

Master Thesis Report:

In Sustainable Urban Design

By Jaisudha Nandakumar

At Lund University, Faculty of Engineer-

ing

Department of Architecture and Built

Environment

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able Urban Design

Examiner Jesper Magnusson, Senior Lecturer

Supervisor Ida Sandström, University Lecturer

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Examiner's Assessment

The subject matter of this thesis is highly relevant – in Bangalore as anywhere else on the planet. Issues of child safety, independence (and thus emancipation) in the public domain are as important as they are complicated. Jaisudha, you have ambitiously processed the main aims and complex issues of your thesis to a satisfactory extent. You have identified a wide variety of concerns regarding children's presence in urban public spaces. Through different theoretical approaches and design efforts you have shown the importance of addressing the specific needs of children and young people in urban planning and design processes. I conclude, after having read the final version of your work, that the thesis meets the general criteria for an approved master thesis in Sustainable Urban Design.

I congratulate you to this master's degree and I wish you a successful professional career! Hopefully, you will continue the very important work for an increased safety and emancipation for children and youngsters in our urban environments, wherever you decide to practise your profession.

Acknowledgments

I want to thank all my friends and family that helped me collect data for this project.

Thanks to my talented friends Likith Chidananda, Angiras Krishna and Robert Romario for sharing their beautiful photographs depicting urban public life and children's public life in India.

Thanks to my parents for all the support and encouragement. Special thanks to my friends Vivina, Niveda and many others with whom I could recollect memories of our childhood in our hometown, Bangalore.

Last, but definitely not the least, I want to thank all my wonderful classmates and SuDes team at Lund University, Andreas Olsson, Louise Lovenstierne and Peter Sjostrom for all their guidance throughout this program. Thanks to my Examiner, Jesper Magnusson for guiding me in the right direction in this thesis. Special thanks to Ida Sandstrom for giving me the support, guidance and attention throughout the



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Abstract

This thesis is a study of the public social life of children in an urban environment and of implementation of techniques and tools that would transform a typically large metropolitan city into a child friendly city. The common conception of children as the future citizen rather than as active citizens have lead to completely ignoring the needs of children during the designing process in many cities. If a child is brought up in an nurturing environment there will be a significant positive impact on the child's behavior, character and physical well being as they grow older. The lack of concern for considering children as active citizen at a city planning level is seen in many countries but in this thesis Bangalore has been chosen as a test

are the principles that are to be used to make the streets or spaces child friendly if not how can such spaces me made?

bed to study the following questions: Do children in a fast growing cities have a third place within their daily commute? How can the streets that connect such different spaces be a safe route for the children to use? What



"If children are not designed into our cities, they are designed out. This means that they are deprived of contact with the material world, with nature, with civic life and with their own capacities."

— George Monbiot, writer

1. Introduction

Any city as a whole has both advantages and disadvantages for all age groups. This thesis paper focuses on the specific group of children, because their needs seems to be the least considered in planning and designing of cities.

The aim of the thesis project is to:

- *i*) Identify different third places for children in the Central Business District of Bangalore
- *ii*) Suggest design that supports these spaces as a third place for children
- *iii*) Create a tool box for third spaces with different contexts.
- *iv*) Create better connection between these places

- 1:



For further discussion a clear understanding and context of the terms *children*, *third place and child friendly streets* are essential.

1.1a Definition of Children

The term children is a heterogeneous aggregation and distinctions are to be made between countries and regions within them, between age groups and between socio-economic conditions as well. For the purpose of the thesis, children here refer to anyone below the age of 18 residing in the city of Bangalore.

India has the largest population of children in the world. Children (ages 0-18 years) account for 472 million (Census of India, 2011) members of India's population (39%). Of these, 128 million (26%) children live in urban areas (Census of India, 2011). Children notably represent one-third of India's current urban population.

The National Policy for Children (NPC), 2013, has been one such national level policy. It affirms the government's commitment to addressing the challenges faced by children. In line with the government's earlier commitments towards rights of children,

the NPC recognizes that childhood is an integral part of life with a value of its own and that children are not a homogeneous group and their different needs need different responses, especially the multi-dimensional vulnerabilities experienced by children in different circumstances. NPC also acknowledges the need for a long term, sustainable, multi-sectoral, integrated and inclusive approach for the overall and harmonious development and protection of children. NPC's priority areas are survival, health, nutrition, development, education, protection and participation.



Definition of *Children*Based on UN Convention on the Rights of the Child,
Defines children as people aged 0 to 17 years.

1.1b Why child friendly spaces?

An urban planners main role is to create a healthy and livable built environment. In the long run of pursuing healthy and livable built environment for all, the right of city for the vulnerable groups such as children are very underestimated and under-prioritized which creates negative consequences to them. In this part of the thesis I discuss how by prioritizing in making built environments healthy and livable for children would make it healthy and livable for all. (Bolt,2017)

The amount of time a child spends playing outdoors is directly proportional to the child's health and well being, their contact with nature and their ability to independently get around the city are the measures of how a city is performing, not only for children but for everyone. Fundamentally the things that everyone want is often same as what the children want: safe streets, green space, clean air, somewhere to call home and the freedom to be themselves. Designing child-friendly city is about showing respect for human dignity. Here are some reasons why

Focused on Equality

In a child friendly city every resident regardless of gender, disability, ethnic origin and age should have equal opportunities and services around the city. This promotes diversity and fairness among the resident creating an environment that upholds a high standard of respect among residents, this could also promote equality in the current and future generations.

