The St. Lawrence neighbourhood is one of Toronto's best examples of a complete community. It was one of the first planned communities to integrate community facilities within the base of residential buildings. The area was planned to ensure that community facilities were phased in as the area grew. This provided a focal point for the emerging neighbourhood, ensuring that residents had access to common facilities in addition to a mix of uses, including schools, stores, restaurants and other services¹³.

The community includes schools that were co-located, another first in Toronto. The Crombie Park Apartments and Downtown Alternative school is the best example: it combines residential, retail, two schools, a park and a recreational facility. The gymnasium and other school facilities are available to the community during off-hours.

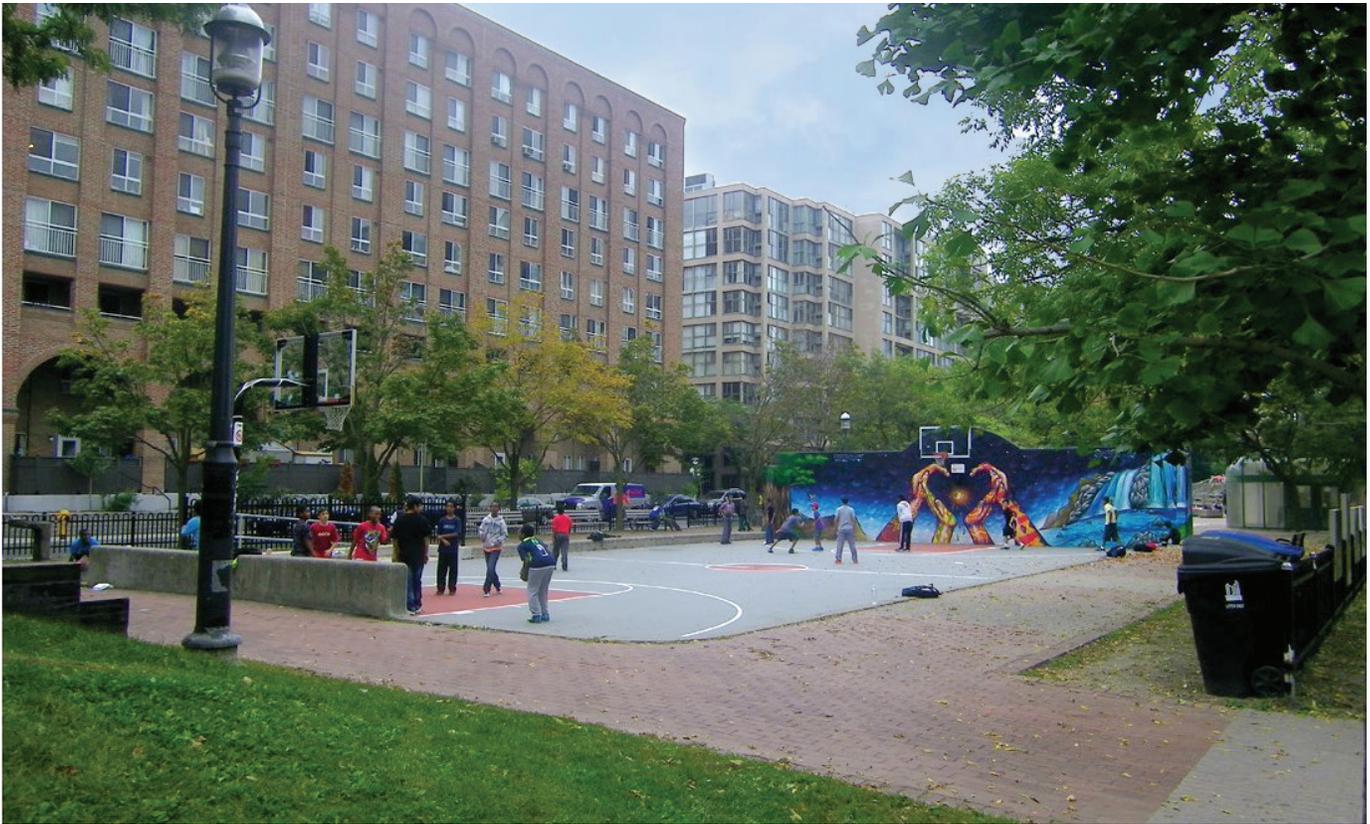
The playground in the centre was designed to appear as part of the linear public park; however, the lands adjacent to the school are private property. During school hours, the school community uses the playground. During off hours the larger community uses it, as it is not fenced off.¹⁴ The park is a major open space-structuring element for the neighbourhood that helps to spatially define the community and provide it with an identity.

All neighbourhood amenities were phased into the development to ensure equitable access to childcare, school and a community centre. With most of the residential buildings designed with mixed use, it ensured convenient access to all local services. Additionally, with nearly half of the development devoted to streets and open space it has been regarded as one of the most interactive neighbourhoods developed for community living. The linear park framed the neighbourhood and provided a high quality, safe outdoor play space, making it a neighbourhood preferred by young families.



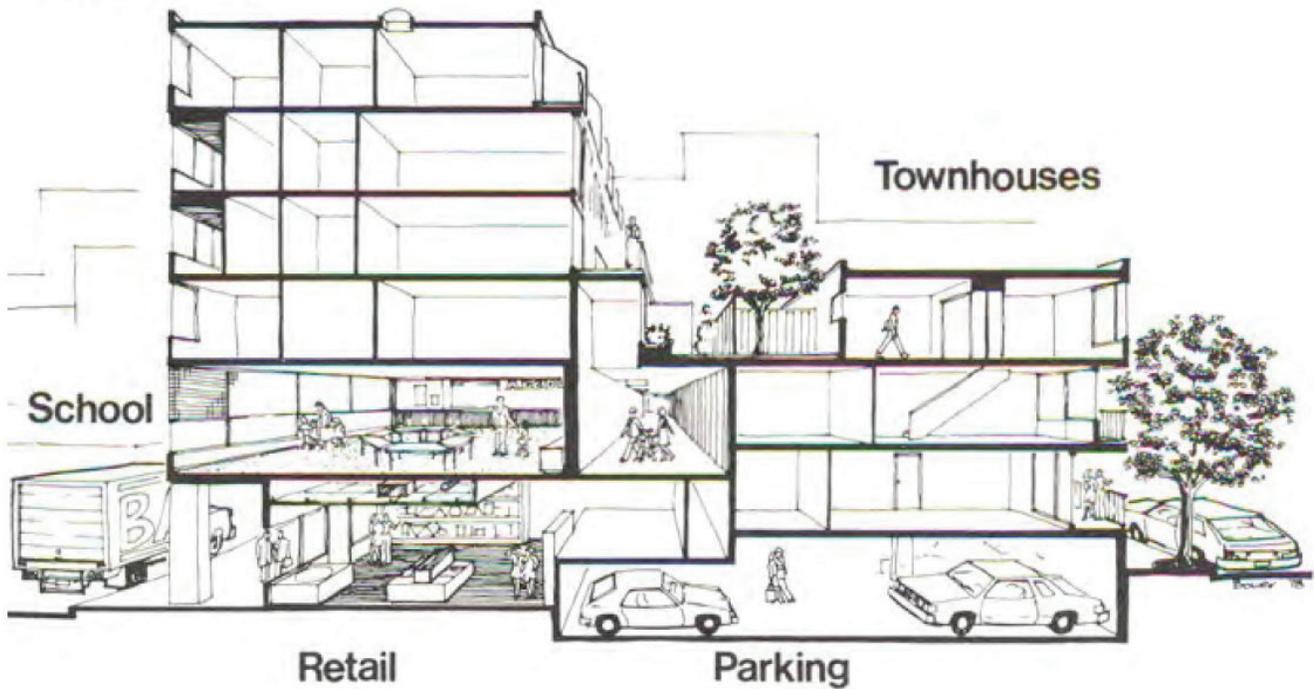
Children playing in the community area

Source: <https://www.toronto.ca/wp-content/uploads/2017/10/8fc7-St-Lawrence.pdf>

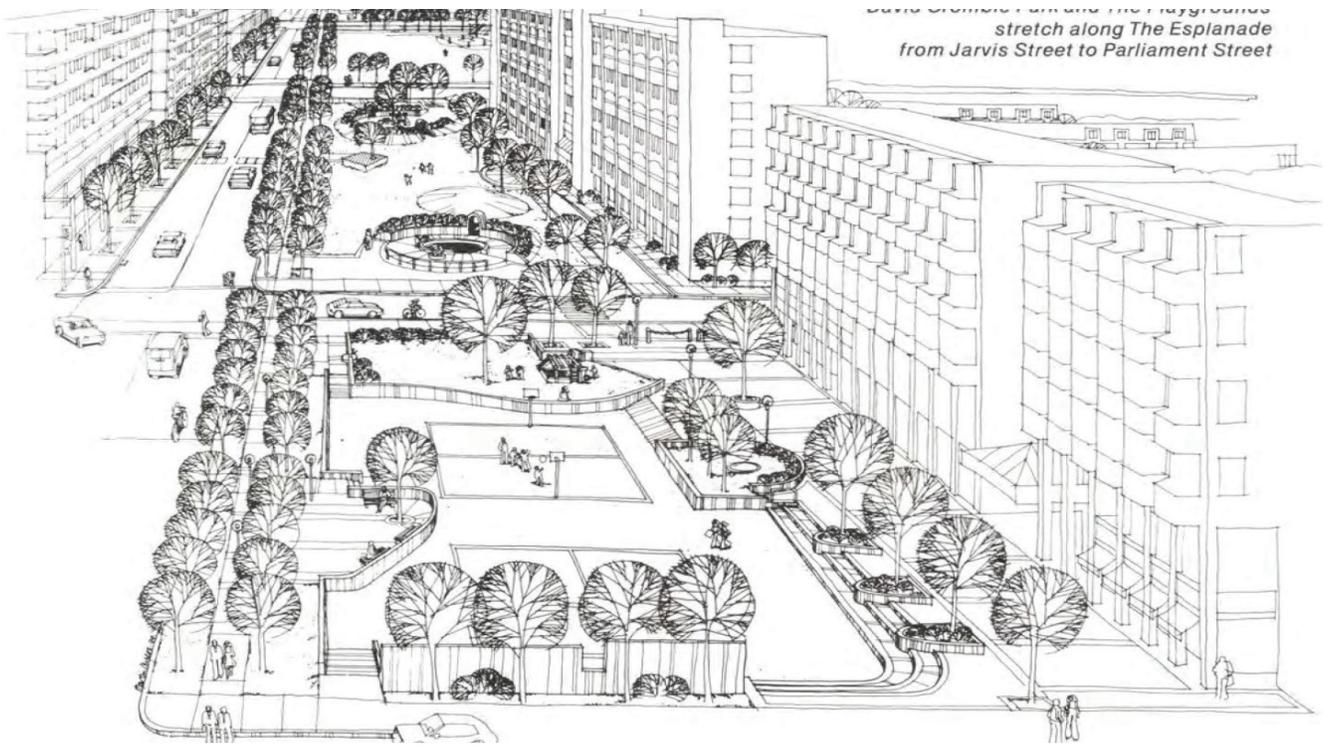


The Crombie park basketball court appeals youth in the neighbourhood, the park is framed by buildings which allows for informal supervision
 Source: <https://www.toronto.ca/wp-content/uploads/2017/10/8fc7-St-Lawrence.pdf>

Apartments



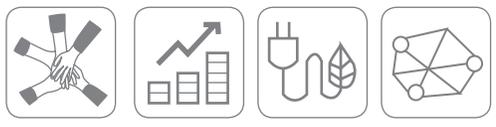
The building section demonstrates how the school, retail and residential uses are integrated and interlocked into one building
 Source: <https://www.toronto.ca/wp-content/uploads/2017/10/8fc7-St-Lawrence.pdf>



The playground belongs to the school, but through its design, it appears to be a part of the Crombie park, also with sunken playgrounds with a few steps makes the school playground as public.

Source: <https://www.toronto.ca/wp-content/uploads/2017/10/8fc7-St-Lawrence.pdf>

3. Southeast False Creek, Vancouver, Canada



Originally built to house athletes during the Vancouver 2010 Winter Olympics, the Olympic Village accommodations have been transformed into a mixed-use residential community. The key objective of the master plan was to build a neighbourhood where families could access

outdoor recreation, community centres, transit, and jobs. In addition to being a model for sustainable development, Southeast False Creek (SEFC) accommodates a healthy social mix of residents, including many families.

The Southeast False Creek Official Development Plan included objectives to develop a variety of residential uses that accommodate households of all income levels. The plan prioritized family housing and targeted a household



View of the Olympic village along the creek with greens along the plaza extending to the public space

Source: <https://lh3.googleusercontent.com/gSPhwYvjDpVeaFcTxq2F-AXSnAijuAWdDT5eAojmCbSL8QJsfqeJheRal3AqeQrpX7bx-w=s170>



The park along the creek waterfront provides continuous play spaces including soft and hardscapes along with public art
Source: *South False Creek: Public realm plan, City of Vancouver, July 31, 2006*



Hinge park was designed with both active and passive play areas for children
Source: *South False Creek: Public realm plan, City of Vancouver, July 31, 2006*

mix that includes 25-35% family households. The neighbourhood has several affordable and social housing buildings, as well as modest market income housing, supportive permanent housing and co-op housing.

The plan implemented Vancouver’s High- Density Housing for Families with Children Guidelines and the Family Rezoning Policy by providing a range of affordable housing choices, encouraging childcare facilities, and targeting a percentage of units that were suitable to families. Social and community-oriented policies for families with children

and youth encourage child-friendly design to “ensure children have a safe, supportive and stimulating place to learn, experience and grow.”

Families living in the area enjoy proximity to the linear seawall along the waterfront, which is punctuated by a series of parks and open spaces. Allotment gardens, rainwater wetlands, landscaping and a habitat island support nature play and provide opportunities for environmental education.

4. Hammarby Sjöstad, Stockholm, Sweden



Once an industrial waterfront, Hammarby Sjöstad has developed into a vibrant mixed-use community. It has become an international model for sustainable urban design, known as the Hammarby Model. Initial surveys and forecasts anticipated that the majority of residents would be over 50 years old; however, many young families with children moved in.

The families in Hammarby Sjöstad were attracted to its safe, relatively car-free mobility network. Children have to cross very few streets with cars on their way to school. A network of pedestrian and cycling paths link open spaces

and key destinations. A tramline was built along the central road in Hammarby Sjöstad to provide the primary transit spine in the district. It offers a convenient connection to the subway, bus and commuter rail lines. Ferries as well as bicycle and car-sharing options help to further reduce the use of private vehicles.¹⁵

Access to high-quality outdoor space is paramount to healthy childhood development. Hammarby Sjöstad offers many opportunities for imaginative play and contact with nature. Courtyards and balconies are prevailing architectural elements. Overhanging balconies provide outdoor space, views of nature, encourage social interaction and enable the supervision of children playing outside.

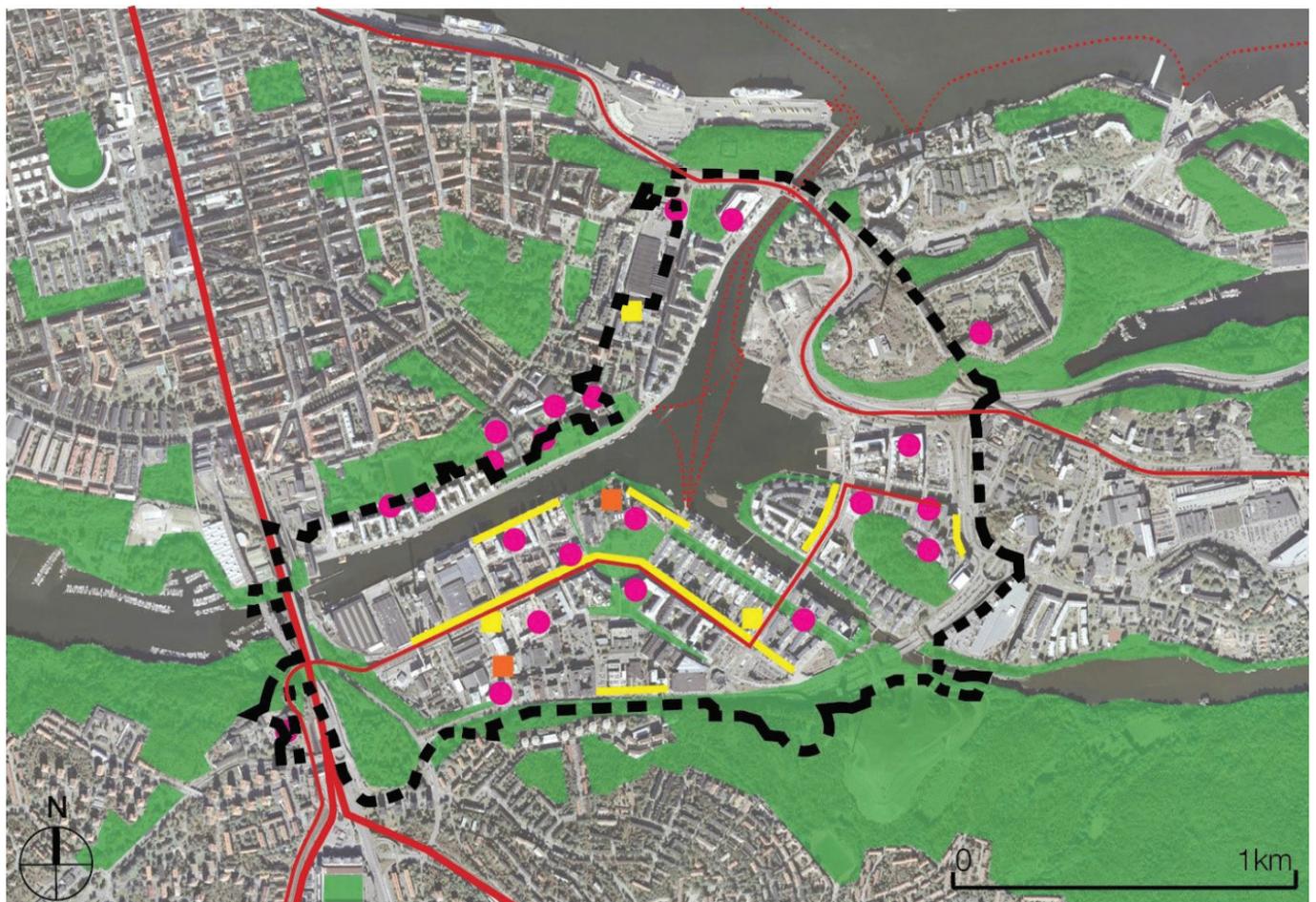


Diverse smaller design interventions make the neighbourhood very children and family friendly
Source: Hammarby Sjöstad: An urban development case study of Hammarby Sjöstad in Stockholm, Sweden, October 2015



Activities and public space design along the waterfront make the neighbourhood easily accessible and thriving at most times

Source: Hammarby Sjöstad: An urban development case study of Hammarby Sjöstad in Stockholm, Sweden, October 2015



Context Plan

- ■ ■ Project Boundary
- Shops/Services
- Community Centre/Culture/Library
- — — Public Transportation
- Child Care/Schools
- Parks/Open Space

The aerial map of the Hammarby neighbourhood, next to the waterfront

Source: https://lh3.googleusercontent.com/DR27XYVs2JaQMqGHFEwFjbp-zQqz5dlhTywYYxx2CrUqqQ6TUdVj3mk_20kXEJZ

Hammarby Sjöstad is lauded for its holistic approach to infrastructure, energy, waste and water, all of which are visible and attractive, and made of durable, attractive materials. The ecological design in the public realm allows children to develop an early understanding of sustainable

technologies. The community vision sets out qualitative goals that prioritise personal and social well-being. Its guiding principles strive to “elevate people’s mood” and create a liveable community, which co-exists seamlessly with nature.

5. The Solanda Project, Quito, Ecuador



In 1980, the Ecuadorian government launched its first effort at the provision of large-scale affordable housing with the Solanda Housing Project in the country's capital city of Quito. Consisting of 6,211 housing units, Solanda is the largest affordable housing project in the country's history.¹⁶ Planned social infrastructure for Solanda consisted of a day care centre, kindergarten, primary school, recreational facilities, commercial centre, and a community space for every 1,100 families. Larger community facilities included a health clinic, boys' high school, cultural centre, sports areas, administrative centre, and larger community owned enterprises. As of 2005, there were more than 18-day care centres, kindergartens and primary schools, eight high schools, one adult education centre, two churches, four community centres, four health centres, a police office, a fire station, and a post office.¹⁷ A major commercial street, 'La Jota', organically developed on one of the major arteries dividing the superblocks, with stores ranging from clothing supply to banking offices and

popular fast-food chains.

In a well-articulated urban design plan, superblocks with blocks within are organised around shared public spaces. The superblock is well connected and bounded by vehicular streets on its periphery and internally connected by pedestrian alleys. The vehicular movement is restricted mainly to the outer periphery and vehicular roads coming into the superblock terminate in a cul-de-sac. Shared parking lots are distributed within the superblock.¹⁸

The internal neighbourhood courtyard spaces are active play areas for children, with the state of these public and kids' spaces varying from area to area. These play areas are equipped with kids' playing equipment and have remained in their planned configuration. The restricted vehicular movement and access to these courtyards is through gated alleys, which have enhanced the sense of safety in these inner areas for kids and children. There is an emphasis on liminal spaces at neighbourhood level ensuring a greater degree of engagement of children in outdoor playing areas.