Puts Safety First

In terms of safety child friendly cities are committed to protecting children from violent crimes, exploitation and abuse this in turn may have a trickled down effect on the residents as they are supported by local organizations to keep violence in check. It is critical for any city to thrive to have safety and well being of its residents prioritized and child-friendly cities tend to uphold this as a necessity.

Embraces Nature

Child friendly cities focus on ways to bring in more green spaces and open environments for the residents to embrace nature. This may futher encourage everyone to get involved in social activities not just as leisure but also to preserve, clean-up and maintain many more green spaces as a result all residents can enjoy having easy accessibility to nature and this will in turn improve the overall well being.

Maintains unpolluted environments

Child friendly cities especially take care of preventing diseases and health issues related to the environment. As a result, residents can cherish cleaner air, access to cleaner public spaces, and have access to clean drinking water. Cities in which tap water is not drinkable may focus on improving water and sewer systems, preventing hard water, and ensuring communities are built around grocery stores or convenience stores where clean water is readily accessible.

Diversity of Social and Community Activities
Child friendly cities are dedicated towards creating many stages for social interaction within the environment as social interaction with children from a very young age helps in developing the child's character and behavior in the community. From city festivals to smaller play groups, living in a child-friendly city can help residents participate in family-friendly activities and get to know fellow residents in safe social environments.(Berger, 2017)

Child-friendly cities offer a multitude of benefits for children and families, as well as residents of the city who may not have children or a family.



Population of children

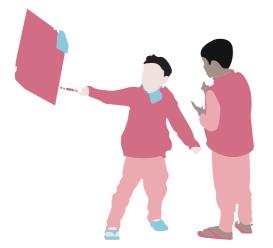
India is home to 472 million children (0–18 years) comprising 39 per cent of the country's total population. The Constitution of India accords a special status to children as deserving of special provisions and protections to secure and safeguard the entitlements of 'those of tender age'. As many as 128.5 million Indian children reside in urban areas. Children constitute 34 per cent of the urban population, and it becomes imperative that we include and address the needs of children in planning and building sustainable cities. Urban areas offer great opportunities to secure children's rights and accelerate progress. At the same time, it is essential to note that children in urban settings face a particularly complex set of challenges with regard to their development and the fulfillment of their rights.



Urbanization has significant implications on the growth and development of children, especially those living in slums, homeless children or children living on streets and migrant children. For children growing up in cities, there is both a unique mix of advantages as well as disadvantages-access to better schools, sports facilities and healthcare is often in contrast to disadvantages like pollution, lack of independent mobility, inadequate play spaces, lack of recreational/public spaces and a break-down of community support structures. (NPC, 2014)







Nurturing space.



Space for play

What is a Third place?

Third place is a term coined by Urban sociologist Ray Oldenburg and refers to places where people spend time between home ('first' place) and work/school ('second' place).

Ray Oldenburg also suggests many properties that make a good third place among them are:

- a)Entrance is free/ inexpensive
- b) Highly accessible within walking distance
- c)Frequent Visitors
- d)Comforting and welcoming atmosphere.

Third spaces in general are essential for civil society, civil engagement, democracy and to establish a sense of belonging.

Through this thesis project I would like to explore how these aspects of a third place can be adapted to design third places for children and their care givers. As mentioned by Ray Oldenburg third place is where one builds new relations, exchange ideas and have good time. Further when these characteristics are looked upon from the perspective of developing it for children then it can be described as a space comfortable and welcoming enough for children to behave freely and build new relations, a nurturing space that encourages and kindles the a child's imagination and a space that encourages children to play and be joyful.



Designing third spaces for children

Space for social interaction

Day to day engagement of children and adults in shared activities contributes to the rapid progress of children in becoming skilled participants in the intellectual and social lives of their society. (Vygotsky and Piaget cited in Murphy,1999)

For a space to allow social interaction amongst its users it must allow the users to *share an experience* which would eventually bring about the conversation amongst its users. In the present situation when the digital world prevents children and adults to interact with people in the real hence it is real important to *merge the digital and physical world.* The context of a space is extremely important in creating a public space that is socially inclusive to all hence, *the form and sense of design* is also crucial for social interaction.

"The cognitive development of children is advanced through social interaction with other people, particularly those who are more skilled."- Lev Vygotsky, a Russian psychologist, 1978



Space of play

As a result of, uncontrolled urbanization in many fast growing countries play areas have been sacrificed for other revenue generating activities not only in India but in many other developing countries there is a similar problem. Hence, children take over streets as a place of play which is extremely dangerous.

The word play and children are inseparable everyone's childhood is nurtured by play. Every child, irrespective of age, gender, race, religion, ethnicity, nationality, ability, has a right to play, leisure and relax. Research shows that children who do not have the opportunity to play, owing to their physical or psychological abilities, lose their chance to develop their emotional intelligence, self- esteem, self-confidence and independence (National Playing Field Association 2000).

Garden city planners built play spaces in the interior enclaves of super blocks, thus coming up with a solution to keep children off the streets and safe from the ills of cities (Jacob 1961). Supporting research related to children's play in cities, "Playgrounds were invented as a device for getting children off the street, away from bad influences and under the control of known socializing agents." (Hart, 2002).

Further, playgrounds severely limit play opportunities for children over a period of time. Children above 6 years of age get bored of the same central space in residential buildings. Importantly, research studies examining the use of outdoor spaces for children's play establish that children dislike being segregated away from the adults' worlds into playgrounds and that children prefer using spaces in the city for play such as streets and sidewalks (Jacob 1961).

The benefits of playing in natural environments go beyond solving the well-known problem of child-hood obesity in latest research findings to reinforce the physical, mental and social benefits of children playing in natural environments. ("Healthy Planet, Healthy Children: Designing Nature into the Daily Spaces of Childhood" by Robin Moore and Clare Cooper Marcus (2008),

Photo context: Joyful girls in their school uniform. Photograph Credit: Robert Romario

Space for nurture

Environments that foster successful development and prevent the development of psychological and behavioral problems are usefully characterized as nurturing environments. (Bigilan, 2012) There is considerable research confirming that when children are given what they need to build a solid foundation in the early years, they have more strength to deal with whatever comes their way later. Nurturing spaces for children are more important now than ever before because children are taken over by the amusements of technology and hence very rarely go out they spend most of their at home and school indoors this is particularly seen more evidently in fast growing cities in developing countries where most of them live in high rise buildings or in houses with to front or backyard to spend their time relaxing or exploring.

I want to create nurturing spaces that are beautiful; have spaces for learning, development, play (through images, colours, textures and games); and offer opportunities for imaginations to develop.



What makes a street child friendly?

Street ia a form of When designing streets for children, improved and independent mobility as well as quality public space should be the fundamental goals and outcomes. Ensure that a city's physical infrastructure, policies, programs, and overall priorities align with core principles to shape streets that are safe and healthy, comfortable and convenient and inspirational and educational.

Streets for kids

Improved and independent mobility

Children along with their caregiver should have efficient and sustainable ways to move about in the city that are reliable and predictable with minimum waiting time.

Children and youth adults should be able to move about independently with ease and be able to walk, cycle and take transit with no worry about their safety.

Spaces to pause and stay

Streets are not just a place of transit but instead it a public space where one should be able to pause and spend time.

For children and their caregiver these streets could provide opportunities for outdoor play, inspiration, personal development and interpersonal development.



Streets for children should be

Safe and healthy

Streets should be safe and have easy access to key city services. Streets must minimize life threatening conditions and promote physical and mental well-being for children and their caregivers. Safe and healthy streets have continuous and accessible pedestrian infrastructure, safe cycling and transit facilities, safe vehicular speeds, clean air, access to nature through landscape and trees, opportunities for physical activity and adequate lighting.

Comfortable and convenient

Street designs that pay attention to details beyond basic needs can encourage kids and caregivers to spend more time using streets, inviting additional trips and making existing journeys more enjoyable. Streets that support reliable transit options and travel times allow families to plan their routines more predictably.

Comfortable and convenient streets include places to sit for moments of rest or interpersonal connection, reliable transit options with legible way finding and schedules, shade and shelter suitable for the local climate along sidewalks and at transit stops and facilities like restrooms and drinking water facilities.

Inspirational and educational

While it is important to survive, children and caregivers should be able to thrive. Great streets for kids and caregivers are interesting, joyful and educational. These streets are not just for transiting between places, but are themselves a destination. It is critical for children's environments to foster learning and inspiration. Children are greatly influenced by their environments, especially in their formative years. Inspiring and educational streets are beautiful; have spaces for learning, development, play (through images, colours, textures and games); and offer opportunities for imaginations to develop. (Designing streets for kids, 2020)W



Introduces children to diversity that would give the child the chance to have many experiences.



Neighborhoods are close by and accessible.



Cities have diverse functions which is very important for a child's cognitive skill development.



Public transportation is readily available.

What makes a city child friendly?

In general, cities, as opposed to suburbs or small towns, are characterized by relatively have more of the positive characteristics that I will describe in this chapter. It should be noted that these are potential advantages.

However, on the whole, they are more likely to appear in a city than in rural or suburban areas.

- -Higher population in cities introduces children to diversity. (Michelson & Levine, 1979).
- Densities are usually greater and this has implications for the following aspects (Churchman, 1999). The number, variety and quality of public and private services will potentially be greater in terms of cultural, commercial, recreational, health, educational, psychological support, religious and municipal services.
- -Distances within the neighborhood, or within other parts of the city, may be shorter, facilitating opportunities to reach the available resources by walking or cycling.

- -Public transportation is likely to be available, and potentially may be accessible, comfortable, frequent and affordable.
- -The diversity in the people who are present in any given area offers opportunities for meeting different kinds of people and finding those who match one's interests and preferences. Furthermore, the variety of stimuli of various sorts—sensory, cognitive, social and emotional—is likely to be greater in cities than in other kinds of settlements(Gehl, 1996).