Aerial map of Solanda housing project, showing the urban fabric of the area
Source: Google earth, 2016

Superblock design

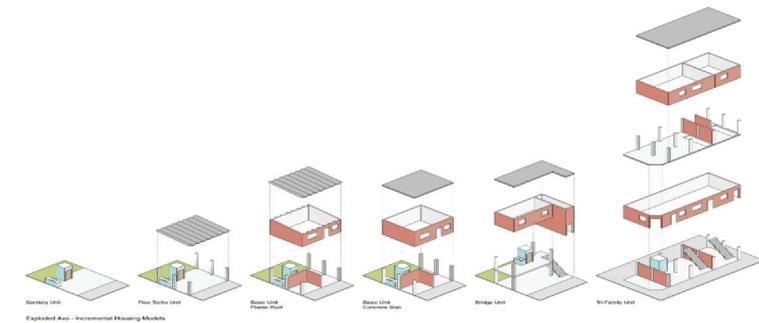


Typical Solanda 'superblock'

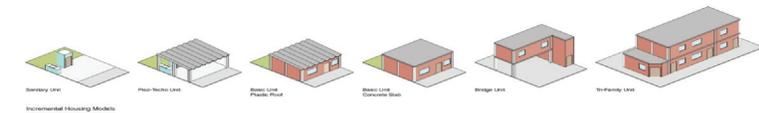
Detailed map of the Solanda housing project, showing the hierarchy of public spaces

Source: <http://web.mit.edu/incrementalhousing/articlesPhotographs/pdfs/solandafinal.pdf>

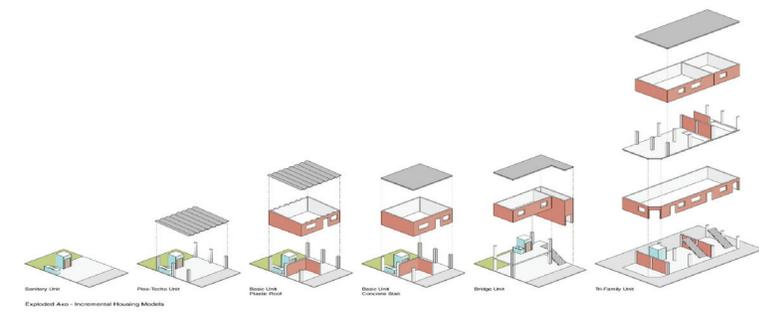
Graphic credit: Francis Goyes



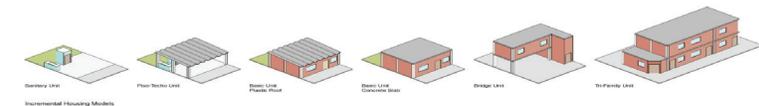
Graphic credit: Francis Goyes



Graphic credit: Francis Goyes



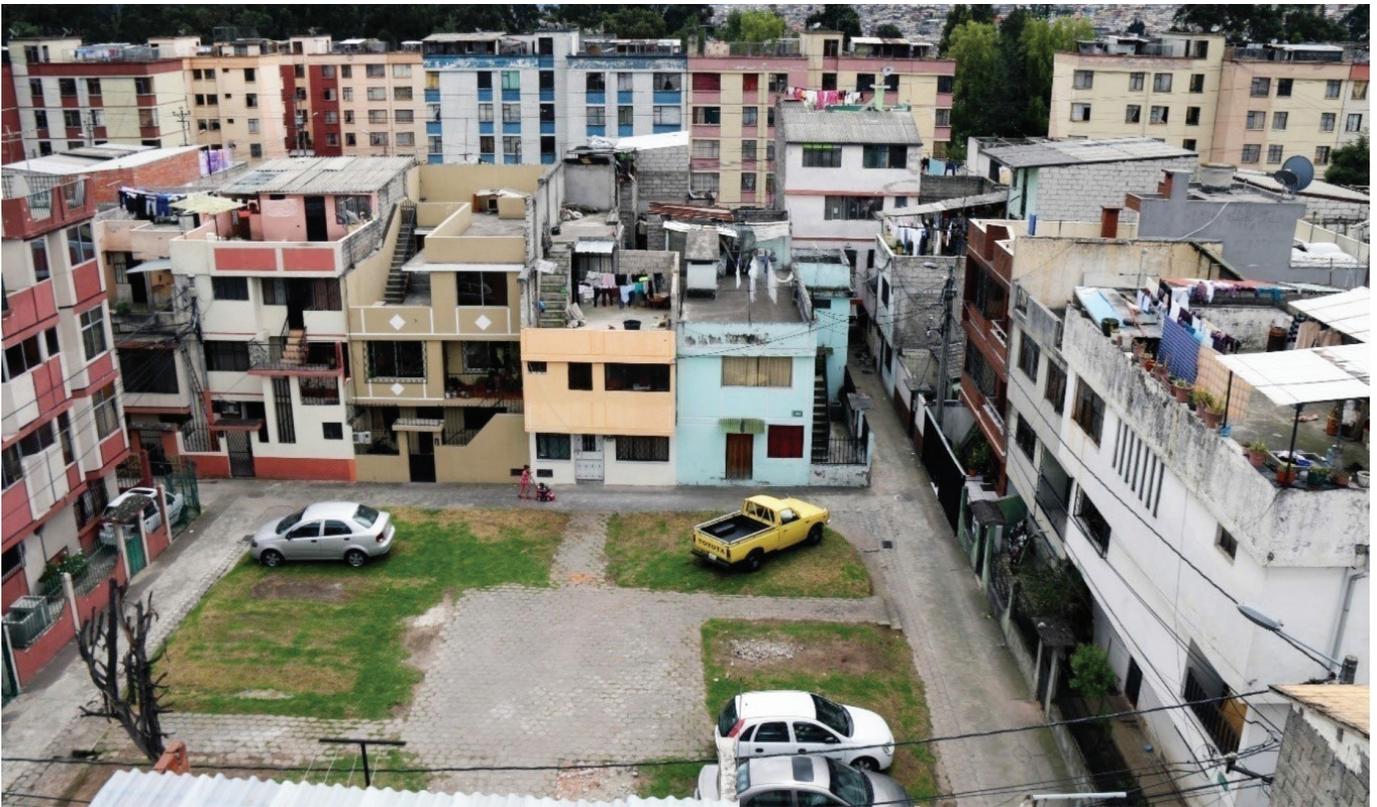
Graphic credit: Francis Goyes



Graphic showing the incremental housing typologies

Source: <http://web.mit.edu/incrementalhousing/articlesPhotographs/pdfs/solandafinal.pdf>

Graphic credit: Francis Goyes



Inner plazas in the housing, converted into parking area over time

Source: <http://web.mit.edu/incrementalhousing/articlesPhotographs/pdfs/solandafinal.pdf>

Picture credit: Gabriel Munoz Moreno



Playing areas within the block with segregated spaces for different playing areas for kids, and for youths

Source: <http://web.mit.edu/incrementalhousing/articlesPhotographs/pdfs/solandafinal.pdf>

Picture credit: Gabriel Munoz Moreno

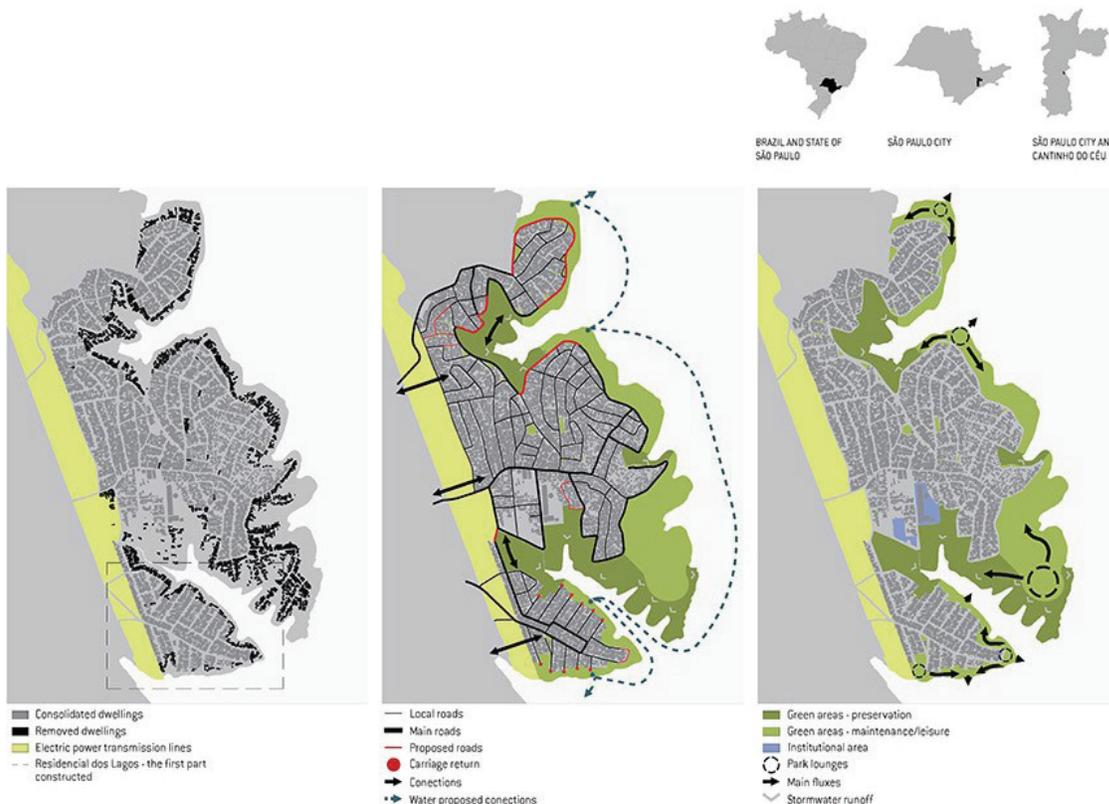
6. Cantinho do Céu Complex , Sao Paulo, Brazil



The development of the Cantinho do Céu Complex informal settlement was part of São Paulo’s Slum Upgrading Programme, which benefited 40,000 families and won the UN-Habitat Scroll of Honour prize in 2012. The project turned a 7km stretch along the banks of the Billings Reservoir into accessible public parks and green networks for residents of all ages to enjoy actively and socially. The intervention is comprised of a set of areas destined for preservation and diverse uses such as leisure, recreation, sports and contemplation. Inclusive public space that is free at point of entry is a powerful tool to decrease inequity between different communities.¹⁹ In São Paulo and Santiago, the public realm for families and children is a means of reinforcing people’s right to the city, reducing economic inequality by integrating deprived areas across the city.

The widest streets of the neighbourhood had their geometric characteristics adjusted; other new routes have been created to provide access to areas previously disconnected to the road system and the local roads with narrower dimensions had their use preserved – as places that combine auto and pedestrian circulation.

In the park, facilities were designed for play and entertainment as wooden decks, panoramic terraces, large rest areas, football field, skate track, open-air cinema, and living spaces. The emphasised materialisation of coexistence between children and the water takes place on a floating deck, where children and people come close to the water, previously unnoticed and neglected. The project has also counted on the creativity of the visual artist Aurício Adinolfi, who took advantage of the house gables facing the dam to create a colourful panel that animates the ambience and serves as an inhibitor for illegal expansion.



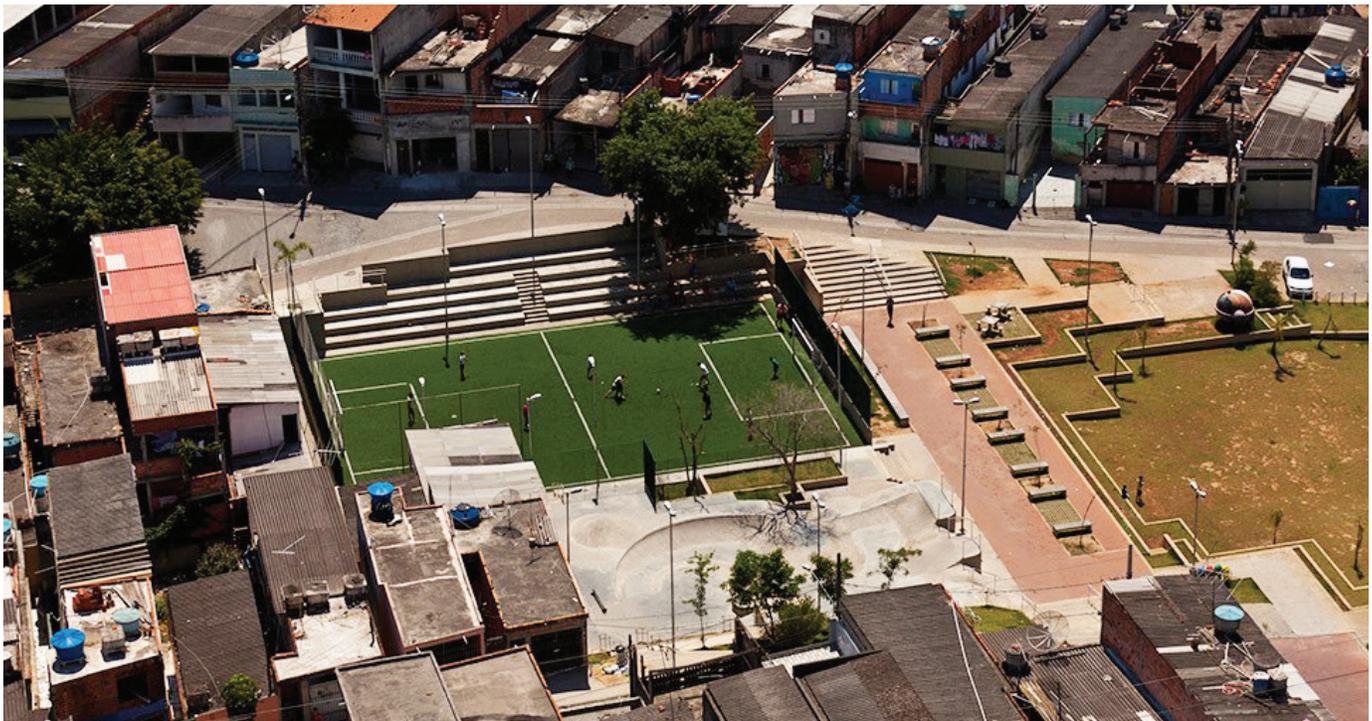
Plans show how the existing area was and the impact intervention made on connecting the area better

Source: <http://www.landezine.com/wp-content/uploads/2013/11/Cantinho-do-C%C3%A9u-Complex-Urbanization-by-Boldarini-Arquitetura-e-Urbanismo-29-300x300.jpg>



The detailed map showing the interventions along the banks

Source: <http://www.landazine.com/wp-content/uploads/2013/11/Cantinho-do-C%C3%A9u-Complex-Urbanization-by-Boldarini-Arquitetura-e-Urbanismo-00-300x300.jpg>



Football ground, Playground and outdoor movie areas enhance outdoor activities within the area.

Source: <http://www.landazine.com/index.php/2013/11/cantinho-do-ceu-complex-urbanization-by-boldarini-arquitetura-e-urbanismo/cantinho-do-ceu-complex-urbanization-by-boldarini-arquitetura-e-urbanismo-17-fk/>



Child friendly pedestrian pathway along the water edge with play parks and playgrounds

Source: <https://www.archdaily.com.br/br/01-157760/urbanizacao-do-complexo-cantinho-do-ceu-slash-boldarini-arquitetura-e-urbanismo/529f-14dee8e44e553d000142-urbanizacao-do-complexo-cantinho-do-ceu-slash-boldarini-arquitetura-e-urbanismo-foto>



Linear park along the waterfront

Source: <https://www.archdaily.com.br/br/01-157760/urbanizacao-do-complexo-cantinho-do-ceu-slash-boldarini-arquitetura-e-urbanismo/529f-14b7e8e44e553d00013c-urbanizacao-do-complexo-cantinho-do-ceu-slash-boldarini-arquitetura-e-urbanismo-foto>



Along the banks and built area, small play spaces are carved out

Source: <http://www.landezine.com/index.php/2013/11/cantinho-do-ceu-complex-urbanization-by-boldarini-arquitetura-e-urbanismo/>



Pier along the bank help children associate better with nature

Source: <http://www.landezine.com/index.php/2013/11/cantinho-do-ceu-complex-urbanization-by-boldarini-arquitetura-e-urbanismo/>

7. Dar Lamane housing, Casablanca, Morocco



This low-income residential community for 25,000 people consists of over 4,000 units organised around a large central square in which the mosque, markets and festival hall are located. Surrounding this central area on three sides are six housing clusters made up of parallel rows of attached four- and five-storey apartment blocks separated by pedestrian streets that give access to all buildings. Entrances face each other and open staircases act as communal balconies. The planning and design approach was based on the observation that for low-income, formerly rural or nomadic people, public space, pedestrian networks and the interrelation of housing groups are more

important than the design organisation of the individual units. Furthermore, safety and security were seen to be of great importance.

The housing clusters are an arrangement of rows of attached apartment buildings separated by pedestrian streets with gives access to all the buildings. The apartment buildings are arranged around a service courtyard. Nursery schools are provided in each cluster or housing street. Pedestrian roads enhance community interaction and bring the community together.²⁰ Housing units with ground floor as retails, shops etc. enhance the publicness of the street and allows children and kids to play in the pedestrian friendly street. Arched colonnades create a shaded pedestrian pathway along the shops on the ground floor; this climate responsive feature facilitates outdoor activities.



The masterplan of the housing showing the hierarchy of parks at the neighbourhood level and centered around a large central square
 Source: <https://www.akdn.org/architecture/project/dar-lamane-housing>



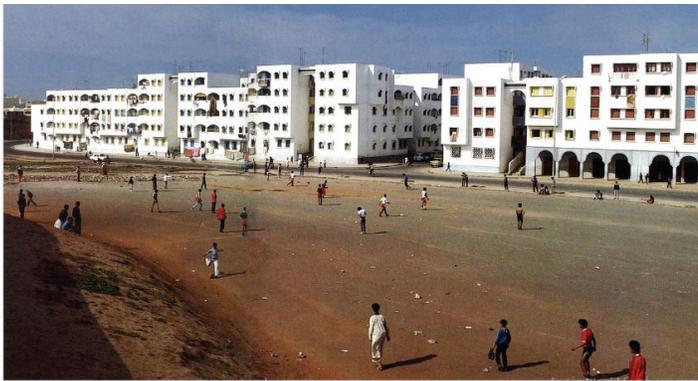
Inner corridors and courtyards, offer ample space for children to play in safe environment
Source: <https://www.akdn.org/architecture/project/dar-lamane-housing>



Increased safety and security enables children to play in the streets
Source: <https://www.akdn.org/architecture/project/dar-lamane-housing>



The spaces create cohesion of urbanism through hierarchy of public and private spaces
Source: <https://www.akdn.org/architecture/project/dar-lamane-housing>



Children play on a soccer field, which was a paved parking lot, located between the housing project and formal athletic facilities
 Source: <https://www.akdn.org/architecture/project/dar-lamane-housing>

8. Aranya Housing, Indore, India



The master plan of this housing block, prepared by the Vastu Shilpa Foundation (VSF) in 1983, is designed around a central spine comprising the business district. Six sectors, each with populations of 7,000–12,000, lie to the east and west of the spine and are diagonally bisected by linear parks. Ten houses, each with a courtyard at the back, form a cluster that opens onto a street. Internal streets and squares are paved. Septic tanks are provided for each group of 20 houses, and electricity and water are available throughout.²¹

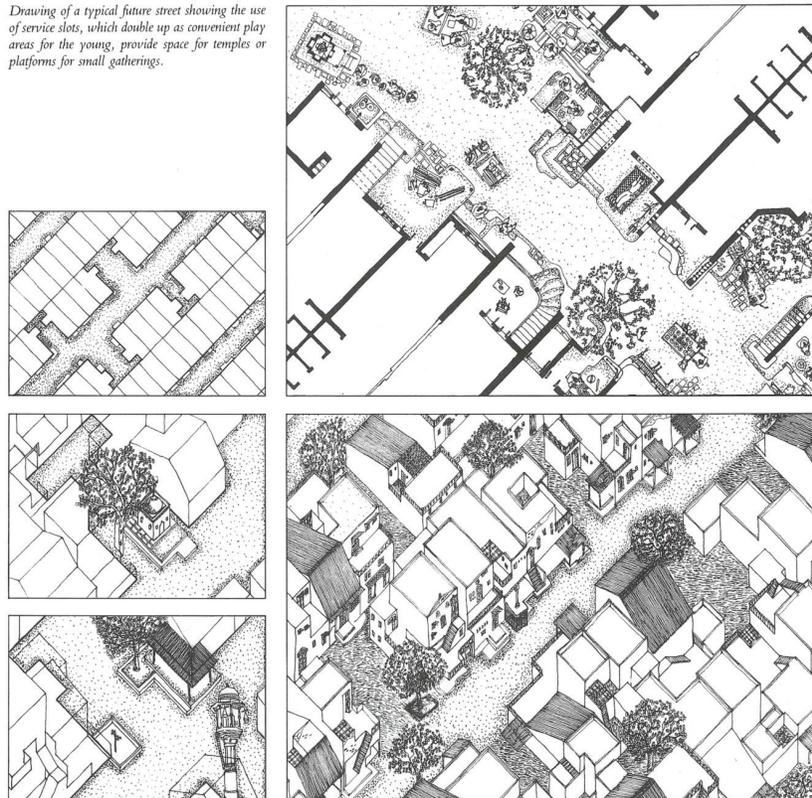
The site plan accommodates and integrates a variety of income groups. The poorest are located in the middle of each of the six sectors, while the better off obtain plots along the peripheries of each sector and the central spine. Segregation of vehicular and pedestrian traffic, offsets the visual monotony. The hierarchy of streets is based on the volume of traffic and activities, which allows children to use the street freely and increase the sense of security. Vehicular access in the form of rectilinear and formal roads in the hierarchy of 4.5m wide to 15m wide roads draw the vehicles outwardly. Pedestrian access in the form of informal interlinked open spaces draws people inwardly.²²



Schematic map showing the land-use of Aranya housing

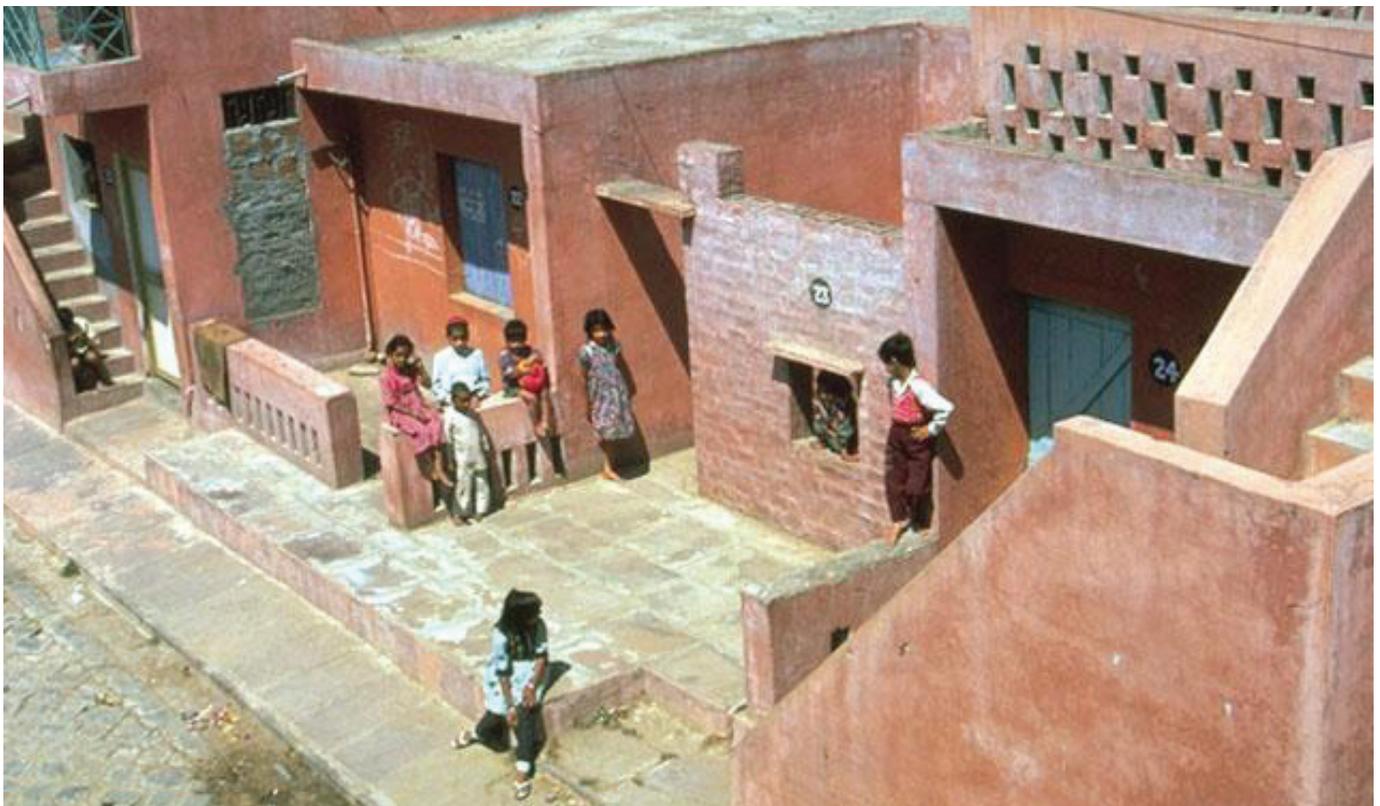
Source: <https://www.akdn.org/sites/akdn/files/media/documents/AKAA%20press%20kits/1995%20AKAA/Aranya%20Community%20Housing%20-%20India.pdf>

Drawing of a typical future street showing the use of service slots, which double up as convenient play areas for the young, provide space for temples or platforms for small gatherings.



The staggered streets create the character of the place and a sense of place making within the sectors

Source: <https://www.akdn.org/sites/akdn/files/media/documents/AKAA%20press%20kits/1995%20AKAA/Aranya%20Community%20Housing%20-%20India.pdf>



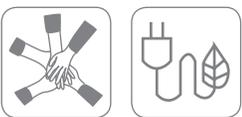
Small platforms, low walls and staircases along the street create a perfect setting for informal interactions and areas for play etc. for the kids

Source: <https://www.akdn.org/sites/akdn/files/media/documents/AKAA%20press%20kits/1995%20AKAA/Aranya%20Community%20Housing%20-%20India.pdf>



Small podiums become areas for informal activities for the ladies as well as for the kids to play
 Source: <https://www.akdn.org/sites/akdn/files/media/documents/AKAA%20press%20kits/1995%20AKAA/Aranya%20Community%20Housing%20-%20India.pdf>

9. Upohar-Condoville, Kolkata, India



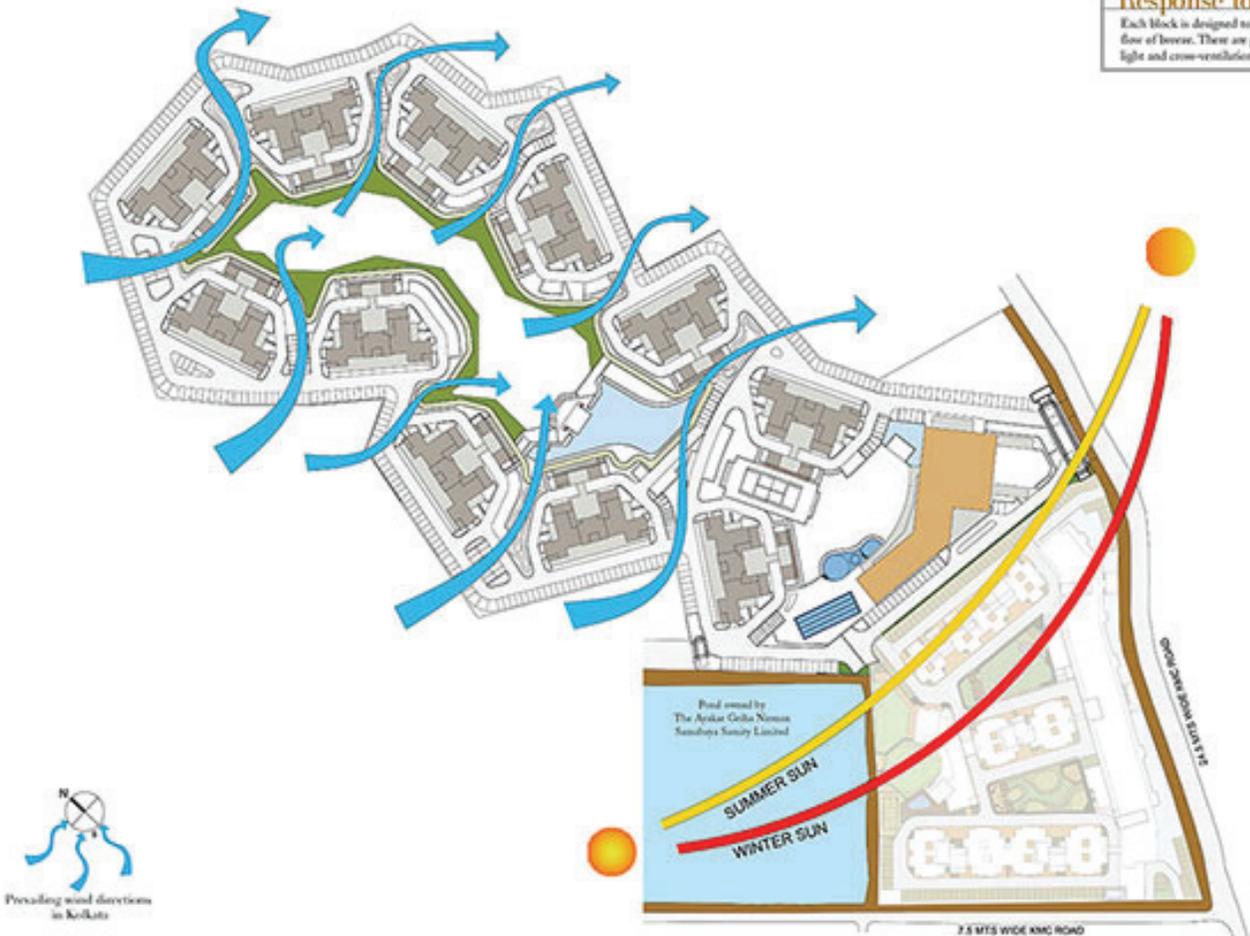
Upohar is a gated housing community in the new part of Kolkata, within an hours drive from the airport. Planned as a dream of tomorrow as a family friendly housing in Kolkata. The design of the housing has been made keeping in mind the location and context. The buildings are oriented to maximise light and air flow, creating a cheerful environment for healthy living.

The towers are oriented with climatic considerations in mind to optimise the quality of spaces. Common spaces encourage the possibility of outdoor activities for kids, ensure safety and facilitate a sense of complete

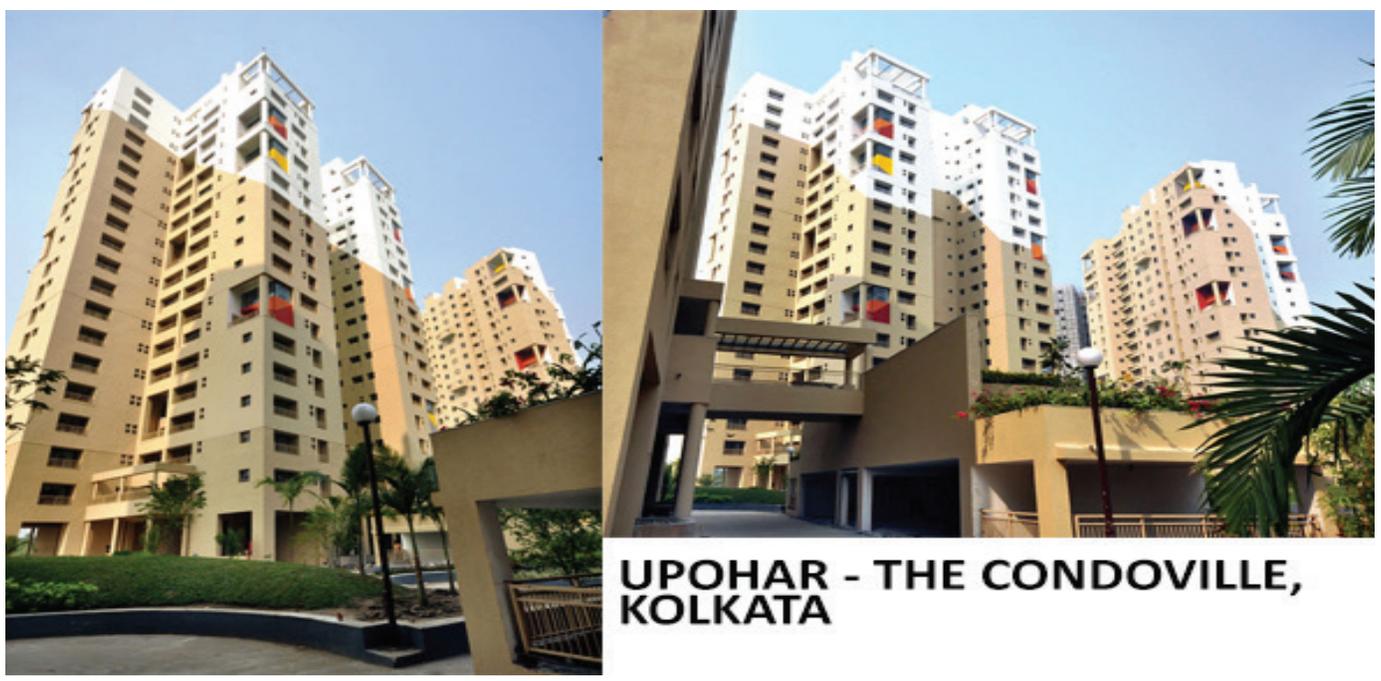
freedom. This creates a healthy environment for the entire community. The orientation of the buildings enables cross-ventilation through the complex, thus making it climatically suitable for outdoor activities during daytime. There are open green spaces with areas where children can play under the shade of trees and with a thick grass cover and mounds creating a sense of social cohesiveness within the housing fabric.²³

There are provisions for a joggers' track around the central green which has been separated by raising the land. The vehicular moment is restricted to the outer ring road and the inner green areas with playgrounds and playing equipment are connected with pedestrian and jogging tracks.

Response to climate
Each block is designed to allow unobstructed flow of breezes. There are provisions for ample light and cross-ventilation for healthy living.



Masterplan of the Upohar housing, showing the focus on air circulation and easy pedestrian movement
Source: <http://upohar.ambujaneotia.com/upohar-the-condoville.aspx?chk=1>



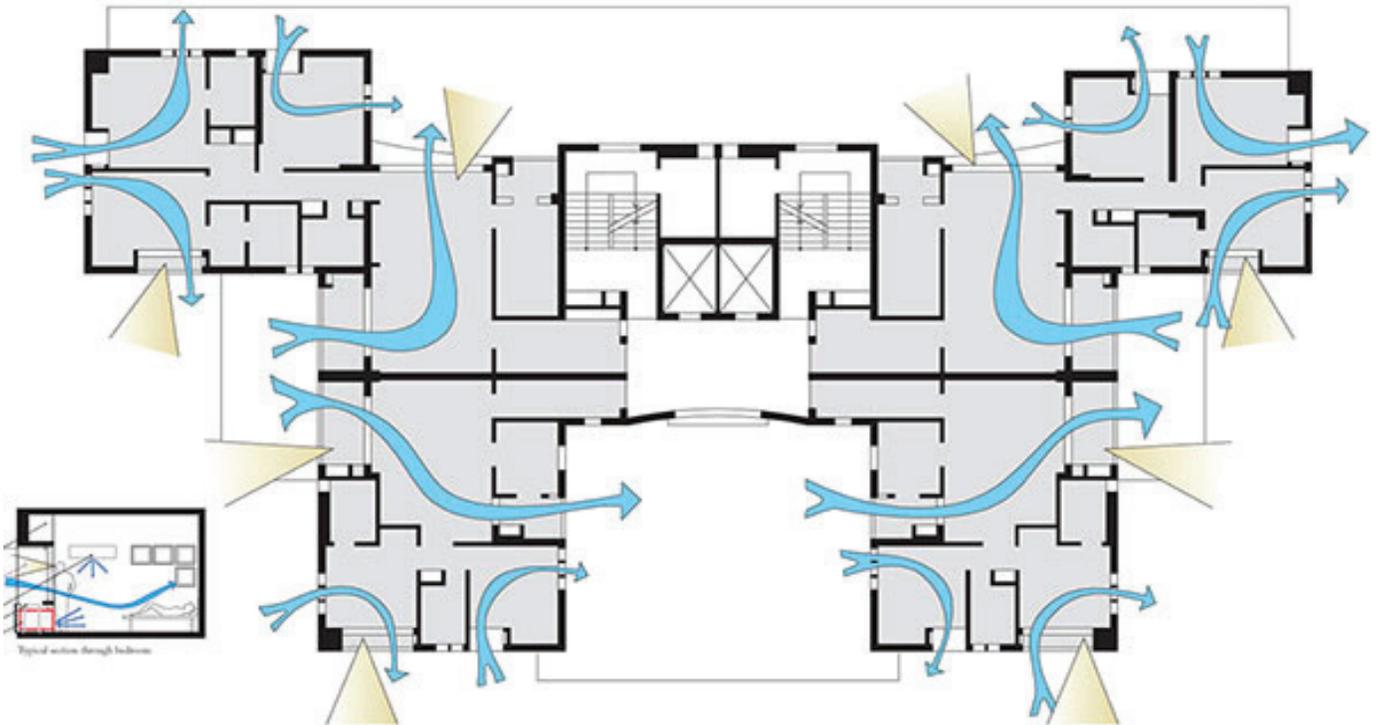
The design included ample open spaces within the housing typology for children to be able play freely
Source: <http://upohar.ambujaneotia.com/upohar-the-condoville.aspx?chk=1>



The high rise society offers a lot of open green spaces for children and families
Source: <http://upohar.ambujaneotia.com/upohar-the-condoville.aspx?chk=1>



Section through the central green space which caters to outdoor activities and play areas for children
Source: <http://upohar.ambujaneotia.com/upohar-the-condoville.aspx?chk=1>



Cross-ventilation in the buildings enhances the quality of indoor and outdoor spaces

Source: <http://upohar.ambujaneotia.com/upohar-the-condoville.aspx?chk=1>





PLAY

Play Areas/ Open-air Areas

“Children being seen and heard in shared public spaces is the hallmark of a vital community” (Free Play Network and PLAYLINK, 2006).

Young people need opportunities to socialise and find their place in the world. Play is an essential, communicative and engaging method for children in early years to help them understand their environment. They engage in formal and informal play at home, play areas and schools.¹ With the rapid development of cities and shifting land use of cities — open space used by children as playgrounds is swiftly reducing.

Studies globally underscore the value of play and the ability to play anywhere, not just in playgrounds as critical to the healthy development of a child. It helps them explore their ingenuity to define their own environment, make discoveries, and engage in self-designed activities by constructing and deconstructing stories. Furthermore, such activities help them map the city and layer it with micro landmarks and seemingly utilitarian objects, which help create physical cues that shape their understanding of the built environment, giving them a sense of place. Opportunistic play is essential for children to build these narratives and experience urban life in a playful and interactive manner.

For urban kids, this kind of self-structuring play is vital. They cannot run around in a typical natural environment the way that kids in rural areas can. However, they can learn to navigate the spaces they live in, thereby gaining mastery over their surroundings and themselves.² In most communities in urban areas today, kids cannot get to playgrounds if adults do not bring them there. In addition to safety concerns, there are certainly real constraints on time — parents work long hours, and kids have school, homework, and other activities.³

This lack of active play causes profound physical, intellectual, social and emotional harm, especially for younger children as it directly effects their cognitive and motor skills development. It is imperative to reduce the sedentary time and increase active play to ensure children have long, healthy and happier lives. This is especially so for children from low-income families as getting enough playtime can be difficult due to lack of access to safe play spaces in their neighbourhoods.⁴

Studies published by Kaboom! a major supporter and builder of playgrounds across the globe along with Next City, a play-advocacy organisation, make a strong case for creating “corner store” play spaces closer to home: just as corner stores are within easy reach of homes. The premise underlying this concept is that there should be the availability of safe and interesting play spaces — just beyond the front door and embedded in the urban landscape, contributing to a form of playable urbanism.⁵ Additionally, concepts such as the Smart Code are taking the idea of a pedestrian shed one step further by stipulating that a “play shed”⁶ should be within 800 feet of every residential lot, suggesting there should be a “civic space designed and equipped as a playground”, making it a part of the urban design code. Alternatively, concepts such as “the Popsicle test” — the ability of an 8-year old to safely go to the nearest store to buy a popsicle, and make it home before it melts — have become the go-to test for many new urbanists.⁷ These concepts highlight the concerns of getting children outdoors and building spaces that naturally accommodate them, instead of creating child-friendly spaces and hoping children come to them.

Apart from increasingly popular concepts of the “play shed” and “smart code”, which endorse outdoor play, indoor play zones are also on the rise in the growing urban India. The need for these features has arisen because of the lack of ample play spaces for children at the neighbourhood level and lack of focus on outdoor play areas in master plans and urban design interventions. Fully air-conditioned play spaces installed with all kinds of play equipment for a certain number of hours and price reflect on this growing gap at the design and policy level. Although they may be fun places for children with access to a lot of play equipment in a safe and well taken care of environment, these play zones are exclusive in nature as they only target a certain upwardly mobile section of society. Further, depriving children of playing in the open and exploring their environment on their own and making them play in highly organised and designed play spaces, leaves no or little room for exploration and self-discovery.

At a time when many decry the sedentary lifestyles of children and the amount of time spent in front of television and video games, and the increasing dependency on cars for transporting children to and from various activity areas; the concept of play zones may be useful for some but they

act as a deterrent to “corner-store” play spaces or toddler “play sheds”.

Children should be able to play freely in their neighbourhoods and urban policy and design plays a crucial role in ensuring that urban areas provide these basic facilities for children. Neighbourhood streets, outside homes, alleys, green spaces, parks and town centres need to be accessible places for children and young people to move around in safety and offer places where they can play freely, experience nature, explore their environment and be with their friends.⁸

Wherever they live, all children and young people must have easy access to spaces and facilities where they can play freely, and free of charge, coming and going as they please. Whilst the provision of designated play spaces is very important to children so is their opportunity to play in other public open spaces. Providing better access to and management of the public realm is as important as the provision of play areas. Children play wherever the opportunity arises and they need more opportunities to do so.

Play spaces also have particular social value for parents and caregivers of young children as places for both adults and children to meet informally, taking away some of the pressure of individual childcare responsibilities. Research suggests that children playing outdoors and establishing relationships with other children in their community can also have a positive effect on community cohesion. The more social networks children have in a neighbourhood, the greater confidence parents have in the safety of that area. Additionally, exploring playgrounds with families or playing hide-and-seek with friends helps kids learn to work together, collaborate, share, and be empathetic.⁹ Parents also establish their own networks through their children; play also supports community cohesion amongst adults. In Finland, over 70% of parents saw their play park as a place where they could get support and help with issues concerning their children.¹⁰

“To really improve the quality of play opportunities, children need to be provided with access to more

natural and creative play settings that help stimulate the senses and encourage greater use of the imagination.” (Packard, 2007)

Based on Musfiroh’s research (2003), there are two requirements that stimulate children’s creativity in their playtime activities; freedom and safety.

These two are key tools to assess both the physical and non-physical aspects. Freedom refers to the chances for children to choose activities and elements on the street freely for both active and passive play activities. Safety on the other hand comes from the child’s environment. It should be safe from aspects that can harm children while playing such as traffic, pollution, noise, garbage etc. The quality of streets and features for children to play can influence a child’s activities. The quality of environment includes size, layout of outdoors space, access to various facilities, quality and material of play equipment, green neighbourhood space, play space and a traffic calmed street.

The 10 principles for designing successful play spaces are:

- _ to be ‘bespoke’
- _ well located
- _ to make use of natural elements
- _ to provide a wide range of play experiences
- _ to be accessible to both disabled and non-disabled children
- _ to meet community needs
- _ to allow children of different ages to play together
- _ to build in opportunities to experience risks and challenges
- _ to be sustainable and appropriately maintained
- _ to allow for change and evolution.¹¹

To expand on some of these key aspects, the study has collated some global good practices focusing on children and play outdoors, which highlight innovative ways to handle challenges faced by children in play. The section has been divided into the two key parts of play areas and open areas, and streets where mostly children play at the neighbourhood level.

1. Bicentennial Park, Santiago, Chile



Chile has had an incredible economic growth in the last decade, although the urban standards have not increased proportionally. Santiago being the capital and largest city in Chile has no single place to go for long walks. Most of the public spaces tend to be associated with the geographical features of cities: rivers, seastrands, hills. The four-hectare Children's Park on the hillside, besides having a programme to celebrate the bicentennial of Chile, is considered as the initial phase of a promenade and a city park. It is a 10-kilometer horizontal, continuous path transformed into a pedestrian promenade.