The danger of violence from adults or other children and from motorized traffic may be great



The levels of stimuli may be greater than the capabilities of the children to cope with them.



There may be a lack of open spaces and of natural areas, depending on the city



Air pollution levels are likely to be high.

There are also disadvantages and limitations on children in big cities because of the following aspects:

- -The danger of violence from adults or other children and from motorized traffic may be great (Carbonara-Moscatti, 1985; Spencer & Woolley, 2000).
- -There may be a lack of open spaces and of natural areas, depending on the city(Gehl, 1996).
- -The noise level in parts of the city is likely to be high (Stans-field et al., 2000).
- -The levels of stimuli may be greater than the capabilities of the children to cope with them.
- -Air pollution levels are likely to be high. In this regard it should be noted that the problem of air pollution is more serious for children than for adults, according to Kane (as quoted in Michelson & Roberts, 1979, pp. 430–431)

- Children are usually more physically active out of doors than adults. Many pollutants, such as lead, are heavy and settle near the ground. Because children are smaller, they are in closer proximity to such pollutants. Further, in the course of play, children are more exposed to dirt in which pollutants lodge.

Government policies that support child friendly urban spaces in India.

Within the urban realm Narendra Modi, the present Prime Minister of India, has called for special attention on child-friendly smart cities (Economic Times, 2015).

He has requested that cities incorporate elements of child-friendliness while designing the blueprint of growth. Venkaiah Naidu, Minister of Urban Development, recently said that urban planing and development must enhance talent, creativity and aspirations of children. He emphasized that children's needs be made the focus in urban planning and development and said "open spaces, play centers must proliferate in city master-plans" and that "harsh urban realities" were adversely affecting the "brain development and perspectives" of young children, particularly those from the economically weaker sections (BvLF, 2014).

Some of the key urban programs from the government of India along with aspects focusing on children are highlighted here:

Smart City Initiative

The Smart City initiative aims to provide smart features and solutions for efficient use of a city's resources, addressing the needs of all citizens especially children. The initiative has a number of features that can help make cities more child-friendly. These include: (a)Creating walkable localities; (b) Preserving and developing open spaces; (c) Promoting a variety of transport options. Citizen participation is a core feature of the Smart Cities mission and the inclusion of children in the process of decision-making is a key factor.

Atal Mission for Rejuvenation and Urban Transformation

The Atal Mission for Rejuvenation and Urban Transformation (AMRUT) mission aims at infrastructure creation within cities with a direct link to service provision. The major thrust areas for AMRUT that are directly relevant to children include:

- i) increasing the amenity value of cities by developing greenery and well maintained open spaces;
- ii) reducing pollution by switching to public transport or constructing facilities for non motorized transport.

The promotion of non-motorized transport impact children's health and development, and hence, AM-RUT's thust areas are relevant to making cities child friendly. Further, AMRUT guidelines highlight the need for green spaces, parks and recreation centers, especially for children. Some other aspects that are relevant to the child-friendly cities initiative through AMRUT activities include the following:

- a) AMRUT mandates developing at least one children park every year
- b) A robust system for the maintenance of parks, playground and recreational areas.



Indicators for CHIld-friendly Local Development (I-CHILD)

This initiative aims to promote planning and development of child-friendly smart cities in India (NIUA, 2015). NIUA has appointed Ecorys India Pvt Ltd to prepare Indicators for CHIld- friendly Local Development (I-CHILD).

The suggestions from I-CHILD that are relevant for this thesis project are as follows:

i) Integrating built environment (and changes) with physical activity interventions:

Instead of undertaking isolated efforts in improving built environment or physical activity of children, it is recommended that both are done in conjunction with each other. Changes in physical environment, such as providing play structures in schools or creating green spaces will have far more impact on children's physical activities if there is a parallel effort to influence physical activity itself (e.g. supervision and guidance by physical training instructor etc.).

ii) Designing safe routes to schools (and other destinations):

Features such as mixed land use, higher densities, and street connectivity impact travel distance or time and consequently the values associated with them (such as price). Such changes however are friendly for active modes of transport (walking, cycling) and should focus on impacting the perceptions of safety and travel experience. Multiple factors influence the decisions of parents and children to consider bicycling or walking to a school. By creating safe routes that allow the independent mobility of children to such destinations and by improving the real and perceived safety of these routes, physical activity levels and health outcomes of children can be improved. Such interventions could imply adding sidewalks, crosswalks, signage, bicycle rack and traffic calming measures.

3. Design Proposal

My understanding from all the studies that I have referred to and have mentioned here in my thesis about public spaces for children in an urban environment has been formidable than I initially anticipated for, it was especially surprising to see that there has been studies and researches to prove the immeasurable benefits of having child-friendly spaces in an urban environment and yet not many city policies adapt to these measures.

Urban spaces may vary in context and culture, in different cities but regardless of these differences the principles of designing urban spaces for children should remain the same. A city can only call itself child friendly when the children are able to safely access and fully use all urban spaces and not just parks and playgrounds. By prioritizing children in urban spaces makes them safer and more comfortable, beautiful and enjoyable for all people.

The environment where infants and children spend time can greatly influence their daily experiences and contribute to the overall health and wellbeing of both children and their caregiver (Designing streets for kids, 2020).

It is then of great importance to design spaces for children within the cities that the children regularly use along their daily commute so as to have a positive impact on the child's brain development. According to NATCO's Designing streets for Kids, these are strategies to design child friendly spaces within a city to help in a child's brain development, Reduce sources of stress, Support responsive relationships and strengthen core life skills. When these strategies are considered to design a public urban space it could influence the health of children in the city which in turn would ensure healthy future adults in the city.

In, the next chapter I propose a set of criteria that would be considered while assessing a child friendly public space. As I mentioned earlier there are varying concerns at various parts of the world regarding Child Friendly Spaces in cities. I have chosen to use the most common concerns that would cover a broad range of situations that one would come across while designing a Child friendly third space within a city. Safety for children is one such issue that is of utmost importance when spoken about child friendly spaces in cities.





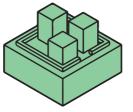
4. How to create child-friendly third spaces in diverse conditions within a busy Central business district of a metropolitan city?

To create child friendly spaces I first propose a set of criteria that would help me evaluate ideal third spaces for children. These criteria are based on my understanding from all the previously mentioned theories and studies based on child friendly public spaces. Later I use these criteria to develop a set of design tools using my design proposals as an example on how these design tools could be used to satisfy all the criteria.

Children are one of the most vulnerable users of a public space in a city due to various reasons as stated before in the previous chapters. Hence, there are many concerns when a child-friendly space is to be designed in a city to make it simple. I consolidate these concerns into criteria which are to be considered to design a *nurturing*, *socially interactive and playful* third space for children. I classify these criteria into 2 main categories: Play and learn qualities and Physical properties.



Solitary learning
Social learning
Learning from nature



Physical properties

Safety measures

Age Appropriate design

Context of the area

Play and learn go hand in hand for children. Children learn a lot through play and when play and learn elements are incorporated into public spaces along their daily commute it could benefit them significantly. According to Designing Streets for Children, children learn in different ways and some of the important or relevant ones for learning in a public space are solitary learning, social learning and learning from nature. Some kids learn best when they are alone by exploration and solving their own challenges, so by including spaces for children to spend time by themselves would help a child's **solitary** learning. Social learning is important to children in all stages of growth and brain development because children learn a lot by interacting with other people, this can be achieved by creating art pieces or static spaces that would encourage social engagement between children and their caregiver or between children. Learning from Nature children also learn a lot from observing the world around them and by providing spaces for children to interact with nature where they can observe, touch and feel the various materials and also smell nature could be a good opportunity for learning from nature.



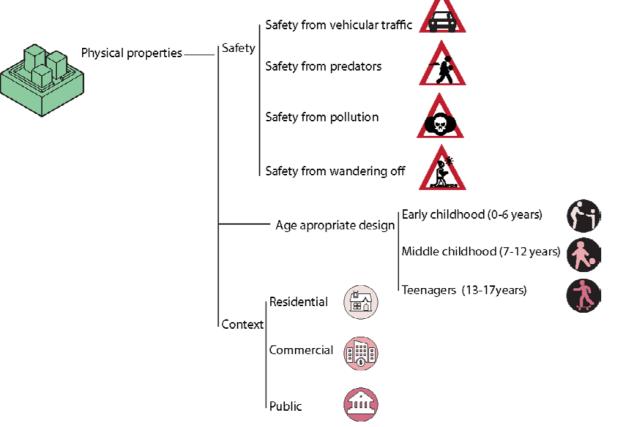
Solitary learning



Social learning



Learning from nature



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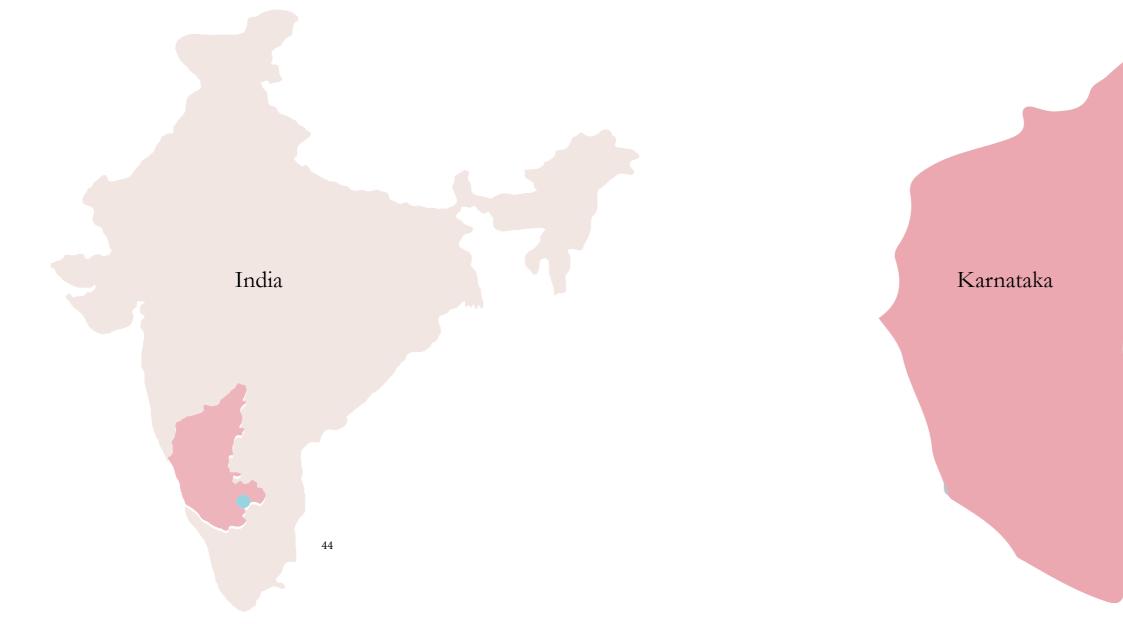
Physical properties such as safety concerns, age appropriate design elements and site context.