The project consists of over 1,800 m² children's playground, including tree houses, swings with harnesses, a forest of water spheres and a toboggan cascade with more than 60 toboggans arranged on the hillside. These slides take full advantage of the slope in a playful way. The park has been designed to work with the land as it was, creating a

unique and whimsical play space in the process. Sitting at the bottom of the park, the playground marks the entrance towards green areas, and is connected to the nearby zoo.¹²

The park is geared for small children and toddlers, with a focus on the scale and design of all equipment. Using the difficulties of the terrain, the park is designed in such a way that it ensures the safety of young children and keeps them engaged. The hillside slope allows them to reach enough heights to make them fun, without being a threat to their safety. Furthermore, the perimeter fence of the park is a 300m-long play area and designed into a play facility where children can move from one point to another, crossing hurdles in the process.

Playgrounds are tucked in along fences and narrow pathways. There is a water feature, studded with concrete orbs and small forts, which extend out from the hillside, providing views of the areas below. The main plus point is that the park does not waste a single square foot of space.¹³



A linear enclosed play equipment designed along a road with heavy traffic makes space for endless play and adventure in an urban area park
Source: <https://www.area-arch.it/en/childrens-bicentennial-park/>



Semi enclosed space for toddlers with swings and use of soft material to reduce injuries and promote free play
Source: <https://www.archdaily.com/461315/children-s-bicentennial-park-elemental>



A linear enclosed play equipment designed along a road with heavy traffic makes space for endless play and adventure in an urban area park
Source: <https://www.area-arch.it/en/childrens-bicentennial-park/>



A linear enclosed play equipment designed along a road with heavy traffic makes space for endless play and adventure in an urban area park
Source: <https://www.area-arch.it/en/childrens-bicentennial-park/>



On the hill slope, series of slides have been designed to promote free play for all children
Source: <https://www.archdaily.com/461315/children-s-bicentennial-park-elemental>



A linear enclosed play equipment designed along a road with heavy traffic makes space for endless play and adventure in an urban area park
Source: <https://www.area-arch.it/en/childrens-bicentennial-park/>

2. Darling Quarter Playscape, Sydney, Australia



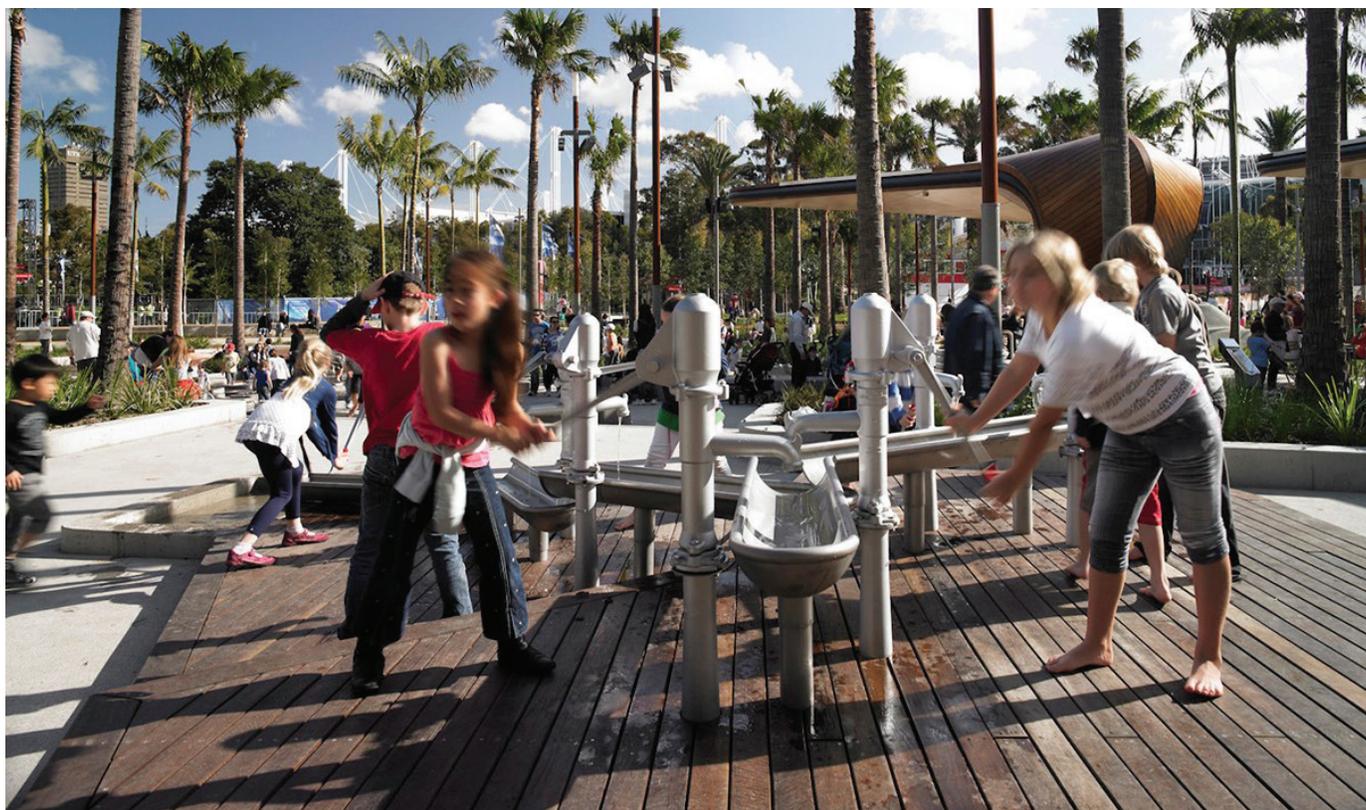
Darling Quarter builds a strong civic link to the city via the creation of a new pedestrian street –the ‘civic connector’, which connects Tumbalong Park to Bathurst Street and Town Hall. A second pedestrian link – the Pedestrian Boulevard reinforces the movement between the Entertainment Centre, Cockle Bay and beyond and prioritises the pedestrian connections through the site. It comprises a major 1.5 ha place-making project for Sydney with a retail terrace, public park, two 6-star commercial buildings and an innovative children’s playground as its centrepiece. At over 4,000 sq m, the playground is the largest in the Sydney CBD and with its interactive water play facilities has become a regional attraction for the city.

Darling Quarter Playscape is known as one of the best in the country as a playground bustling with energy, colourful, and an exciting place to be for children, combining artful form with function. Truly unique and functional playgrounds use

customised pieces to make their surrounding landscapes playable. The concept of the area has been to make a playground as the centrepiece of Sydney’s Darling Harbour. Cafes, restaurants, and commercial office spaces surround the area; the play space incorporates nature elements like streams, hills, stylised boulders, and sand.

Some of the elements in the play areas include a circus tightrope walker, balancing ropes, slides, flying foxes and a multi-dimensional swing. 83 sq mts of rope net rise over 10 meters into the air, creating an awesome challenge for kids of all ages. The Darling Quarter play area also has 26 water jets creating an exciting range of water patterns which children love playing with.

The project revitalises Darling Harbour by upgrading ground plane materials, lighting, public furniture and planting. A range of place-making initiatives have been implemented including an enlarged park, table tennis tables, moveable public seating and rugs, and a lighting master plan which enriches the night-time experience.



Elements like these help engage children in socialising with their peer group and further learn through play
Source: <http://www.designingfortomorrow.com/darlingquartergallery/>



Open play space with water bodies and levels to engage children into free play

Source: <https://www.archdaily.com/178095/darling-quarter-aspect-studios-with-fjmt-architects/50162ba928ba0d1598000f3d-darling-quarter-aspect-studios-with-fjmt-architects-photo>



Children engaging in learning and playing with mechanical water equipment designed specially to engage children

Source: <https://www.archdaily.com/178095/darling-quarter-aspect-studios-with-fjmt-architects/50162ba928ba0d1598000f3d-darling-quarter-aspect-studios-with-fjmt-architects-photo>



Slides with sand pits for younger children, ensuring their safety and promoting free play
Source: <http://www.healthyactivebydesign.com.au/case-studies/darling-harbour-children>



Promoting sports activities and making them interesting part of the public space design
Source: <http://www.designingfortomorrow.com/darlingquartergallery/>

3. Cycling Mosquito Bicycle Playground, Copenhagen, Denmark



Cycling is a big part of Copenhagen's transport, so to teach children the rules to help them understand all the workings of a cycle-priority society a playground has been designed. Since 1947, the Danish have introduced their children to cycling education. Danish children enjoy taster sessions in 3rd grade before taking an exam in the 6th. It is a metaphor for Denmark's early adoption of cycling infrastructure, which started in the 70s.

The Cycling Mosquito bicycle playground in Rudersdal Municipality is a colourful and educational outdoor space for children, where cycling games, storytelling and imagination contribute to the youngest ones' joy of cycling.

The nostrils of the sleeping man from one of the books about Egon. Photo: Claus Boesen

A well-known character creates the framework

Egon, the Cycling Mosquito, is a bright little mosquito who has been a character in children's stories and plays since 1967. Now, after 50 years the cycling mosquito has also been given his very own permanent bicycle playground in Rudersdal Municipality for children aged 2 to 9 years so that they can improve their cycling skills through play in a colourful fairy tale universe. For instance, the children can cycle through the nostrils of a sleeping man from one of the books, and from a bright orange circus wagon where Egon's friend Mini the Beetle is looking out, the teachers can lend bicycles to the children. The bicycle playground has come into being in close co-operation with Flemming Quist Møeller, the artist who created Egon the Cycling Mosquito.

The Cycling Mosquito's bicycle playground is more than just a physical frame for practising to cycle. Here fantastic stories and drawings are united with bicycle motor coordination and cycling games – a combination that ensures bicycle joy from an early age. The goal has been to



Children participating in a cycling based activity at the park

Source: <http://www.cycling-embassy.dk/wp-content/uploads/2017/02/Cykkelmyggen13.jpg>

Photo: Municipality of Rudersdal

create a bicycle playground that encourages play, bicycle practise and storytelling through the senses – and at the same time strengthens traffic safety amongst the youngest. Rudersdal Municipality believes that a playful approach to bicycle practise adds to a more fun, safer bicycle culture rich in experiences.

Supplementary teaching tools

A string of supplementary teaching tools are introduced together with the bicycle playground. One of the tools is 'The Biking Mosquito bicycle passport' which is an educational dialogue tool for the adult and the child where both can learn about the cycling mosquito universe, talk about bicycle skills and be inspired to visit the bicycle playground.

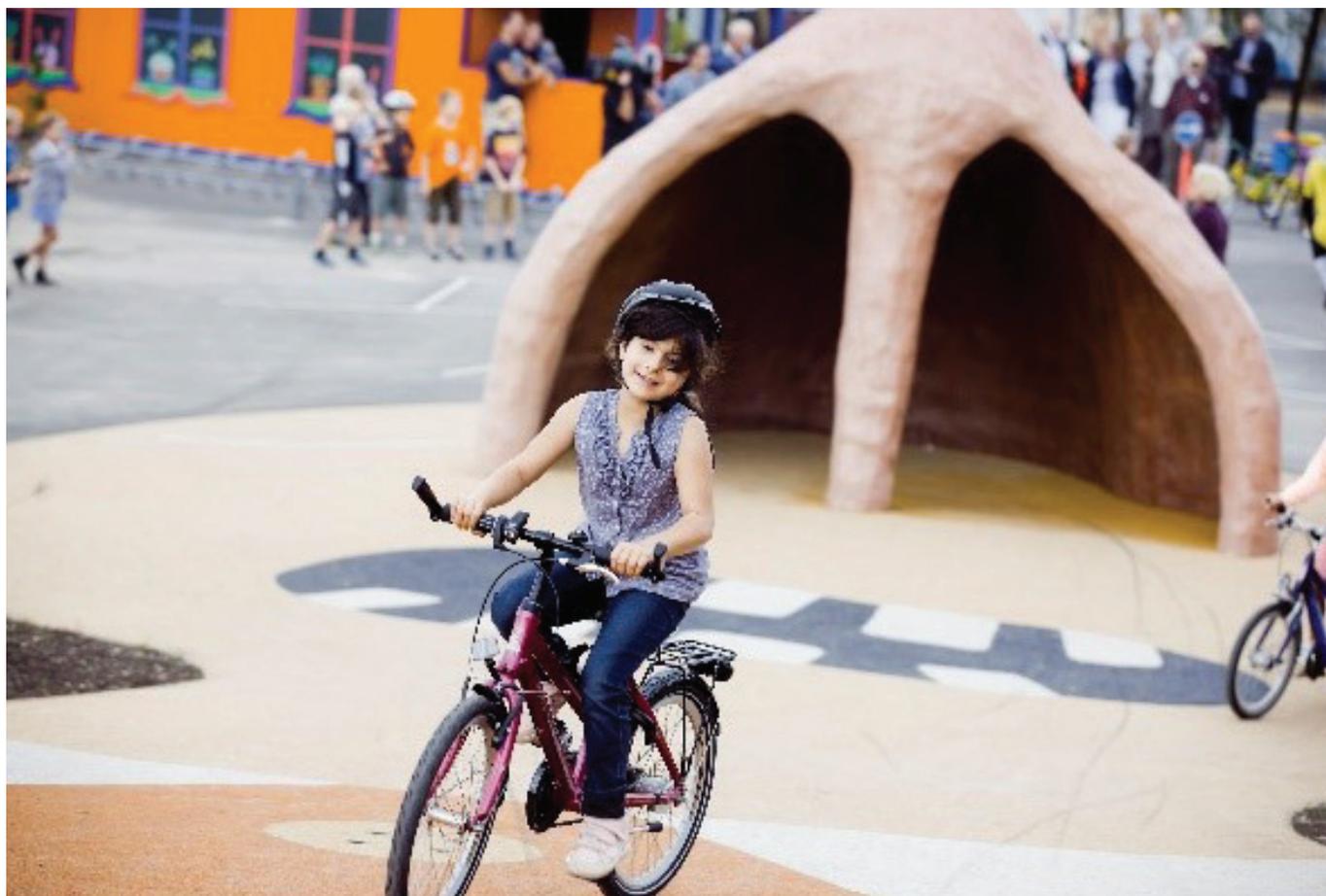
Also, an app has been developed that supports the teacher's work both before, during and after the visit at the bicycle playground by integrating elements from the playground

with organised cycling games and stories – both those of Flemming Quist Møoeller and the children's own stories. As part of the project, teachers from pre-school have completed a competence course in Danish Cycling Federation's cycling games so they can supplement the visit at the bicycle playground with organised, well-defined cycling games.

Transverse cooperation

Apart from a unique cooperation with the man behind Egon the Cycling Mosquito, Flemming Quist Møoeller, the project is solidly anchored widely across different municipal sectors and supports the many different political and professional goals in Rudersdal Municipality.

All over the bicycle playground, there are educational boards with stories, pictures of characters from the books and encouragement to play different cycling games.



Cycling being one of the basic modes of commuting, the cycling park is a great addition to the city, helping engage young children into cycling at a very young age

Photo Credit: Claus Boesen

4. Public Parks, Amsterdam, The Netherlands



Amsterdam worked towards making the city child friendly in the late 50s to 70s, after complaints were voiced about poor playing conditions for children. From then on the department made sure that each neighbourhood was provided with at least one public playground. In total over 700 playgrounds together created a web throughout Amsterdam, giving children their own recognisable domain in the city.

The parks were designed by Aldo van Eyck and had key elements such as sandpits, tumbling bars and igloo-shaped climbing frames. Van Eyck's playgrounds were a recognisable aspect of the city. These public playgrounds were located in parks, squares, and derelict sites, and

consisted of minimalistic aesthetic play equipment that was supposed to stimulate the creativity of children. Adopting an ecological approach to the human environment, it is argued that the abstract forms of van Eyck's play sculptures indeed helped stimulate the creativity of children. Whereas a slide or a swing almost dictates what a child is supposed to do, van Eyck's play equipment invites the child to actively explore the numerous affordances (action possibilities) it provides.

Van Eyck also designed the playground equipment himself, including the tumbling bars, chutes and hemispheric jungle gyms, and his own children tested them. To him, playing equipment was an integral part of the commission. The purpose was to stimulate the minds of children. The hemispherical jungle gym was not just something to climb on. It was a place to talk and a lookout post. Covered with a rug, it became a hut. These sandpits, tumbling bars and



Old picture of children playing in a park designed by Aldo van Eyck

Source: <http://sergps.pw/Aldo-van-Eyck-speelplaatsen-Amsterdam-19471978-Nieuwmarkt.html>



Old picture of children playing in a park designed by Aldo van Eyck

Source: <http://sergps.pw/Aldo-van-Eyck-speelplaatsen-Amsterdam-19471978-Nieuwmarkt.html>



New parks in Amsterdam inheriting the old values with newer design and methods to engage children

Source: <http://www.landezine.com/index.php/2016/05/play-garland-oosterpark-by-carve/speelslinger-oosterpark-00b-marleen-beek/>



Another example of a play equipment where children can challenge themselves through play
 Source: <http://wasawadatta.blogspot.com/2014/12/potrzeby-dzieci-na-poznanskim.html>

stepping-stones were placed throughout the Netherlands.

Different elements of the playgrounds represented a break with the past.

1. The playgrounds proposed a different concept of space. Van Eyck consciously designed the equipment in a very minimalist way to stimulate the imagination of the users (the children), the idea being that they could appropriate the space by its openness to interpretation.
2. The modular character of the playgrounds. The basic elements – sandpits, tumbling bars, stepping

stones, chutes and hemispheric jungle gyms – could endlessly be recombined in differing polycentric compositions depending on the requirements of the local environment.

3. The relationship with the urban environment, the “in-between” or “interstitial” nature of the playgrounds.

Most of these playgrounds are not there anymore; less than 14 are left. However, inspired by these playgrounds, a new range of play spaces and equipment has emerged in the city parks. The new play equipment is based on van Eyck’s design principles, but with a more contemporary outlook.

5. Maggie Daley Park, Chicago, USA



Maggie Daley Park was built on a prior parking garage location as a green roof in 1976. The plaza was a formal, rectilinear landscape featuring a wildflower garden, tennis courts and an ice skating rink. Frank Gehry's sinuous, metallic BP Bridge lured curious visitors to cross Columbus Drive, only to find a timeworn park out of step with the glitz and excitement of Millennium Park and the growing Lakeshore East neighbourhood.

Crucial repairs to the leaks in the underground parking garage created an opportunity for reinvention. Once the garage's waterproof membrane was replaced, a new landscape was created. Lightweight geof foam was used to shape the park without overburdening the garage.

Michael Van Valkenburgh Associates, known for innovative and inviting landscape work in New York City, won the international competition to design the outdoor space. The firm reimagined the park as a place for active recreation at all times of the year and renamed it in memory of Mayor Richard M. Daley's late wife. Curves, hills and valleys provided unique vistas and easy movement through the space while shielding visitors from the harsh sun, wind and traffic noise. A quarter mile-long skating ribbon (ice-skating in winter), a collection of themed play areas, and 40-foot climbing walls are some of the park's key attractions.

Capitalising on necessary renovations to the 4,000-car underground parking garage immediately adjacent to Millennium Park, the new Maggie Daley Park unified Daley Bicentennial Plaza, the Cancer Survivors Garden, and Peanut Park, creating a single continuous public park at a keystone position in downtown Chicago.



In addition to the play equipment at parks and play spaces, even the route to play and interactive design of furniture can engage children in play
Source: <https://www.onebennettpark.com/condo/vision>



Maggie Daley park, like an adventure park, gives the possibility to children to challenge themselves while engaging in different activities
Source: <http://www.mvvainc.com/m/projects/1/61>



Giant slides and variety of play equipment helps children of all ages to engage them at big city parks
Source: <http://www.fleetwoodurban.com.au/inspiration/global/maggie-daley-park>



Giant slides and variety of play equipment helps children of all ages to engage them at big city park

Source: <http://www.fleetwoodurban.com.au/inspiration/global/maggie-daley-park>

Maggie Daley Park is a curvilinear, topographically dramatic, and relentlessly heterogeneous park in comparison to other parks in the city. The park is oriented on two diagonal axes. Running along a northwest-to-southeast corridor of active recreation, it includes a three-acre play garden, a café, a rock-climbing park, and a seasonal ice-skating ribbon nestled in an evergreen grove. In the summer, the ice ribbon is a paved path, allowing for circulation and access to the climbing walls. The play garden provides both innovative play equipment and multi-functional areas for

imagination-driven play, incorporating discrete themed zones, accessible equipment, and comfortable gathering spaces for parents and caregivers.

Along the northeast-to-southwest direction, a continuous lawn valley and a network of paths provide opportunities for peaceful recreational engagement with broad open green space, while choreographing views of Chicago and Lake Michigan.

6. Jai Vakeel School Park & Victoria Memorial School for the Blind, Mumbai, India



Jai Vakeel School (JVS) and Victoria Memorial School for the Blind (VMS) are two of the oldest schools for children with special needs in Mumbai. Jai Vakeel school caters to intellectually limited children. It has around 700 differently abled children and adults using the campus every day. The school had a small space of 1,700 sq. ft where they wanted to build a play area. Before the play area, the space was almost a dead area. Wheelchair users were using the space

to enter the adjoining buildings.

On the other side of the Victoria Memorial School, there is a spacious 9,000 sq. ft space with different kinds of trees. VMS has schooling and boarding facilities for children of all disabilities between the ages of 4 to 18. The majority of the children at the school are visually impaired.

Before starting to design the playground, the designers visited the schools to try to understand the needs of children. Sitting through their classes and occupational therapy sessions helped the team understand the activities

that the children do and the objective behind them. They actively engaged with the teachers and therapists to get their inputs regarding what kind of play area would be challenging and engaging for the children. Visits were conducted to their occupational/play therapy rooms where sensory therapy was undertaken with different kinds of texture mats, walking and balancing activities to fine-tune their gross motor skills, vestibular and cognitive sense. The teachers were keen on taking some of these activities outdoors, so the play area could be a space where they could conduct some of the sessions.

Parents and children with special needs and other children frequently visit both these schools from mainstream schools. The play area could be a perfect intermingling space, a space where all children, including differently abled students, their siblings and other children can play together.

The key elements in the space are:

Interactive wall

At Jai Vakeel School, the interactive wall is roughly a 10 ft-long winding wall with a lot of colours, textures, shapes and niches. The scale of the wall is such that children can walk along it, climb on it, crawl through and jump over the wall. The intention was to create something that can serve as motivation for children with physical limitations to walk. It also helps children with intellectual disabilities to understand the scale of objects in relation to their body. The small circular cut-outs in the wall create an interesting texture and also serve as a foot- and hand-hold for children when climbing up the wall. In addition, inspired by one of the activities that the teachers conduct, where two kids can stand on either side of the wall and pass a long rope through the wall, helps children develop their fine motor skills. The large niches are ideal spaces for children to sit or crawl through to the other side.