Safety concerns: Children are the most vulnerable of all in terms of safety hence any space to be a child friendly space has to be safe. Safety concerns varies in different regions but safety concerns for children can be classified into four different categories, the first one being vehicular traffic the most common safety hazard for children in a city, the second safety concern are the predators for children this of major concern especially in big cities of India, the third safety concern is the pollution which is a prevailing concern for anyone living in a city but also especially for children because of their height and proximity to the ground and the fourth safety concern is the chances of children wandering off on their own and not being able to orient or find their way back to their caregivers.

Site context: The context of a site is very important to understand the safety concerns and also the potential users of the space. The central business district of Bangalore is diverse in its function and can be classified into three different categories namely Residential, public and commercial spaces.

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Age Appropriate design: Urban spaces accessible to all regardless of age is crucial in designing a good urban space for children but it is also important to be aware of the needs of children of different ages and design spaces accordingly. Children can be classified into three main age groups early childhood these are children between the age group of 0-6 years of age who are with a caregiver most of the time when in public, middle childhood these are children between the age group of 7-12 years of age who are still restricted from independent movement within public spaces but are much more independent in making decisions and teenagers these are children between the age group of 13-18 years of age who are independent in their movement within the public spaces in the city.



Bangalore

Population- 12.476 million Area- 709 sqkm

Elevation- 920m above sea level Climate type-Tropical savannah Tallest building height- 153m

Major revenue generator -Motor vehicle taxes Software Export

Number of schools-Primary school- 23690 Elementary school- 24142 Secondary school- 8216 Senior school- 1497

45

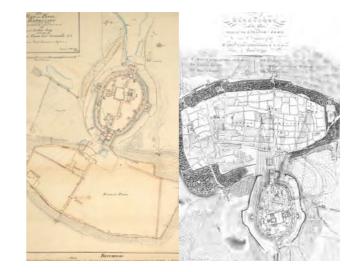
Bangalore

The Urban Nature in the City of Bangalore......

In order to obtain the optimum third place for children within Bangalore one has to understand the historical, social and economical importance of urban nature in Bangalore.

Modern Bangalore was founded in the year 1537 by an emperor called Kempegowda, it was during his rule when it was realized that Bangalore was a city on a plateau and all the water they received during the monsoon season would flow away to the regions at a lower altitude leaving the city little or no water also due to the soil type which is of low water retaining capacity and hence Kempegowda went on to build many lakes and reservoirs around the city to store water for irrigation of agricultural fields and for domestic purposes. These water bodies were connected to one another to control the excess water flow; if one reservoir was filled automatically the excess water was diverted to the next reservoir. Along with the lakes and reservoirs came the several gardens that were built around these reservoirs for recreational purposes and this created a green connection around the city. The city is known as the Garden City of India.

In the late 18th century when the British moved the capital of Mysore to Bangalore just within a few decades the city was densely planted with trees. The expansion and development of Bangalore over the years have placed severe demands on its natural resource especially water. It is during this time many Britishers settled in Bangalore still influencing the architecture and planning of the city. Many streets and localities are still named after some of the British officers who then owned the land. The city soon began to accommodate vehicles which quickly changed the infrastructure of the city.



The maps of the city from the 1791 (the left map) in comparison to map of
Bangalore from the early 1800's show the that once a widely

Avenue trees in the city play a major role in the city's flora and fauna. In the recent years thousands of trees have been felled to make way for advertisement hoardings, infrastructure constructions and other money making policies. This adversely affected the air pollution and micro-climate of the city. Through the years the species of trees chosen to be planted along the streets have altered and the importance is now given to visual effects of the tree which affects the residents of the city how have been dependent on these trees historically for fruits, flowers, medicinal herbs and fuel wood. The street trees are still one of the most appreciated urban forms in the city with its rapid depletion. There is a considerable amount of change in general flora and fauna of the city and has also increased the irritability of the commuters on these traffic ridden roads with no trees.