At Victoria Memorial School, the designers built a different



Engaging play equipment designed with low cost materials
Source: Gudgudee



Engaging play equipment designed with low cost materials
Source: Gudgudee



The telephone pipes make children look for the connected pipe and interact with the environment and other children at the park
Source: Gudgudee



Play equipment with mirrors
Source: Gudgudee



Play equipment with colourful mirrors, designed as lollipops
Source: Gudgudee



Play equipment with bamboos which make sound every time they are moved; a good play equipment for children with disabilities especially blind
Source: Gudgudee



Play equipment with bells; a good play equipment for children with disabilities especially blindness
Source: Gudgudee



Play wall with holes for children to move around and peek onto the other side
Source: Gudgudee

version of the interactive wall, which had a circular form. Here the curved walls formed an interesting maze-like form. The inner tallest wall had a periscope, so children could go inside and see what's happening outside.

Textured Pathway

At Jai Vakeel School large triangular concrete tiles with pebbles embedded in them were made. The stones created an interesting texture and pattern. These tiles were placed in a criss-cross asymmetric manner making children want to jump from one to the other.

At Victoria Memorial School, since the space is much larger, a curved pathway flowing through the space was created. This pathway has a lot of different pavers with different textures and patterns. The teachers at VMS use this pathway to conduct mobility training for the young visually impaired children at the school.

Telephone Pipes

Inspired from an age-old game, comprising tin cans and thread where one child speaks from one end and another hears from the other end. Telephone pipes are an

installation of half-concealed interconnected metal pipes. It is interesting for children to figure out where the sound is coming from. It encourages social play as you need another person to play with encouraging children to make friends and learn to co-operate with each other.

Bells and Bamboo Chimes

To make children sensitive to different resonances, there are varied sized bells mounted on a frame. Bamboo chimes are installed on the boundary of the play area and act as a permeable fence. It is a great tool for children to understand the cause and effect relationship.

Coloured Lollipops

Children love looking through cellophane paper; through it they see everything around them in a different colour. Designed to look like a lollipop these have a circular frame with a translucent plastic sheet on a pivot mechanism. A lollipop is placed on the tactile pathway at the centre of the play area so children can rotate it and see everything around.

7. South Delhi Municipal Corporation Park, New Delhi, India



One of the obligatory functions of Municipal Corporation of Delhi is to develop parks/green areas for recreation of citizens of Delhi. Earlier the main focus of Horticulture Department was to provide/develop, clean, green and beautiful parks. While developing beautifully landscaped parks, the development agencies as well as residents/RWA's restricted the children from playing in the parks. The increased number of developed ornamental parks resulted in reduced children parks/play area. Recognizing the

importance of providing opportunity of physical exercise to growing children, the department of horticulture has made efforts to revive parks and dedicate exclusive children's park in the neighbourhood.¹⁴

At present, the department is maintaining more than 481 children parks. The department has developed 405 of children parks/corners by installing newly designed fabricate (FRP) equipment. Presently SDMC is focused on development of Children parks especially designed for better physical activities of Children.

Recently designed park exclusively made for children



Installation of permanent play equipment with music engaging children to play and explore different sounds
Source: CFSC Team



Flooring done with floor games on an anti-slip surface to reduce injury while play
Source: CFSC Team



Inspired by the continuous play equipment done in the bicentennial park, a smaller installation has been designed and installed at the SDMC park
Source: CFSC Team



Interactive furniture at the SDMC children's park
Source: CFSC Team



Installation of jungle themed play equipment
Source: CFSC Team



Installation of jungle themed play equipment
Source: CFSC Team

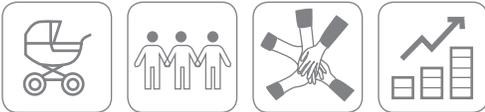


In addition to custom play equipment, the park includes play spaces and equipment for very small children
Source: CFSC Team

up to 12. The parks have “wall holla” — a sensory wall for visually-impaired children — board games area, rope bridges and other fittings made of glass fibre instead of iron. The park is also equipped with benches, gazebos and rubberised pathways to reduce chances of injury

to children.¹⁵ The response has been received very well both by the residents and by the local authorities, further suggesting incorporating such parks in other parts of the city.

8. Smart Park Redevelopment Project, Bhubaneswar, India

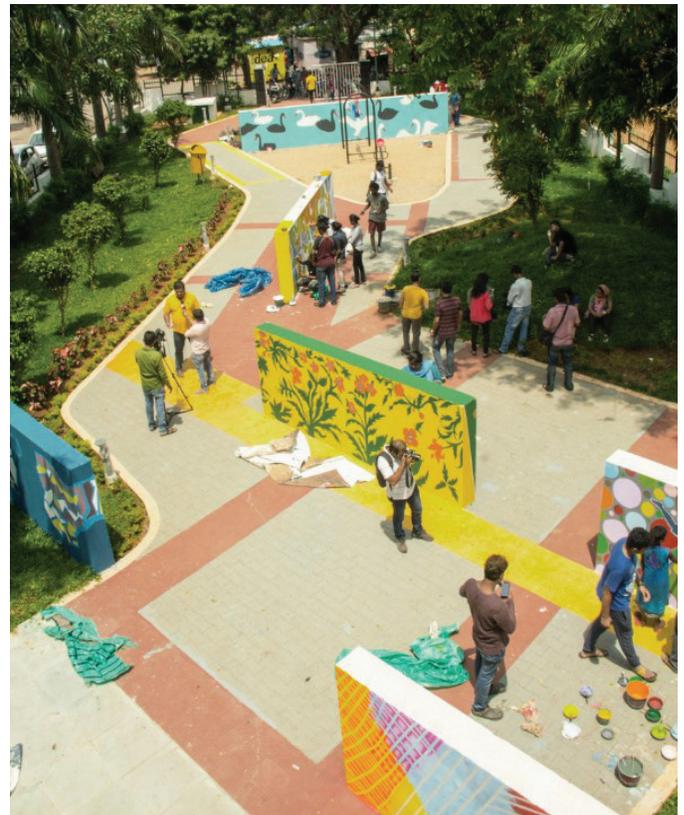


Bhubaneswar is aspiring to be the first Child Friendly Smart City (CFSC) in India, under the Smart Cities mission. To support this endeavour Bhubaneswar Urban Knowledge Centre (BUKC) has been set up at Bhubaneswar Development Authority (BDA), Bhubaneswar. The CFSC initiative at NIUA in collaboration with BDA and BvLF has supported BDA, Bhubaneswar Municipal Corporation (BMC), Bhubaneswar-Puri Road Transport Service Limited (BPTSL) and Bhubaneswar Smart City Limited (BSCL)

to supplement their capacities and function as an urban planning and design support unit, focusing on outcomes related to children in particular and families in general.

Under BUKC, multiple initiatives towards making Bhubaneswar child-friendly have been initiated. The key focus under the programme has been on children’s participation in the urban planning and design process through support from local NGOs.

Bhubaneswar redefined its six parks in the city as a part of Smart City Strategy. The redesigning of parks aimed to make better use of the city’s available land for children and



Images showing the before and after of the park with all the work undertaken by children themselves
 Source: Bhubaneswar Development Authority



Children led exhibition

Source: Bhubaneswar Development Authority



Short walls with paintings to engage children

Source: Bhubaneswar Development Authority



Children led wall painting exercises
Source: Bhubaneswar Development Authority



Children led wall painting exercises
Source: Bhubaneswar Development Authority

all residents, a key pillar of the Bhubaneswar Smart City Strategy, which was developed by the city.

Previously underutilised and lacking well-defined programming, the selected parks are located in Saheed Nagar, one of the oldest neighbourhoods in the planned part of the city. With an aspiration to create a child-friendly infrastructure, active and informal space, this project is part of the Area-Based Development portion of the Bhubaneswar Smart City Strategy. The redevelopment aims to provide recreational opportunities to all user groups irrespective of age, physical ability, gender and socio-economic status.

Designed by Bhubaneswar Urban Knowledge Centre (BUKC), a citizen-led, participatory planning approach was adopted for the parks design. Local children, parents and senior citizens were invited to a design brief ahead of time. A design charrette was organised with local children to get their design inputs and a wish list of features to make the parks more active, engaging and child-friendly. Based on the suggestions and requirements of citizens, multiple concept design options were prepared and executed by BUKC.

Some of the parks' key design elements include:

- a. efficient use of land as resource
- b. child-friendly features
- c. water, colours, textures used as main design features
- d. accessibility
- e. technology for safety and security
- f. multi-activity zones for all age groups

The result? The city has seen a 500% footfall increase to these areas and residents are asking for similar spaces to

be developed in other neighbourhoods.

Smart park with community participation

In a first-of-its-kind public art event, the temple city of Bhubaneswar organised innovative art work to foster public art and community participation in the parks. This day-long art event took place at the redeveloped BDA Parks (Smart Park) in Saheed Nagar. Nearly 100 children, along with residents and city officials, joined local artists and Smart City officials to create murals and art installations in these parks.

With features like graffiti walls, amphitheatre and dedicated spaces for community gardening, this park is being developed on child-friendly design principles and the event has added further vibrancy to the parks, while constructively engaging the citizens, especially the young ones.

Bhubaneswar Urban Knowledge Centre (BUKC) of the BDA, which had designed the Smart Parks, was the knowledge partner for this activity, and city-based volunteer organisation Bakul Foundation was the art partner for this programme organised by Bhubaneswar Smart City Limited (BSCL) as part of the Street Art and Mural Project (STAMP).

In total, the Smart Park in Saheed Nagar has 12 designated theme-based walls for murals and graffiti, which are also envisioned to double up as open-air art exhibition walls in the future. While the broader theme was 'Art for Relaxation' or 'Art as Therapy' for all the murals, the artists were divided into 12 different groups allowing them to pick a theme for creating the murals on both sides of any one of these walls. The kids and community members joined these groups contributing in their own ways for the cause.



Streets as playgrounds

Alternative play spaces

Children need physical and visual cues to develop and become a part of social life through their everyday experiences throughout childhood. They can get these experiences while playing and especially during self-designed play. Streets are usually active open spaces for children that usually offer independent play. Although rapid urbanisation and changing aspirations have resulted in streets being managed primarily for vehicles instead of pedestrians and bicycles, children still do find place and space to learn and play in small alleys, liminal spaces between staircases and foyers. Streets offer the potential to be such places and not just a medium to move from one place to another. All of these elements stimulate children's creativity, imagination, knowledge and even their behaviour.¹⁶

Street play is fun and good for kids, as it allows them to figure out how to use their environment in creative ways on their own, or with the help of adults who can socialise on the street. Street play allows for both semi-supervised free play and for vigorous physical activity. A recent study has found that urban children already get the majority of their after-school physical activity in outdoor 'non-greenspace', including streets, concluding that, "non-green urban environments are therefore very important for children's activity."¹⁷

Traditionally streets were spaces to play, with a hierarchy of scale, some of which can still be found in informal settlements, old city neighbourhoods, and slums. Over time, however, street widths have gone much beyond the human scale, let alone the perception of space of a child. The once secure enclosure of streets and alleys where children could play and communities could be nurtured is being taken over by flyovers and car ways. There has been a growing realisation of this gap and transformation in urban lives and communities across the globe. The increasing lack of a public realm that included streets and alleys in and around neighbourhoods is forcing communities to reclaim such spaces and make them car free or play zones for varying durations of day or night. The larger goal is to reclaim the traditional street typologies and empower children with freedom to indulge in free play.

Streets are places where a lot of informal play takes place.

Liminal spaces between houses, such as staircases add up to the street and form ample spaces for children to create ingenious games. Children play games such as gali cricket, hopscotch (stapu in Hindi), pithu and running around, playing ball and hide and seek. They get time and space to be adventure-explorers in their safe environment; younger children navigate the cracks and changing textures of the sidewalk, and peer through the familiar front gates. Every small detail is relevant to them. Colour becomes significant of the painted sidewalk markings of utility workers, and children enjoy the pleasures of dirt, sticks, sidewalk puddles, and the green bags protecting newly planted trees.

Multiple cities have initiatives with quick and handy guidelines to make their community streets ready for play and car-free. These initiatives are primarily undertaken at community level and the guidelines help community and parents to come together to take collective action. Not only do these guidelines help reduce traffic volume and speed in the street, they also help reclaim the streets as a place for play, social activity, and community building.¹⁸ In addition, some of these initiatives have successfully been translated into scalable solutions for the city and have been included into the city level development plans and visions.

Neighbourhood design and local area planning must focus on walkability and ensuring safety of children by utilising measures such as highlighting 'home zones' or 'safe zones' or 'car-free zones' so that children feel safe to play and move around without needing any parental surveillance at neighbourhood level. Tools such as 'form-based codes' should be formulated to provide comprehensive design guidelines/standards to address these issues so as to encourage social interaction in neighbourhoods.

Some of the key aspects at street scale to ensure that children can play on the street are:

size and layout of the streets

- a. accessibility
- b. quality of equipment and materials
- c. green space
- d. play space
- e. traffic calming

Some key aspects and concerns that are vital to making streets as playgrounds for children, which have been highlighted through the examples discussed in the chapter are:

Awareness: It can be difficult to convince someone that the street belongs to people, not cars. Harder still is convincing a parent that the street can be a safe place for kids to play. The task of changing the way we think about the street, who it is for, and how it might otherwise be used, is one that requires a broader shift in the public consciousness.

Participation: Participation of the community is critical in achieving positive results. Through active coordination and participation of community members, decision-making is more comprehensive and faster. In addition, it helps people feel more responsible for the actions and a

sense of ownership is promoted.

Collaboration: This strengthens the sense of community, and is a stepping-stone for other community groups, including a park user group.

Implementation: Community action and with support from the local authorities are key to ensuring implementation of actions on the ground.

Monitoring: Apart for collaborating and implementing actions on ground to ensure safer streets for children, it is also important that there is regular monitoring and communities in collaboration with local authorities highlight and address issues to take timely actions and help maintain the areas well.

1. Playing Out, Bristol, UK



This 2009 initiative is based in central Bristol. In response to primarily busy streets, and lack of ample space for children to play, the community developed a model where neighbours close their street to traffic for a couple of hours, creating a safe space for children to play outside. The aim of this model was to provide an immediate way for children to play safely outside their own front door and at the same time, to raise awareness of safety and other issues and

build in some of the conditions needed to make street play normal and acceptable: greater trust between neighbours, parental confidence and safer streets.¹⁹

The initiative developed out of the need for ample space for children to play, and has received a lot of encouragement and active engagement from children and parents. It started with a single street and two enthusiastic neighbours worrying about the health of their children and lack of play spaces, and has now grown to encompass 150 streets across Bristol. Over the past years, the team has developed a guidance document for other streets to follow and a film



Children enjoying the play street with drawings done in chalk
Source: <https://playingout.net>





Children enjoying the play street, making drawings with chalk
Source: <https://playingout.net/>



Very young Children enjoying the play street, enjoying free play right outside their homes
Source: <https://playingout.net/>



Children enjoying the play street
Source: <https://playingout.net/>



Discussions with community encouraging them to participate and contribute to the play streets
Source: <https://playingout.net/>

for encouraging parents to get involved. A set toolkit and support from the council has been a key factor in ensuring the fast and easy set-up of play streets in Bristol. Following the success of this first ‘Playing Out’ event, Active Bristol provided funding to support six other local streets to do the same.

Playing Out events are short (2–3 hrs) after-school road closures, with 1 or 2 volunteer stewards at each road

closure point. The idea is simply to provide a safe space at a time when children need and want to play.

The Play study found that “an ethos of collectively allowing neighbouring children to play out together improves confidence.”²⁰ The Playing Out model is not intended to be a permanent solution, but to act as a bridge between the current situation and the long-term goal of street play being a normal, safe and positive part of urban life.

2. Play Streets, London, UK



The initiative started with allocating temporary/permanent play spaces at neighbourhood scales for children, but further expanded and has been included into the London city plan. Supplementary documentation on neighbourhood planning, further supported by guidelines and benchmarks have been developed. This formalised and structured approach has also provided the initiative with regular funding under the city vision and plan. Further, the initiative has also made people more aware of the concerns and need for children to play.²¹

The aim of the initiative was to give London’s children the best free play opportunities, near to where they live. In order to achieve this, the initiative:

- Works with play providers in the voluntary, community,

statutory and private sectors to support their efforts to increase play opportunities for children in London’s 33 boroughs.

- Supports organisations such as play associations and works with local playgrounds, play centres, play workers and community groups to increase and improve play opportunities in London’s neighbourhoods.
- Directly provides more play opportunities through funded projects, working with local play organisations or community bodies wherever possible. For example, Access to Nature and Taking Nature to the Streets.
- Engages communities and children themselves to support their own responses to the need for play opportunities.
- Works to raise the profile of play with politicians, decision makers, parents, schools and other bodies who work with or influence children and young people – through the media, their own publications and by contributing to policy-making structures.



Neighbourhood marked with signs of home zone and speed limits to discourage people from speeding
Source: CFSC team



Neighbourhood park with soft material for kids to play and water spouts for kids
 Source: CFSC team

3. Woonerf, The Netherlands



Shared streets, home zones and woonerfs are designed to slow vehicle traffic and improve safety. In dense urban areas where public space is limited, shared streets can perform multiple functions. While they support pedestrians, cyclists, children, and vehicles in close proximity, they also serve as social or play spaces for families and children. Shared streets have lower speed limits, typically around “walking speed.” This reduces road accidents and increases the sense of safety for pedestrians and children at play.

In general, where cities have promoted shared streets, there has been a documented decrease in traffic-related accidents and injuries. Shared streets increase visibility and levels of social activity on the street, providing more opportunities for formal and informal supervision of children. This can increase children’s independent mobility, which has many physical health benefits. Shared streets rely on decorative paving, offering an attractive alternative to asphalt. This treatment is lighter in colour and radiates less heat, which

is safer for children at play and reduces impacts on the environment. Shared streets are appropriate in numerous settings, including residential, commercial and mixed-use areas where flexibility is a priority.

The reconfiguration of Market Street, Toronto has revitalised the western side of the historic Market hall. The new-shared street creates an attractive, flexible space that generously accommodates market users while still allowing for servicing. The street sets a precedent by making better use of this public space, which previously prioritized vehicles.²²

Bell Street Park, Seattle, in downtown Seattle, a four-block woonerf was part of a strategy to reduce crime and provide much needed green, open space. Traffic was reduced to one lane and curbs were eliminated, prioritising pedestrians and cyclists, while continuing to accommodate motorists. Bell Street Park functions as an “outdoor living room” for area residents and includes seating, tables, art installations and landscape planting to create an inviting place for families.



Shared streets with multiple activities

Source: <https://www.toronto.ca/wp-content/uploads/2017/10/971f-Community-Gardens-and-Shared-Streets.pdf>



Shared streets with multiple activities

Source: <https://www.toronto.ca/wp-content/uploads/2017/10/971f-Community-Gardens-and-Shared-Streets.pdf>



Shared streets with multiple activities

Source: <https://www.toronto.ca/wp-content/uploads/2017/10/971f-Community-Gardens-and-Shared-Streets.pdf>

4. School Zone Improvement Project, Seoul, South Korea



With 32% fewer traffic accidents involving children, Seoul, South Korea is one example of how changing street design can improve road safety. Traffic-related fatalities among children fell by 95 % in the country, from 1,766 in 1988 to 83 in 2012. This success was the direct result of a series of projects that targeted regulations, education and the built environment. One such project was the School Zone Improvement Project, implemented throughout several Korean cities. The project aimed to create safe routes from children’s homes to kindergartens, elementary schools and childcare facilities.

Officials started by reducing speed limits through infrastructure design tools, such as speed bumps. They established dedicated right-of-ways for pedestrians, and created clear distinctions between sidewalks and roads. New fences further protected children from road hazards.

City officials also installed traffic signals and speed limit signs within 300 meters of a school’s main gate, and painted roads within school zones with messages such as “school zone” and “protect children” so that drivers would proceed with caution. In order to reduce the potential that vehicles and children could come into contact, there is a strict ban on street parking on roads leading to school main entrances. The streets in a school zone in Seoul, clearly had marked roadway (here translated as “school zone – slow down – 30kmh”) and sidewalk protection fences, creating a safe walking environment for children.

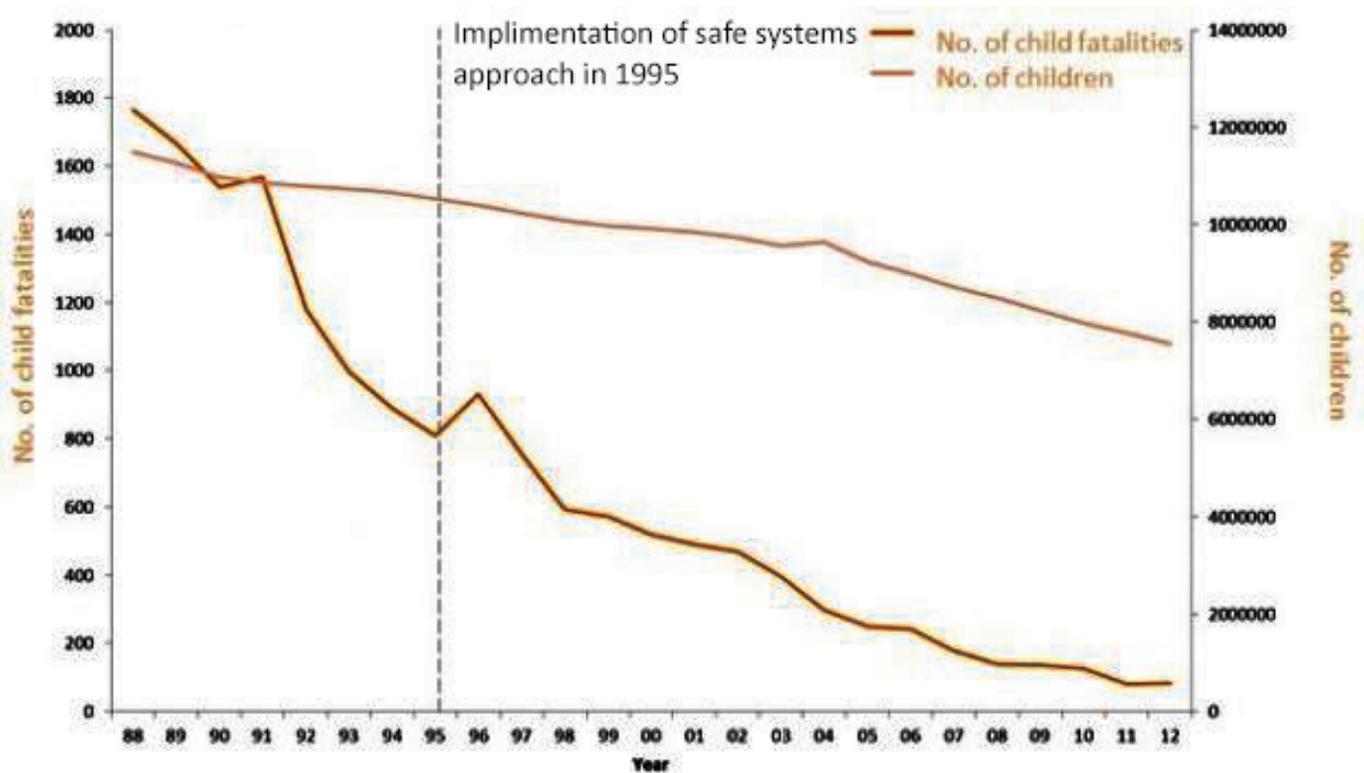
The School Zone Improvement Project produced very positive results. The measures led to roughly 32% fewer traffic accidents involving children each year. Combined with comprehensive measures such as traffic safety regulation, school bus operation and civil activities, South Korea has successfully reduced its child traffic fatalities by 95% in a little more than two decades.



Children walking through the street in a line, with speed limit marked on the street to ensure children's safety
 Source: <http://thecityfix.com/blog/urban-design-street-road-safety-children-cities-claudia-adriazola-steil-wei-li-ben-welle/>



Children walking through the street in a line, with speed limit marked on the street to ensure children's safety
 Source: <http://thecityfix.com/blog/urban-design-street-road-safety-children-cities-claudia-adriazola-steil-wei-li-ben-welle/>



South Korea’s children traffic fatality rate has been declining dramatically since the late 1980s, thanks to a suite of measures targeting both design and law
 Source: KOTI

5. Cultural Mile District, Brighton, UK



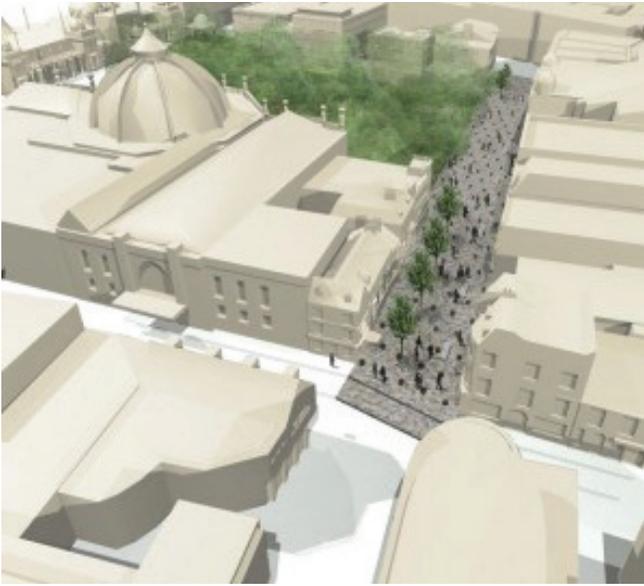
The city of Brighton and Hove has an excellent reputation for its creative, leisure and cultural industries, and attracts millions of visitors. Its dramatic setting, sandwiched between the sea and South Downs, constrains access and perceptions of the city. As a result, parts of the city are relatively inaccessible and ignored; other areas suffer overwhelming traffic congestion.

Landscape Projects, working with Gehl Architects from Copenhagen, were commissioned by Brighton and Hove City Council to assess its pedestrian and visitor experience. They researched on its urban structure, movement patterns and open-air activities, both in winter and in summer and further provided advice on public realm improvement projects which would result in a more walkable, relaxed, attractive and accessible city both for children and adults.

The most significant project to emerge from the study is

at New Road: a street laid out in the early 19th century to divert people away from The Prince Consort’s New Brighton Pavilion. The street forms part of the City’s Cultural Mile: a connective public space linking the principal cultural institutions of the city.

The project has transformed this part of Brighton City Centre, making a socially and environmentally sustainable public realm, contributing to the city’s thriving economy. It has cemented itself as one of Brighton’s most important public places, becoming the fourth most popular place for people to spend time in the city, just behind the beach. Since its opening, traffic levels in the street have dropped by 93%, whilst cycling and pedestrian numbers have risen by 22% and 162% respectively. English Partnerships selected New Road as an exemplar project for its Urban Design Compendium, whilst the project was lauded by Commission for Architecture and the Built Environment (CABE), and won awards from the Civic Trust, the National Transport Award for Urban Design, the Landscape Institute and the British Stone Federation.

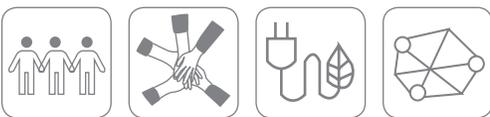


Street intervention in Brighton, to make the street more active through shared facilities
 Source: <https://gehlpeople.com/cases/new-road-brighton-uk/>



Street intervention in Brighton, to make the street more active through shared facilities
https://upload.wikimedia.org/wikipedia/commons/2/2e/First_woonerf_in_%C5%81%C3%B3d%C5%BA%2C_6_Sierpnia_Street%2C_July_2014_01.jpg

6. The Walking Neighbourhood, Chiang Mai, Thailand



The walking neighbourhood group works collaboratively with a team of artists from Australia and the Chiang Mai neighbourhood in Thailand to prepare walks — imagined, planned, practised and hosted by children aged 7–12 years. Children have developed their walks around the old city of Chiang Mai, an urban neighbourhood where family homes, industry and tourism meet and is primarily a place for

adults and adult activity. The presence of children here has been rare.

The Walking Neighbourhood initiative opened the discourse regarding ways for children to feel safe while being out in public, walking safely, meeting shop owners, pedestrians and developing a sense of themselves. The project also provided ways for families and whole communities to support the city’s children to become concerned citizens, to use their full agency to access a basic human right – to be involved in decisions that affect their lives.

Children accompany audience members on curated tours around a specific part of a city, community, venue or site. This way the audience gets to see and experience places, spaces and buildings in public and private. Children get control of developing the artistic experience, guiding an audience, navigating the physical space and sharing their experiences of autonomy all the while creating new friendships with people they do not know.

Two professional artists worked with locally identified children aged 8–13 years, either through a school or broader community engagement in 6–10 workshops.

During this time, the children were walking, mapping, exploring and researching locally, while interviewing people, shopkeepers, and neighbourhood ‘icons’. Up to 15 volunteers were engaged as almost personalised stage managers to support the children in developing this intimate and life changing event.

The children used their instincts to locate danger, excitement, adventure and safety and the audience was invited to relax and trust their young guides. These walks were varied in time and pace and all tours were to different destinations.²³



Children from the neighbourhood take visitors for a custom designed walk of the neighbourhood
Source: <http://thewalkingneighbourhood.com.au/the-show/thailand/>



Children from the neighbourhood discussing the route and areas they would want to share in their walk
Source: <http://thewalkingneighbourhood.com.au/the-show/thailand/>



Children from the neighbourhood take visitors for a custom designed walk of the neighbourhood
Source: <http://thewalkingneighbourhood.com.au/the-show/thailand/>



The neighbourhood walk is an interesting walk with children sharing their narrative of how they see it
 Source: <http://thewalkingneighbourhood.com.au/the-show/thailand/>

7. aProCh, Ahmedabad, India



aProCh, a community based initiative, in Ahmedabad, initiated by concerned parents and later by a design collective known as Design for Change was born out of the need for change in street safety. Street Smart under aProCh A is one such initiative where the main streets of the city close down (one day in a month) for traffic and welcome children and the community to feel free and safe. Children and families are free to set up games, activities, stalls etc. and it is safe for children of different age groups to have childhood experiences where the message is: the city cares for its youngest protagonists. It is a place where children come together from all demographics to become a community. The street becomes a playground and a canvas for children where they can own the city and leave their mark on its landscape.²⁴



Activities to engage children
 Source: <http://www.aproch.org/>



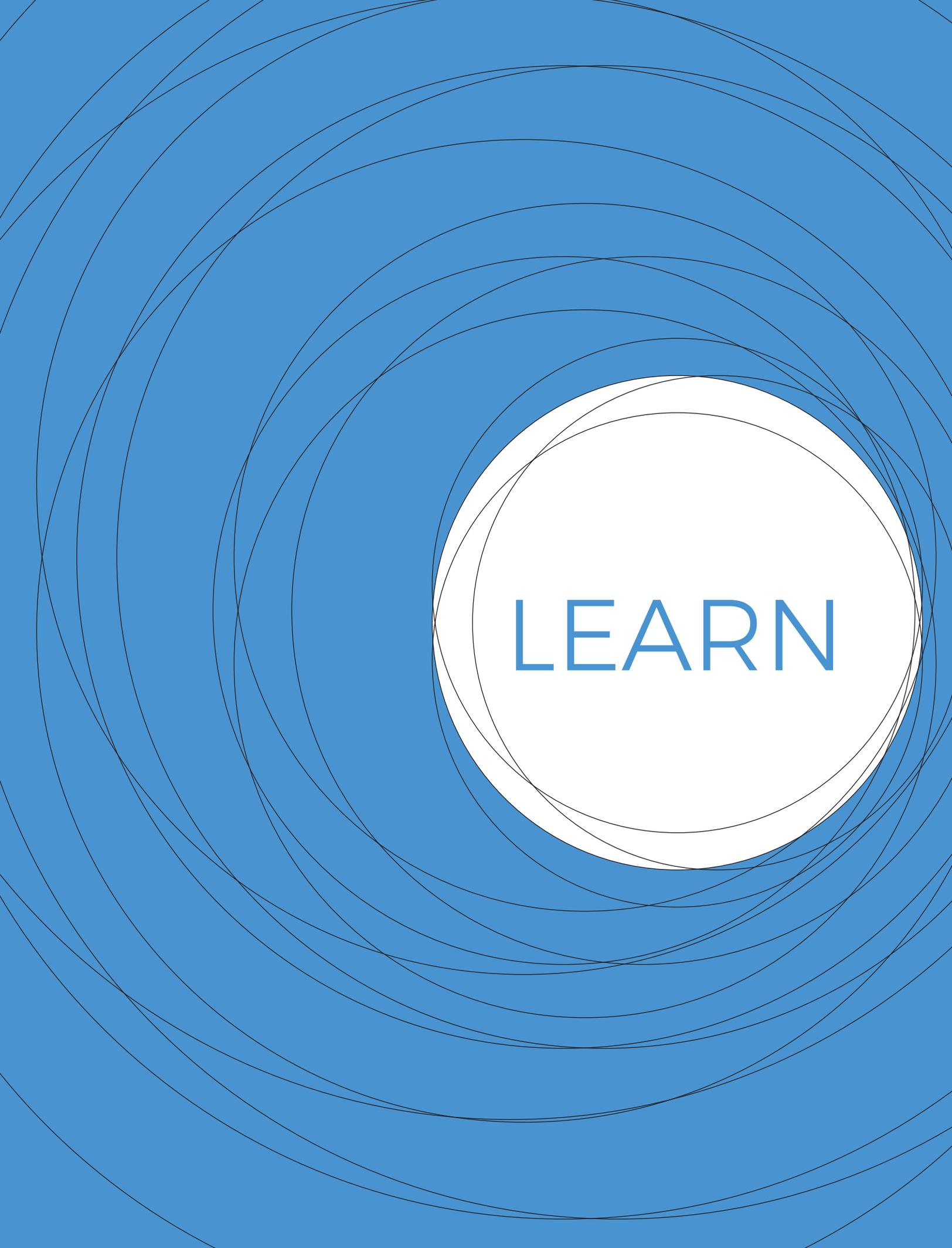
Activities to engage children
Source: <http://www.aproch.org/>



Children and families enjoy the car free street in Ahmedabad
Source: <http://www.aproch.org/>

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LEARN

Learn: Learning centres in the early years

Schools as places of change

Children spend a significant amount of time in a day at school and the school built environment plays an important role in influencing the overall healthy development of children mentally, physically and socially. Over the years, ample focus has been laid on the right of a child to basic education, which is critical to their overall development. India has done significant work in that area.¹ However, it is now agreed, that in ensuring this right, the built environment also plays a substantial role and this fact must be understood from the perspective of urban planning and design in order to comprehensively understand the gaps within the system towards ensuring that all children can get access to quality education.

A recent UNICEF study² has revealed that a large number of girl children were dropping out of school, as they felt unsafe on the route while getting to school. This highlights the gap in planning and design of urban areas and rising concerns towards the safety and security of children while getting to school. Henceforth in providing for good education, it must be stressed that not only is the school education facility of great importance; there is need to focus on where the facilities are located in relation to where children are living.

Lack of proper sanitation facilities in schools in urban areas has been one of the other major reasons for the higher rate of children dropouts from schools in urban India. National missions such as the Clean India (Swachh Bharat) Mission have helped the situation improve, although a lot is left to be done. Diarrhoea alone kills one child every minute in India — more than 1,000 children under 5 years of age die each day in India due to diarrhoea caused by lack of access to proper sanitation.³ While the increase and pace of sanitation is encouraging, there are still 900 million children in India who go to school without having a facility to even wash their hands.⁴

A rising number of schools in urban areas lack ample designated play space or even open space where children can play during school hours or after school hours.⁵ This burdens them with excessive pressure to concentrate solely on their studies, leading to growing mental stress and allied lifestyle diseases. Although there are set building norms for

primary and pre-schools, however due to congested urban neighbourhoods, such norms are difficult to accommodate in the given urban conditions and require updation and better coherence with the current urban issues.⁶ The right of children to free and compulsory education⁷ ensures that schools are made accessible for all children; however, it is found in many cases that schools in urban areas lack ramps, or disabled friendly toilets and other facilities. This results in discouraging children with disability and their families in providing them with regular education.

Distance from home to school is an issue in urban areas that concerns not just children, but also families. Lack of appropriate distribution of schools at neighbourhood level, leads to children having to spend large amounts of time travelling from home to school and back. With more women joining the workforce, parents are becoming more dependent on caregivers and outside support. For instance, although Delhi government has a rule obliging parents to admit their kids only in schools within 5-8 kms distance, the rule is hardly followed due to ample distribution of schools in all locations. However with both parents working and average travel time for work in Delhi being around 45 minutes, it is difficult for parents to transport children from school to home. As a result, there is added pressure on families to ensure safety, security and mobility of their children which leads to increasing dependency on caregivers and day care support.

The Delhi government for instance, has made sincere efforts and investment accordingly to improve the quality of schools in addition to focusing on the education systems and methodologies.⁸ With initiatives such as teacher training programmes, summer schools for children who require more support, skill-building activities, building toilets and ensuring they are usable and clean, the response has been tremendous.⁹ A major initiative was a survey conducted by the Delhi government and the mapping of this survey on a GIS based platform, with aspects such as location, built environment, access to toilets, internet and basic facilities that affect overall development of children. This made it easy for the government to identify the status of facilities and plan efforts accordingly. The success of their efforts was reflected through the results in the

current year's exams. There was a higher rate of children who passed and even better performance by girl children. Additionally, the inclusion of a happiness index into the curriculum from 2019 will help the city authorities to better map the progress of the current programme and the areas where more efforts are required.¹⁰ Delhi schools are a good example of a state having taken strong and effective measures to improve the status of schools in the city with the result of improved quality of education in government schools. The initiative is being replicated in other states and cities across India.

Apart from education, schools in India also act as important centres for providing nutrition to children, especially for those coming from very poor families. Under the mid-day meal, scheme schools provide one nutritious meal a day to students. This has encouraged poor families to send their children to schools, instead of forcing children to join the workforce and support the families.

Schools across are realising the need for action-based learning based on the understanding that children are constantly interacting with the physical environment of their schools during structured or unstructured time, consciously or unconsciously. Yet not enough attention is paid to the importance of physical environment for learning. Often classrooms are overcrowded, with no alternative spaces to learn, nor are they attractive, inviting or sensitive towards children's needs.¹¹

Architects like Kabir Bajpai and Tezuka Architects are defending the need for designing the built environment to

be an active part of the learning experience. Bajpai's work through BALA guidelines is an innovative tool to address active learning into the process of early education. The guidelines highlight how basic elements of design such as walls, staircases, doors, windows within a school can become active agents of learning. He emphasises the concept that the architecture of a school can be used as a resource to improve the teaching and learning process.¹² Similarly Tezuka Architects highlight that design of their kindergarten in Fuji, Japan wanted to teach through the building the values of human society that are unchanging, even across eras.¹³ This further highlights the need for children to be raised into people who do not exclude anything or anyone as adding to their development. Moreover, it propagates designing spaces as very open environments, filled with background noise, based on the premise that where the boundary disappears, the constraints disappear.¹⁴ The efforts of organisations and committed people such as these not only helps understand the role of urban design and planning but also addresses innovative use of construction material, ergonomics, and anthropometrics especially for small children as it can help them engage and learn better.

The following examples highlight successful initiatives and efforts that have helped children across the globe receive quality education and where efforts made through urban design and planning have addressed the vulnerabilities faced by children and innovative ways to overcome them. The examples further bring forth the fact that small design changes can make a great impact into the lives of children.

1. METI Handmade School, Bangladesh



“Learning with joy is the school's philosophy — the best for me is to see the building crowded with sprightly kids, who are really happy to go to school. It is primarily not the architecture that makes something special — it's the people: everyone who worked on it with all efforts and potentials and all who live in it and fill the space with atmosphere.” [Anna Heringer]¹⁵

METI enables children and young people in the region to

take classes up to the age of 14 and provides workshops for trade-oriented professions. The school has been set to provide children from the rural part with access to good, holistically oriented education. The children and young people are encouraged to develop into responsible, motivated and creative personalities and to use their skills to improve and develop their immediate rural environment. Reading, writing and arithmetic as well as languages are offered in a free environment and through open forms of learning. Meditation, dance and creative writing are part of everyday learning at the METI School as are discussions, and learning as part of a group and self-critical and social behaviour.



Children playing in areas created out of natural materials

Source: <https://www.designboom.com/architecture/earth-architecture-handmade-school-bangladesh/>



Children playing in playground of the school

Source: <https://www.designboom.com/architecture/earth-architecture-handmade-school-bangladesh/>



School has been designed by using local available materials and craftsmen

Source: <https://www.designboom.com/architecture/earth-architecture-handmade-school-bangladesh/>

The school is supported by an NGO, Dipshikha, which works actively in northern Bangladesh with the aim of creating awareness among rural folk of their own potential at home in an attempt to strengthen the region and reduce outward migration to the cities. The school also receives support from Shanti E.V. a German partner of Dipshikha which supports the financing, planning and implementation of development and educational work. A central aspect of their work is the implementation of integrated village development programmes for education, health, strengthening the position of women in society, nutrition, agriculture and trade skills. The school also provides support in emergencies and exchange and volunteer programmes.

The school is a renowned example of sustainable architecture and the project received the Aga Khan Award for Architecture in 2007, a coveted award in architecture. The project was awarded for its simple, humane approach

and beauty, in addition to the level of cooperation achieved between architects, artisans, clients and users. The school is designed on the principles of the vernacular built tradition using earth and bamboo as building materials.¹⁶ The primary potential for developing building in the rural areas is the low cost of labour and locally available resources such as earth and bamboo. It is particularly important to improve the quality of living in the rural areas in order to counteract the continuing population migration to the cities.

The project's main strategy has been to communicate and develop knowledge and skills among the local population so that they can make the best possible use of their available resources. The aim is to revive, develop and improve traditional building techniques and skills so that they are passed on to local tradesmen, transforming in the process the image of the building techniques.¹⁷

2. Makoko Floating School, Lagos, Nigeria



A great number of children living in Makoko, a slum neighbourhood, off the Lagos Lagoon in Lagos, Nigeria do not attend school. According to a needs assessment conducted in 1998 with local chiefs and other stakeholders, poverty and survival were the major challenges facing Makoko residents. Chiefs and parents were mainly concerned about the high rate of teenage pregnancy and anti-social activities of ‘area boys’ (small gangs, formed by young men who drop out of school and misuse alcohol and drugs).

On the other hand, the young people were concerned about their parents’ inability to provide resources for their education, parental unemployment, and the unsanitary and cramped conditions in which they lived. The coastal community of Makoko, through help from NLE Architects,¹⁸ with sponsoring from the United Nations Development Programme (UNDP) and Heinrich Boell Foundation from Germany, designed the Makoko Floating School on stilts within the lagoon’s waters as a prototype for a three-phase development that will become a floating community of interlocked and floating residences.

The Makoko Floating School uses local materials and resources to produce an architecture that applies to

the needs of people and reflects the culture of the community. Wood is used as the main material for the structure, support and finishing for the completed school. The classrooms are located on the second tier. They are partially enclosed with adjustable louvered slats. The classrooms are surrounded by public green space, with a playground below, and the roof contains an additional open-air classroom.¹⁹ NLE has also employed strategies to make the floating architecture sustainable by applying PV cells to the roof and incorporating a rainwater catchment system. The structure is also naturally ventilated and aerated. The completed structure rests on a base of typical plastic barrels. The barrels at the periphery can be used to store excess rainwater from the catchment system.²⁰

The aim through designing and setting up the school was to develop an improved type of architecture and urbanism for water settlements in African — coastal cities — starting with Makoko. A ‘floating’ building simultaneously addresses different issues flooding, land occupation, and foundation construction. The energy supply is based on renewable energy technology, the currently in existing sewage system would rely on compost toilets.²¹ The school serves the urgent needs of educating children in the community. The prototype floating building is modular, flexible and adaptable for other building typologies: homes, community centres, playgrounds — to gradually cultivate an improved quality of architecture, urbanism and living on water.