Parks in Bangalore are the only accessible form of urban nature; they are the source of biodiversity and social spaces for exercise, relax and socialize. The parks in Bangalore have changed over time, the ancient Indian garden was infused with elements of Islamic garden and British horticultural estate landscaping. The native parks were used as a space for consumption, worship and recreation, this was soon converted into a space that purely focused on aesthetics with water-intensive exotic plants and landscaped lawns requiring pesticides and fertilizers. Making the maintenance of the park expensive hence these parks are given out to private companies for maintenance through a tender. Due to which some of the parks are not accessible to all, even if there is no sign that indicates that only certain groups of the society is allowed inside. Some of the design features of these parks such as the tall gated boundaries and change in paving materials inside the park which is very different and well maintained than the ones on the periphery of the park have created a social stigma that it is a private area and is not welcoming to all. Making these parks underutilized even with its rich biodiversity. Some of these parks have designated play areas for children which is of modular design and has no impact on a child's imagination.



In recent news issued in a famous newspaper states that 21% of Bangalore's parks and playground inaccessible. A survey of 1,115 parks and 192 playgrounds in the Bruhat Bengaluru Mahanagara Palike (BBMP). With no adequate lighting or playing equipments these parks are not in use any longer.

Bangalore has 19sqkm of open spaces, accounting for 3% of its total area of 709sqkm. The per capita open spaces is only 2.2sqm, a far cry from the 10sqm recommended by the Urban and Regional Development Plan Formulation and Implementation (URDPFI) guidelines issued by the ministry of urban development. This would require an addition of 67sqkm of open spaces.



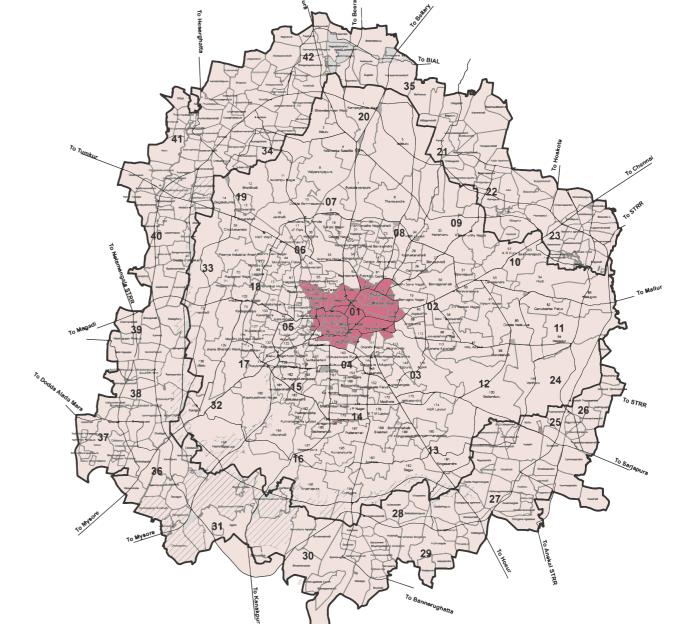
ast losing its green canopy urbanization, Bengaluru is in which are not up to the mark in many parks | have access to safe play zones

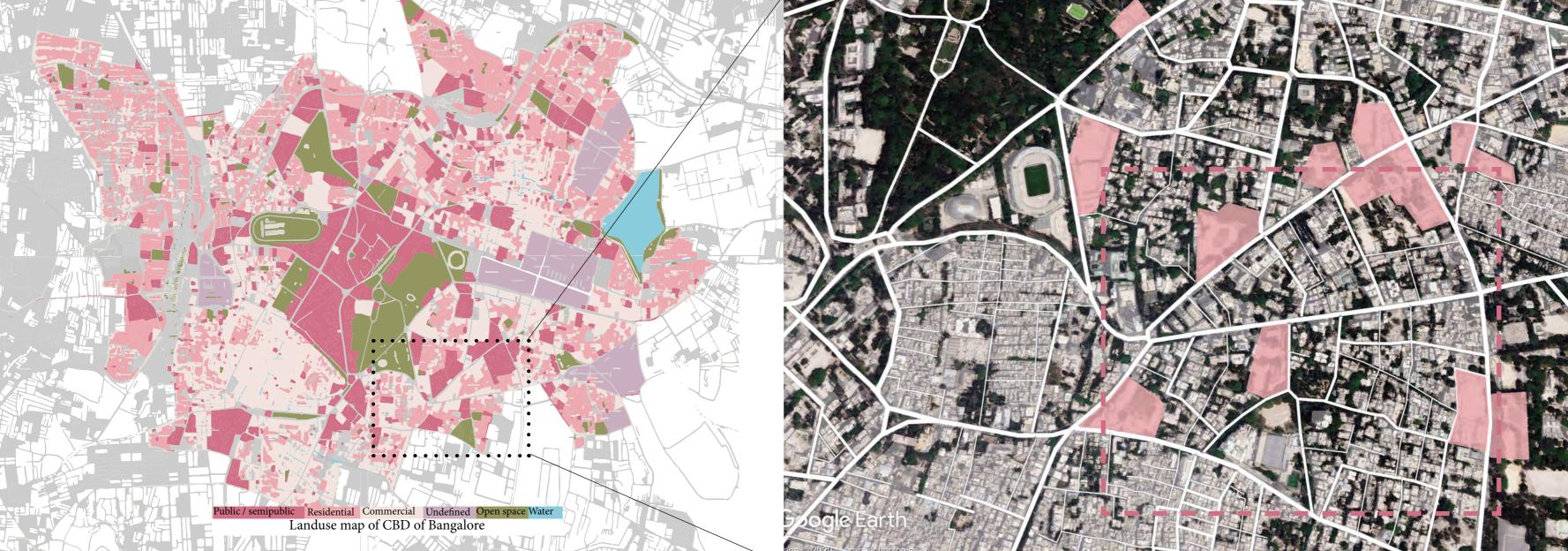
Is there a third place for children in the CBD of Bangalore? What/Where it is?