The school is accessed by the boats

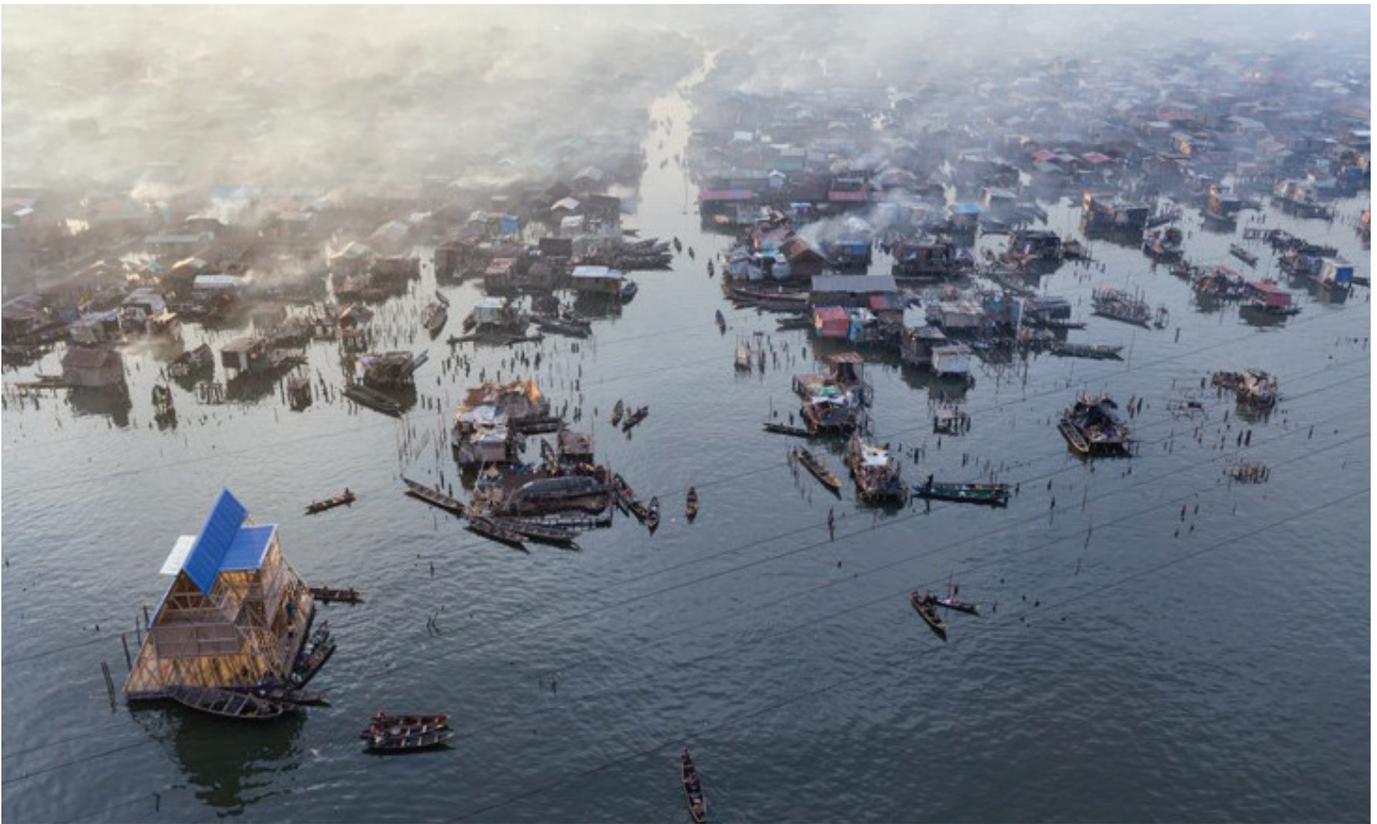
Source: <http://www.nleworks.com/case/makoko-floating-school/>



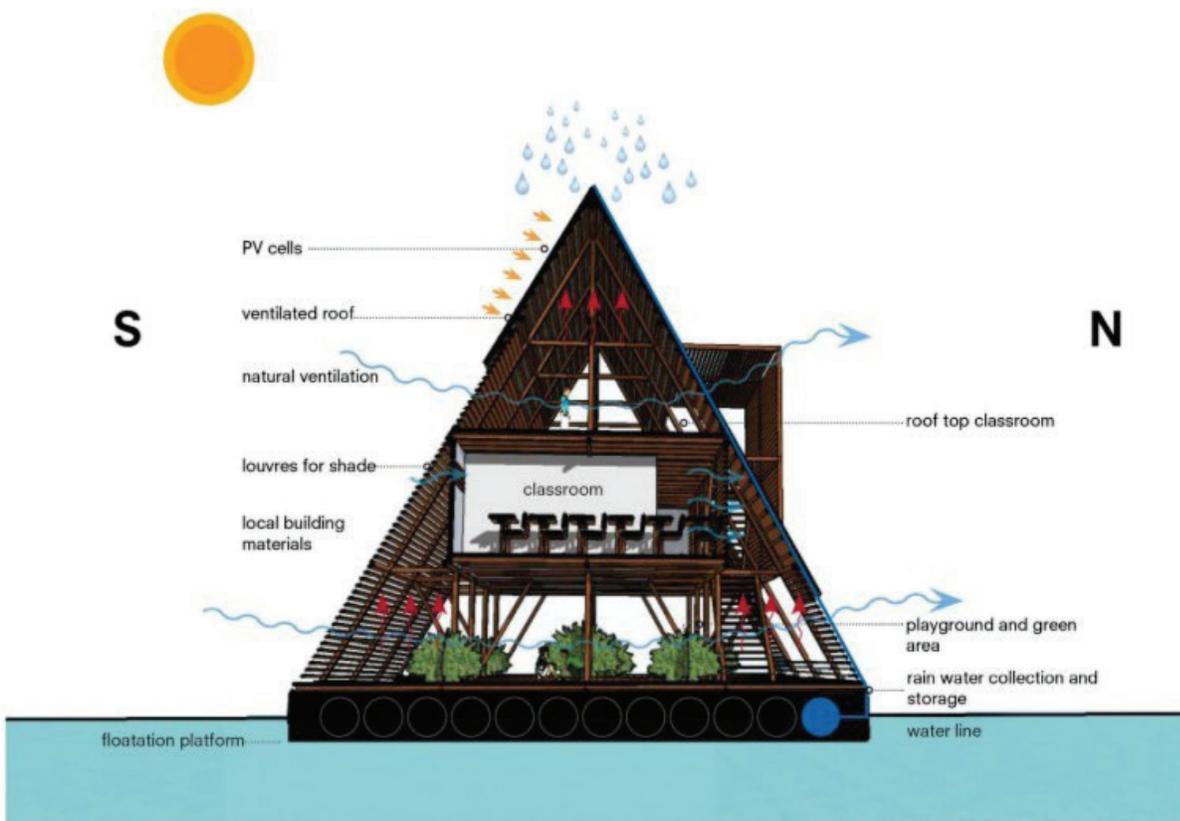
The space is used as a school during the mornings and the later half of the day it is utilized as a community space and play area for children
Source: <http://www.nleworks.com/case/makoko-floating-school/>



Since its inception, it has become a very important space for children and the families
Source: <http://www.nleworks.com/case/makoko-floating-school/>



The school is set up using local materials and doubles up as a community space due to lack of public space and school in the settlement
 Source: <http://www.nleworks.com/case/makoko-floating-school/>



The diagram explaining the design of the floating school
 Source: <http://www.nleworks.com/case/makoko-floating-school/>

3. Katha Lab School



The Katha Lab School began in 1990 as a learning centre in the slums of Govindpuri, Delhi, with five children. It has had a huge impact on the lives of children living in the Govindpuri eight-slum cluster where most children work to support their families. Through experimentation and relentless learning Katha stabilised the integrated solution that has created value for more than 100,000 children.²²

The key distinguishing features of Katha's education model have been the story pedagogy and active story based learning, in which teachers use a variety of techniques developed by Katha, rooted in the art of storytelling and the performance arts – to bring classrooms to life and creatively engage children in learning. Theatre, dance, music, sports, storytelling and film are among the many tools the teachers use. Katha's model also brings community issues into the classroom so that learning is relevant for children and empowers them to become agents of change in their communities. The idea is to empower children to solve pressing community challenges related to health, water, sanitation and environment.



Children drawing their neighbourhood
Source: <https://katha.org/katha-lab-school/>



Children having a play exercise during day care
Source: <https://katha.org/katha-lab-school/>



Children learning by doing (here having there on debate through a children's parliament)
Source: <https://katha.org/katha-lab-school/>

4. Nisha Play School, Goa, India



The Nisha Play School was built on an 800 sq. m plot in 1997. It is one of the few schools in India, which is built keeping the anthropometrics of children in mind. Gerard da Cunha, noted architect, ensured that the design and construction of the school was done using recyclable materials. Old grills, bed heads, a spiral staircase, furniture and even marble were all used in the construction.²³ The school is designed keeping two key parameters in mind; eco friendliness and child friendliness. Special care has been taken to ensure that all the nooks and corners of the school cater to these two aspects.²⁴

The school was designed understanding the basic needs of children to play and the flat area on the site was retained as a playground while the main building was built on a slope, balancing the landscape of the site. Concerns of bringing in

natural light, the westerly breeze, and maximising the use of space were instrumental in determining the eventual form.²⁵

Within the form, the layers of spatial experience were added by the insertion of a circular staircase. Each classroom includes a space for teaching in front of a blackboard and informal work area at tables or on the floor. The plan comprises a dollhouse, a separate space children play with each other without supervision. Each classroom corresponds to the particular user age group and is different from the other. Various elements of the building have been used as teaching aids to communicate ideas of form and colour.

Elements such as colour, metal crafts and broken tile 3D murals on various walls have been used. The sunlight is one of the key components of the design through the use of grilled open windows and ventilation through various shaped openings.



All elements in the school have been designed keeping in mind how children will use the space
Source: <https://thrillingtravel.in/2016/09/unique-schools-houses-of-go-a-museum-tour.html>



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All elements in the school have been designed keeping in mind how children will use the space
 Source: <https://thrillingtravel.in/2016/09/unique-schools-houses-of-go-a-museum-tour.html>



The school has been designed especially for children and all the anthropometrics are as per an average 3-4 year old
 Source: <https://thrillingtravel.in/2016/09/unique-schools-houses-of-go-a-museum-tour.html>

5. Riverside School, Ahmedabad, India



Riverside School has been designed, implemented and shared on a unique user centered curriculum that is providing schools with an alternative model that focuses on quality of learning and student well-being over the last 17 years. The school's methodology and inclusive approach has been recognised worldwide and honoured for its academic achievement as well as its unique philosophy of 'Doing Good AND Doing Well'.

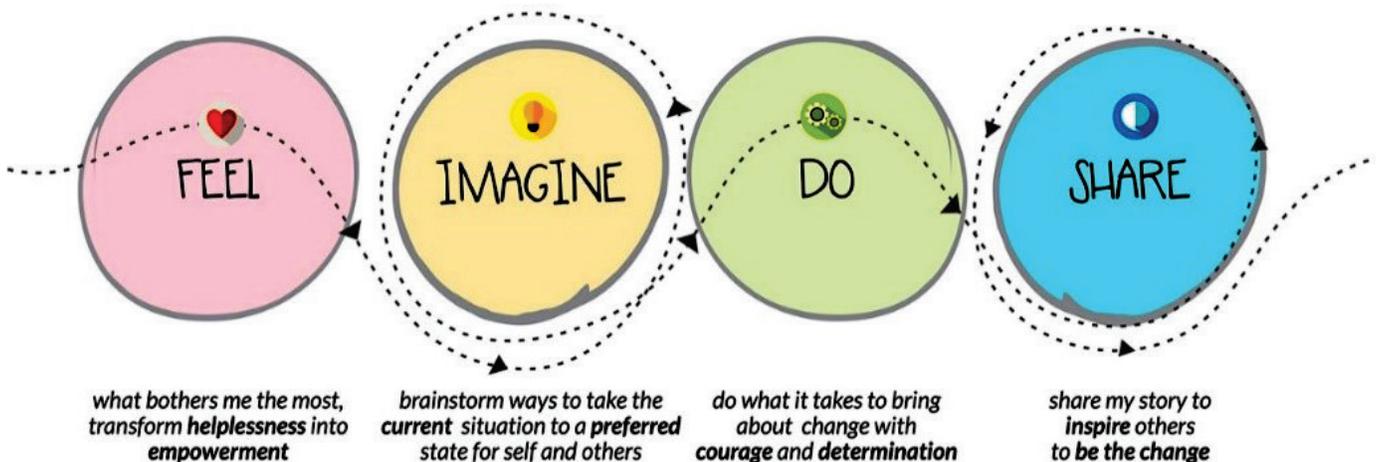
The school is based on a five-part approach:

- TO COMMUNICATE a compelling idea of children and childhood, their potentials and competencies
- TO PROMOTE and practise empathy in education, with particular emphasis on cultivating children's creative confidence through promoting their creativity

- TO ADVANCE the professionalism and culture of teachers, promoting a greater awareness of the value of collegial work and of meaningful relationships with the children and their families
- TO HIGHLIGHT the value of research, observation, interpretation, and documentation of children's knowledge-building and thinking processes
- TO SHARE best practices through educational dialogues, conferences, professional development courses on the issues of education and the culture of childhood

The initiative began with a school, but the work has expanded into a city-wide initiative called aProCH (a protagonist in every child) and a global platform called Design for Change. Through active engagement of children, parents and caregivers, the school has been actively helping children understand various aspects of the city and helping to make Ahmedabad a more child-friendly city. They have also become part of a global initiative called Design for Change.

How we Do it



FIDS = I CAN mindset

The riverside school has received a lot of recognition for their teaching method focusing on nurturing young minds and to allowing for creative freedom of thought and action
Source: <http://www.schoolriverside.com/campus>

Early Childhood Care Centres

Playschool, anganwadis, day cares, after school care

Children spend most of their time beyond home at play areas, day cares and early learning centres. These centres are their primary step into the world, where children have to learn to socialise, negotiate and work together with other children. With an increasing number of mothers joining the workforce and children as early as six months now attending a childcare facility on a regular basis, it has become critical that young children from all backgrounds should have access to high-quality childcare and early education.²⁶ Earlier, with large joint families, children could be taken care of by the grandparents; also, they received a lot of support in terms of early learning from within families. However, with the increase of nuclear families in urban areas, day cares are not just centres to take care of children while parents are working but also critical centres for providing an environment for early learning. In fact, even children whose mothers are not in paid employment now commonly participate in similar arrangements, primarily due to the quality of education and social activities the early learning centres offer their children.²⁷

Better quality childcare can have a positive influence on children's development and school readiness by providing valuable educational and social experiences. There is a growing demand for having well-qualified, well-paid, stable staff, low child-adult ratios, and efficient management, offering programmes that cover key aspects for the development of children (physical, motor, emotional, social, language and cognitive). Globally, early childcare is comparatively even more expensive than the public college tuition fee, forcing parents, primarily mothers to stay at home and take care of children. UK has among the most expensive and variable childcare, resulting in the fewest working mothers as the OECD study suggests.²⁸ Lessons need to be learnt from countries like Sweden where parents have a right to an excellent local free childcare centre, where half the staff are graduates, offering independence and support to the parents, especially mothers.

Most commonly, childcare facilities are not readily available in close proximity to homes and work places. As for new parents, finding childcare can be tough, and the younger the child is, the fewer are the options. So it becomes even more difficult if the services are not easily accessible to places where parents work, making parents depend on

caregivers or external support. Since childcare facilities such as anganwadis, are to be provided as per the standard population norm of one anganwadi for a population of 5,000, as per the URDPFI guidelines the number of children accessing them is never in any fixed order. Also, very often it has been found that the anganwadi has been allocated space, but due to not enough children, the facility never opened, adding to both financial and logistical pressure on parents to find adequate support.

Raising children in urban areas is expensive, as the rentals are higher in the city centres so families have to move to the suburbs for childcare facilities and support, and therefore travel a huge number of hours for work. Neighbourhood planning and comprehensive Transit Oriented Development (TOD) are key ways of ensuring that families can live and work at closer proximity. Canada being one of the countries which has done extensive research in this area has come up with policies that cater to family friendly neighbourhoods in the city centres, further encouraging them not to move towards the suburbs.²⁹

Day cares and primary schools mostly lack focus on their design and quality of spaces. These spaces need to be flexible, innovative, interactive and most importantly accommodating towards the needs of children between the 0–5 year age group. The Ministry of Housing and Urban Affairs and Ministry of Women and Child Development provides basic guidelines under the URDPFI and ICDS schemes respectively, regarding facilities for children in anganwadis, day cares and primary schools. However, due to space restrictions in dense neighbourhoods and lack of focus on needs of children in the 0-5 age group these centres usually lack, both quality of spaces and age appropriate equipment. The sector needs more institutionalisation and comprehensive mechanisms where facilities can be made easily available to all parents and children at the neighbourhood scale. In most cases, the children to teacher/caregiver ratio is skewed or the centre lacks proper ventilation and basic services, or is located in extremely poor conditions and localities, making children vulnerable to multiple other concerns. A legislative mechanism needs to be set up where parents and caregivers can give feedback, file complaints and help improve the current facilities and sometimes even be provided with ad hoc centres in homes. There needs to be a stronger government endorsement towards not just the need for early childhood

learning and provision of these spaces within the city, but also towards the need for these spaces to be designed with care and ample focus on the needs of children within the 6 months to 6 years age group.

An early learning environment is important not just for children, but also for parents and caregivers, especially in urban areas, where these centres double up as places for pre-natal and post-natal care of mothers, where regular health care and nutrition and basic parenting support is provided. These centres also offer mid-day meals and give importance to the overall health and nutrition of children

and parents, especially mothers in addition to early childhood learning.

This section focuses on highlighting some key examples of primary schools and day care centres, which exemplify some of these concerns of citizen engagement, use of materials, space and design. In addition, they highlight how cities and communities have come together and have found ways to form support mechanism in order to provide a healthy childhood experience. The section has been divided into two key parts: 1) kindergartens, day cares or anganwadis, and 2) primary schools.

1. Fuji Montessori Kindergarten, Fuji, Japan



Fuji Montessori Kindergarten (Fuji Yochien) in the Tokyo suburb of Tachikawa is a new Montessori nursery and

kindergarten school catering for children from two to six years of age. It moved into innovative new architect-designed premises in 2007. The nursery-cum-kindergarten is different from usual nurseries because it receives no public funds and it serves children of both working and non-working parents. It is not only the largest kindergarten



The Montessori school is designed in an endless loop format, on the idea that children should have the freedom to move around freely between spaces
Source: <https://www.archdaily.com/880027/tezuka-architects-fuji-kindergarten-wins-2017-moriyama-raic-international-prize>

in Japan, but the most talked about in the country. This is primarily so because the kindergarten has been designed as a child-friendly childcare space whereas most schools are often drab, standardised and grey concrete blocks.

Fuji's school building is designed with a 'doughnut ring' rooftop that encloses an internal courtyard space. The rooftop is an oval-shaped play deck that is used for free play and exploration, but can be adapted for more formal functions such as assemblies and other communal gatherings. The rooftop can accommodate 500 children. Based on the school's Montessori philosophy, the school is designed such that it gives the impression of a building with no walls. Classroom spaces, play areas, and support facilities merge into one. The design concept also results in the school building itself serving as a gigantic piece of play equipment. The brainchild of Tezuka Architects, the circular design was inspired by the idea that 'Children love to run in circles'.

The design is child-centred and has many playful touches – outdoor taps that allow children to clean up and wash

down and glazed roof lights that offer peephole views from between roof and classroom. The building integrates three prior existing Zelkova trees as well as a slide from the roof that provides the most direct route down from the roof. Children can interact freely between the rooftop and central garden spaces; these are aspects of the design that allow children to explore without inhibition as well as facilitate their access to nature. These design elements satisfy the key aspect of the Montessori methodology – satisfaction, contentment and joy, resulting in children being fully able to participate in daily activities, individually and collectively, in a place where they can understand, engage with and control their own environment.

The ultimate effect of Fuji's design concept is a learning environment that fosters the individual development and expression of all its pupils. The building's distinctive form sought to support the kindergarten's mode of operation, the Montessori education method – to provide a flexible, robust and secure framework within which to encourage key notions of independence and freedom.



The school has fluid design between levels and spaces to ensure free movement at all times

Source: <https://www.dezeen.com/2017/10/02/fuji-kindergarten-tokyo-tezuka-architects-oval-roof-deck-playground/>



Children can enjoy the outdoors freely while at the kindergarten

Source: <https://www.dezeen.com/2017/10/02/fuji-kindergarten-tokyo-tezuka-architects-oval-roof-deck-playground/>



The school has fluid design between levels and spaces to ensure free movement at all times

Source: http://moriyama.raic.org/sites/default/files/fuji_kindergarten.pdf

2. Manav Sadhna, Ahmedabad, India



Manav Sadhna is an NGO based in the Gandhi Ashram, Ahmedabad. It is dedicated to the upliftment of underprivileged children and focuses on community participation and building out of waste material especially in poorer neighbourhoods.

An activity centre built amidst the largest squatter settlement in Ahmedabad, Manav Sadhna demonstrates the application of recycled waste as an affordable, aesthetically pleasing and efficient building component. The multi-purpose activity centre serves as an informal school, vocational training institute, gymnasium, and health centre as well as a community space. A crèche has been added to take care of younger children. The

construction process not only integrates waste and hand tools but is also participatory involving local help. The centre has proven to be an economical, environmentally friendly, participatory and aesthetically pleasing alternative solution to contemporary building practices for the urban poor.

In Ahmedabad's largest squatter settlement, this multi-purpose activity centre is intensively used, providing a community hub, with its premises and activities constantly expanding. It has also created a model for construction using recycled waste. With door panels made from shredded packaging, walls from wooden crates and tiles from ceramic waste. Local people, who earned wages and learned new skills in the process, manufactured these components with hand-operated tools. The result addresses environmental concerns, economic issues and provides affordable housing.

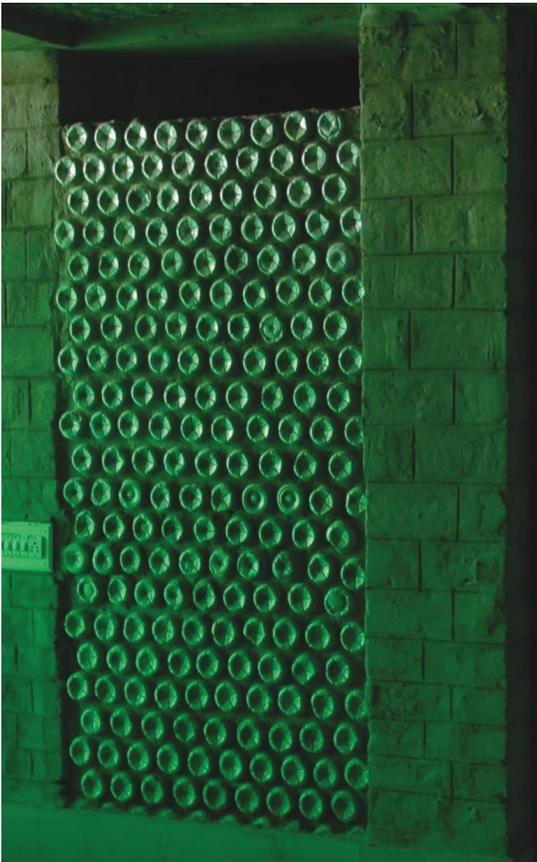


The space is used for collective meetings, gatherings and other social events

Source: https://worldarchitecture.org/architecture-projects/ezmc/manavsadhna_activity_centre-project-pages.html



The class room can double up as common space and play area for the children
Source: http://www.manavsadhna.org/images/file/report_m_15-16.pdf



The centre is famous for use of waste material and to create innovative space
Source: https://worldarchitecture.org/architecture-projects/ezmc/manavsadhna_activity_centre-project-pages.html



Manav Sadhna as a community centre with a dedicated space for children to study and have a space for themselves
 Source: https://worldarchitecture.org/architecture-projects/ezmc/manavsadhna_activity_centre-project-pages.html

3. Rani Amrit Kaur Child Study Centre, Delhi, India



stimulating environment for children with varying learning potentials, facilities were expanded with services for children with special needs.³⁰

The Rajkumari Amrit Kaur Child Study Centre was established as a laboratory for the Department of Human Development and Childhood Studies, at Lady Irwin College in New Delhi. With its guiding philosophy of providing a

This more than 50 year-old centre has an early intervention programme called 'SETU', the Systematic Early Training Unit. SETU aims to provide services to children at risk as early as possible. Early identification and remediation of



One of the oldest day care centre in Delhi, also an important centre for children with special needs
 Source: <http://www.ladyirwin.edu.in/studycentre.aspx>

developmental difficulties is vital for allowing children to develop to their full potential with minimum effort, and for providing timely support and guidance to families.³¹

The Child Study Centre has been able to nurture children through their early years by providing them with a stimulating, cheerful and child-friendly environment. The centre focuses on inclusive philosophy with respect for

the diverse needs and potentials of children. It is known for the active involvement of parents through meetings, workshops and a parent library, and intends to empower the family through guidance and counselling. The centre also has a community outreach programme to sensitise the public about the importance of appropriate inputs in early childhood.



Children participating in an annual day function at the Lady Irwin Centre
Source: <http://www.ladyirwin.edu.in/studycentre.aspx>

4. Mobile crèches



Mobile Crèches has been running daycare facilities for children of migrant construction workers in Delhi since 1969. The organisation cares for roughly 14,000 children from 0–12 years old at a number of construction sites and urban slums. There are currently 53 daycare centres in the Delhi area either run or supervised by Mobile Crèches that provide education, nutrition, and healthcare for children.³² Mobile Crèches also runs training programmes for childcare workers at their facilities and at other organisations as well. In addition, the organisation runs community

education and advocacy programmes on early childhood development (ECD) and lobbies for policy change and legislation at the national and state levels.

Mobile Crèches operates on three daycare models:

1. Direct delivery: Mobile Crèches is responsible for the day-to-day operation of individual daycare centres at a construction site, as well as training staff and monitoring the quality of services delivered.
2. Shared ownership: Mobile Crèches identifies NGO service providers and construction companies to implement and finance day-to-day services, while providing technical support in the form of employee training, initial set-up, and close monitoring of services

to ensure quality.

3. Transfer ownership: Construction companies are fully responsible for the management and financing of the crèche. Mobile Crèches provides initial staff training and some ongoing supervision.

Mobile Crèches focus on nutritional support through monitoring children's growth and providing them a nutritious meal at least once a day and ensuring that mothers are able to take breaks from work to breastfeed their children.³³ The organisation also promotes health and hygiene by providing immunisations and clean drinking water, deworming, encouraging hand washing, and disinfecting toys. The centres set up through Mobile

Crèches make sure that children receive early education services depending on their age. Children from 0 to 2 years are given individual attention and stimulation by caregivers. Children from 3 to 5 years learn through play and are helped with sensory motor skills development as well as pre-literacy and numeracy concepts. Children over 6 years are helped with school readiness, literacy and numeracy through tutorial support.³⁴

Mobile Crèches combine advocacy, community engagement, and childcare to offer holistic health, education, and nutrition services for children at construction sites and urban slums.



Children enjoying their day at the makeshift day care centre at the construction site while their parents work
Source: <https://www.globalgiving.org/projects/nurturing-childhood-sowing-change/share/>



A mother and the toddler taking a nap at the construction site

Source: https://www.huffingtonpost.in/entry/urban-photographer-of-the-year-winners-remind-us-of-the-beauty-of-city-life_us_562110d6e4b069b4e1fbc-21b?ec_carp=2353856677582020383

Photographer: Ankit Narang



Children enjoying their day at the makeshift day care centre at the construction site while their parents work

Source: <https://www.mobilecreches.org/>

5. San Jose Pre-school, Cajicá, Colombia



The pre-school building of the San José School in Cajicá presents a series of pure volumes implanted in the ground in response to the natural context in which they are located. Each volume houses two rooms, one on the first floor and another on the second floor.³⁵ There is a covered circulation space that surrounds the courtyard as a cloister, generating a spatial and visual relationship between the volumes and their surroundings. In turn, each room has a rear terrace that becomes the link with the outside and nature, an essential relationship for each of the inhabitants of the building.

San Jose pre-school is proposed as a learning space, in which the interior activity becomes an extension of the natural exterior. All rooms communicate with a green space or balconies with a slide for children. Likewise, a series of

communal spaces surrounding the central courtyard and gardens are planned on the covered circulation areas, making them a stage for special and everyday events.

This kind of configuration allows a flexible development, forming 'partial finite units', regardless of the size or cut-off point that is made, according to the stage in which the project is developed over time. The result is a configuration of an ambiguous but unconfused space in which the absence of volumes is unnoticeable.³⁶ Additionally, one of the great virtues of having been projected as independent buildings is that it can be built through stages while guaranteeing that it will never be seen as an unfinished project.

The hierarchy of the uses is obtained by means of the varying volumes and sizes of the buildings that make up the cloister. In this way, the project has two larger volumes, which house the administrative area and multiple character rooms in the front of the building, generating an imposing and distinctive image.



Wide corridors and focus on anthropometrics while designing the furniture makes it an important place for children
Source: <https://www.archdaily.com/901054/san-jose-preschool-taller-de-arquitectura-de-bogota>



The circular layout provides for an inner court and outdoor open area for children to play freely
Source: <https://www.archdaily.com/901054/san-jose-preschool-taller-de-arquitectura-de-bogota>



The pre-school has been designed keeping in mind the needs of children and ensuring that all rooms get access to outdoors
Source: <https://www.archdaily.com/901054/san-jose-preschool-taller-de-arquitectura-de-bogota>

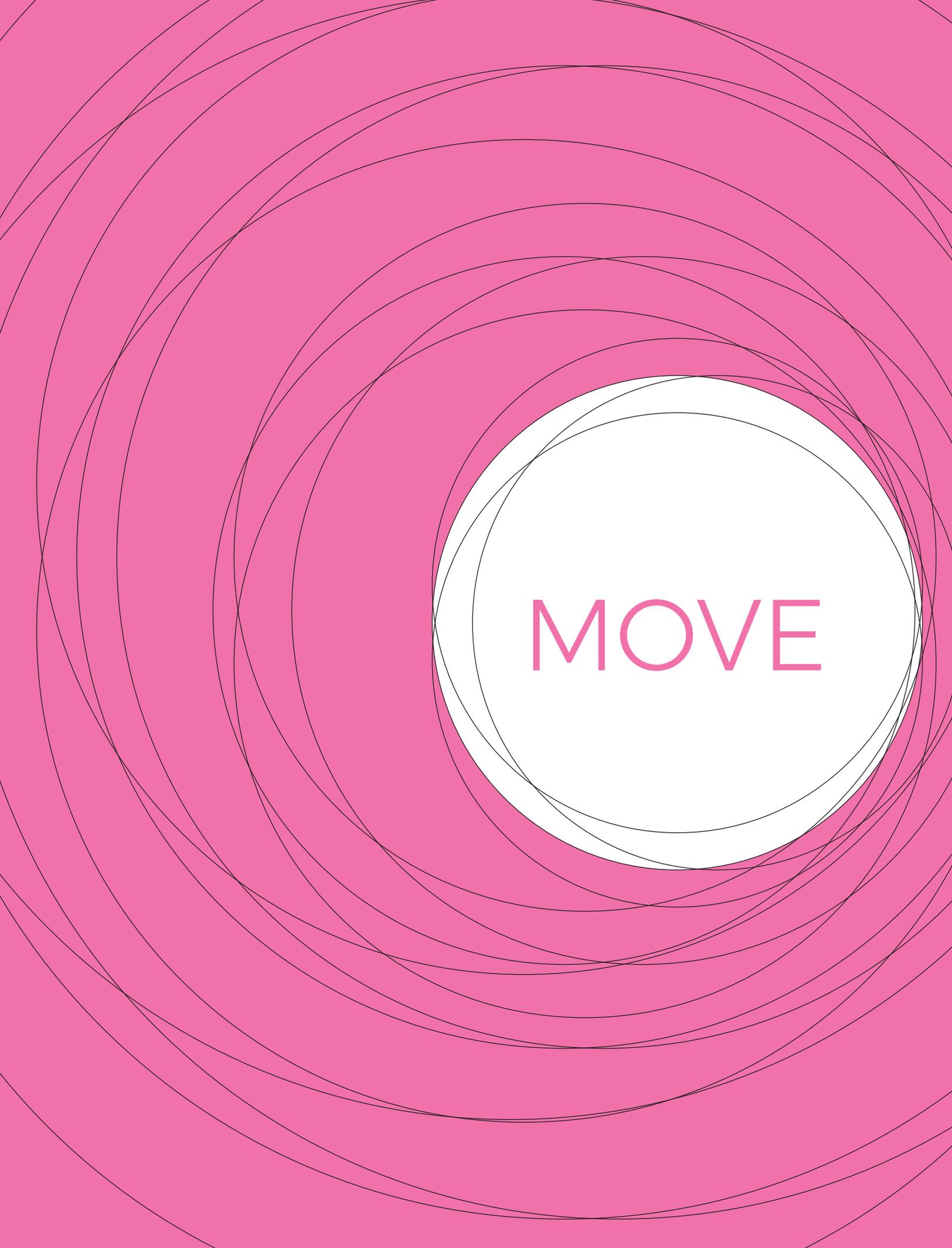


READYMADES

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READYMADES

MULLACKAL ALAPPUHA
PH: 2253195



MOVE

MOVE

Mobility: How children move within the city?

“It is normal for children to carry out activities on the streets – such as cycling, walking, running, playing and other common group activities. It is also important for their healthy development that children, from an early age, undertake such activities. For this reason, it is important for the streets to be safe so that these activities can be undertaken without the child’s safety being put at risk.”

WHO and UNICEF, 2008
World Report on Child Injury Prevention

The novelist Michael Chabon once reflected, “Childhood is a branch of cartography.”¹ Layering the city with micro-landmarks and seemingly utilitarian objects that provide physical cues shaping their understanding of their urban environment and from their vantage point, giving them a sense of place. Urban environment significantly affects their health behaviour. Active travel behaviour is greatly impacted by the increase in urban sprawl and lack of traffic safety. For children, active and independent travel contributes to physical activity, social and motor development, and other health-related outcomes. A reduced number of children engaging in independent mobility over the past years has further led to greater focus on children’s independent mobility.²

Based on children’s rights, independent mobility is something of intrinsic value to children, which they should be able to enjoy. A safe outside environment is a prerequisite for this, which should be provided.³ To understand how children move from one space to another and the aspects that are relevant to them, it is critical to understand the urban environment from their perspective. Urban 95 cm is one such method developed by BvLF primarily focus on the way to understand the urban environment from 95 cm height the average height of a 3 year old. It is a thought-provoking starting point to really focus on how young children perceive their environment.

There are various metrics and rules of thumb for assessing walkability: the half-mile walkshed, the quarter-mile pedshed, transit sheds, Walk Scores. It is understood that if a place that works for kids, it will work well for everyone. Along these lines, Enrique Peñalosa has noted that children constitute a kind of “indicator species” for walkability and overall liveability. As discussed in the streets chapter as

well, there’s the “popsicle test” (i.e., you live in a successful neighbourhood if a small child can walk to a store, buy a popsicle, and return home before it melts).⁴ And the Smart Code takes the idea of the pedestrian shed one step further by stipulating what some call a “playshed” – that is, within 800 feet of every residential lot, there should be a “Civic Space designed and equipped as a playground.”⁵

In other words, the distance that a curious and perpetually distracted toddler can navigate city streets on foot in 10-20 minutes. A viable toddler walkshed can be identified by if a neighbourhood provides a range of destinations and diverse experiences within a toddler’s walking distance, without requiring access to an automobile. Immediate benefits include, the social benefit derived from a child being able to visit a nearby friend unaccompanied, the well-being associated with this and the sense for the child of self-determination in their life and daily activities. The conditions in which children’s independent mobility is likely to occur – safe and vibrant urban neighbourhoods and not dominated by traffic, in which people feel safe and want to move around on foot and bicycle – also benefit the wider community, notably for older people and other potentially vulnerable groups in society.

The concept of independent mobility for children is not either a focus of many interventions or a major concern of policy-makers. It is seen as desirable, but is not regarded as a right that should be accorded to children.⁶ Saul Billingsley, Director General of FIA Foundation, a UK charity that promotes road safety across the globe, argues that ‘livable cities’ start with the schools and that it will be possible to reduce the number of child casualties: “If we could just make safe communities beginning with the school which is the beating heart of a community where everyone congregates, we could start there and spread out. In order to truly make cities safer and inclusive for children, their needs will have to be put at the heart of spatial planning and urban development. Incorporating children’s independent mobility into policy frameworks and investing in research to consolidate and develop knowledge in the area. Where on one hand good urban design fosters human interaction, getting to know one’s neighbours, a sense of community and eyes on the street; in practice, through policy changes and strict planning norms —reflecting a lively and interesting place, and one that is not impersonal to its children.

In the following chapter, some of the examples that specifically address independent mobility of children within urban environment has been discussed, through

some of the initiatives that have been taken up by cities across the globe.

1. Mapping danger spots, Bogota, Colombia



The former mayor of Bogotá, Enrique Peñalosa, once said: “Children are a kind of indicator species. If we can build a successful city for children, we will have a successful city for

everyone.” To make the city’s public spaces more equitable started two decades ago with Peñalosa’s ambitious bus rapid transit scheme, bike lanes, and the introduction of 1,200 parks and play spaces.

In one of the city’s poorest districts, Ciudad Bolívar, community members worked with Urban 95, a Bernard van Leer Foundation initiative to improve public space for people under 95 cm tall. In a district with high crime rates and little green space, a community walk-around identified danger spots and how residents would like to tackle them.



Young children taking part in improving the public space make king it safer and interactive for young children
Source: <https://www.theguardian.com/cities/2018/feb/28/child-friendly-city-indoors-playing-healthy-sociable-outdoors>

Conventions

Educational institutions

- 1 La Acacia II school Venue A
- 2 La Acacia II school Venue B
- 3 Psico pedagogical la Acacia

Kindergarten

- 1 Kindergarten la Acacia II
- 2 Kindergarten la casita de Juan José

Public space

- 1 La Acacia football court
- 2 San Luis football court
- Free public space

- Communal hall
- Cable car Column
- Cable car line

Social mapping results

- Primary roads walked by the population
- Critical safety and public space points
- Critical health and public space points
- Unsafe crossings
- Roads traveled identified by Lunárquicos

Crime rates

- 5 crimes reported in 2016
- 6 to 9 crimes reported in 2016



Map shows the work undertaken by urban 95 team in Columbia to improve public space for 0-5 year olds

Source: <https://www.theguardian.com/cities/2018/feb/28/child-friendly-city-indoors-playing-healthy-sociable-outdoors>

With tools such as street paintings and planters to mark a route between a kindergarten, school and park, to reduce traffic speeds, new play space was created, and buildings were painted in bright colours.⁷ The idea was to use ‘tactical urbanism’ to make simple changes that can be made permanent if they work. The community that developed the plans was encouraged to own the changes

and help keep the new facilities in use – if they do not, the city will not maintain them. Bogotá’s cable car company also planned to replicate the ideas in the areas by the 24 columns of its four-stop mountainside route. Suggested improvements included breastfeeding areas, play spaces and centres for the elderly.

2. The case of Changsha, Hunan, China



Up and until the end of 2014 there were no local urban planning laws and regulations focusing on ensuring and protecting space for children in Changsha, one of the most populous city in the Hunan Province, China. Thereafter, the Changsha Urban Planning Bureau included a Child-Friendly City initiative into their 2050 Long-term Development Plan. Since then they have begun to launch a series of improvement projects such as;

- walking spaces
- traffic organisation for peak hours
- sign integration
- public spaces around schools

All of these aim to establish a better environment for children to study in, live and play. In recognition of Changsha’s efforts, the China Child-friendly Community Work Committee awarded the city China’s CFC Community Service Project Award for 2017.



Safe Sidewalks around Schools with Bollards or Fences (left: Before 2016; right: After 2017)
 Source: <http://www.itdp-china.org/news/?newid=56&lang=1>

3. Project Bus Stop, Singapore



The potential for ‘learning landscapes’ – like children doing puzzles at a bus stop – to help reinvigorate public spaces is the subject of a new podcast. When children as young as two and three years old are already facing significant gaps in their exposure to words, numbers, and spatial understanding, urban planners and child psychologists are developing ways to transform community spaces – from

bus stops to supermarkets – into opportunities to augment children’s education through playful learning.

A concept bus stop brings a tech-infused library experience to the roadside by offering free Wi-Fi, phone-charging points, e-book downloads and even a swing. Jurong has been made a testing site for Smart innovations by the government who are eager to turn Singapore into a Smart nation. The unique spot – simply named Project Bus Stop – provides free Wi-Fi, phone charging points, interactive Smart boards, a green roof, bicycle parking and even a swing.



The bus stop also includes an open library and swings to make children feel comfortable
 Source: <https://www.curbed.com/2017/3/2/14784646/bus-stop-design-singapore>

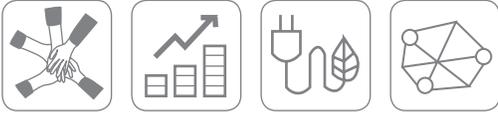


Interactive screen to keep children busy while they wait for their bus; promoting public transport
Source: <https://www.curbed.com/2017/3/2/14784646/bus-stop-design-singapore>



Interactive screen to keep children busy while they wait for their bus; promoting public transport
Source: <https://www.curbed.com/2017/3/2/14784646/bus-stop-design-singapore>

4. Vision Zero Action Plan, New York, USA



With a growing number of fatalities on road in the New York City, the city came up with a vision zero action plan in 2014, in order to prevent these incidents and systematically address them. With the action plan, the City made a bold new commitment to improve street safety in every neighbourhood and at borough level. As part of the initiative, the city management came up with expanded enforcement strategy against dangerous moving violations like speeding and failing to yield to pedestrians. In addition, new street designs and configurations to improve safety, broad public outreach and communications, were also implemented. As part of the action plan a legislative agenda to increase penalties for dangerous drivers was also suggested.⁸

As part of the strategy and action plan, some of the areas where these strategies were implemented, the results reflected a clear decrease in fatalities due to road accidents by 34%. With an active public dialogue, steps were taken to change behaviour and successful implementation of safe street designs. For successful implementation of the initiative, the city government collaborated with private organisations, NGOs and communities to take the decisions and actions from ground up.

These were some of the street design and regulation guidelines:

- STREET DESIGN AND REGULATION
- **Designate lanes: Clarify who belongs where on the street through better markings**
- **Clear merges and transitions: Improve alignments and clearly mark merges to simplify driving**



As a city level initiative actions were taken to improve the road safety especially for children
Source: <https://www.thevillager.com/2011/08/can-i-please-just-cross-the-street/>

- **Add crosswalks:** Clarify where pedestrians are crossing through markings
- **Open up intersections to improve visibility:** Remove visual barriers such as parking that can cause traffic crashes and injuries near intersections
- **Widen the parking lane:** Keep cars and trucks loading and unloading out of the travel lanes when double-parked
- **Add bike paths and lanes:** Clearly designate the bicyclist right-of-way
- **Create new left turn lanes:** Relieve pressure on drivers to turn too quickly or too soon by creating dedicated space for turning
- **Left turn phases:** Separate turning traffic from oncoming traffic and pedestrians
- **Eliminate unsafe turn movements:** Shift left and right turns to other intersections with better conditions for visibility and traffic
- **Leading pedestrian intervals:** Give pedestrians a head start at the light
- **Leading bus interval:** Give buses a head start at the light

- **Install speed bumps:** On residential streets, speed bumps remind traffic to travel at low speed
- **Time traffic signals for ‘green waves’:** Keep drivers travelling together at a consistent speed of travel
- **Reduce night-time speeding with signal timing:** Cut down on opportunities for speeding outside of rush hour
- **Add signals and controls:** Eliminate confusion for all users
- **Increase street lighting level:** Improve visibility at night in high-crash areas
- **Pedestrian safety islands:** Shorten crossing distance and add visual cues for drivers
- **Extend curbs to bring pedestrians into the line of sight for drivers:** Shorten crossing distances and extend curbs at intersections for better visibility
- **Lower speed limits:** Lower speed limits to send the message that drivers are entering school zones or other areas with heavy pedestrian traffic
- **Accessibility improvements:** Accessible pedestrian signals and curb cuts

Manhattan
First and Second Avenues



Bronx
Macombs Road, University Avenue to Jerome Avenue



Endnotes

Introduction

Live

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