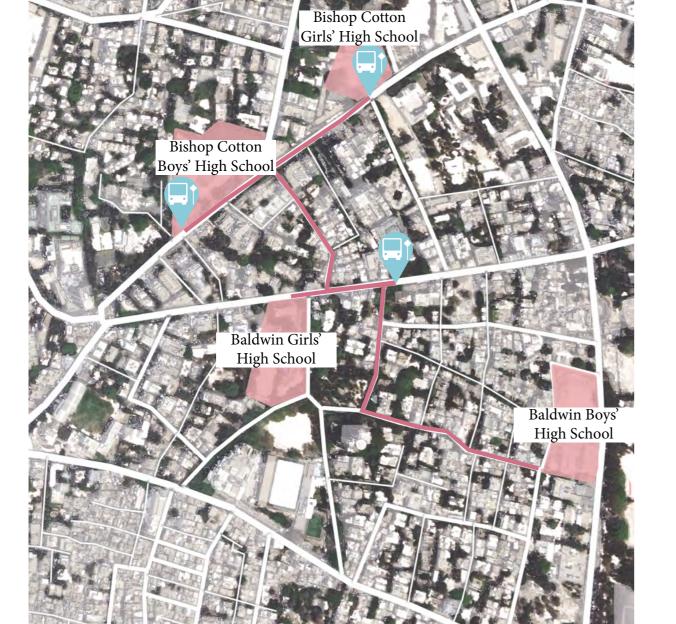
The current third places for children in the city are the parks that are only hardly ever well maintained when in a rich neighborhood. Even so in neighborhood parks a group of children above a certain age is culturally perceived as noisy and nuisance. So, we begin with the areas beyond the neighborhood, the more central parts of the city, because these are the places that differentiate between a suburb and a city, these are the environments that may offer particular advantages and disadvantages for children, and these are the areas usually not considered in terms of the needs of children. (Churchman, 2003)

The Central Business district of Bangalore is the area of 20km diameter around Vidhana Soudha. The CBD of Bangalore has all of the features of a city that are both of advantage and disadvantage like discussed previously. Here one finds the greatest concentration of offices and retail stores reflected in the city's highest land values and its tallest buildings. In the recent Masterplan for the year 2031 has sanctioned funds for making the pedestrian pathways in the CBD more accessible.

The CBD is also the only place in the city with a good accessible urban nature that children frequent to during weekends. Since it is right in middle of the city and is only easily accessible by private vehicles children need to be dependent on their caregivers. The CBD also has a high concentration of some of the old schools some of which are as old as 300 years. Hence I pick a part of the CBD, Richmond circle area for my design proposal.







How and from where do children enter the Central Business district of Bangalore to get to their respective schools?

The majority of students use the school buses that pick up and drop children within the school premises, some use private mode of transportation and the rest use the public transport which is mainly public buses. So, bus stops surrounding these schools are assumed as the entry points for children commuting to their schools. For the purpose of this thesis I look at how the students of Baldwin Girls' High School and Baldwin Boys' High School enter and exit the area. So the connection between these bus stops and the school and the schools to the proposed third spaces for children is analyzed.





Design Proposal 1: Public plaza

Location description: The site is located in a commercial area just adjacent to a bus stop and is currently used as a barren land with no particular function but is only used as a dumping site for garbage. The site is a prime location for a public plaza where children and their caregiver can go to after school and wait for the bus to arrive at the bus stop.

Functions:

- 1. Sensory garden: to help children calm while waiting for a bus aimed mostly at children who are sensitive to high stimuli from a public stimuli in a city and are in their early and middle childhood that are accompanied by their caregivers.
- **2. Food stalls**: A place grab a quick bite while waiting for the bus and also as a safety measure to have a constant eye and activities happening in the plaza.
- 3. Stepped seating area: This gives an opportunity to have different seating options within the plaza and also a space for the children to be seen by others which is generally what teenagers would want in a public space.
- **4. Seating with tables:** An opportunity for small groups to sit together and have a meal with seating options for both **children and caregivers.**

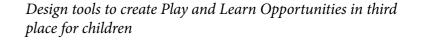


5. A communal game: A space for games that would bring about social interaction and here table tennis is accommodated within the design to have people interact with each other.

Flooring material: The flooring material is taken care to be the same as the footpath to have a continuous flow in movement making it seem like it is clearly part of the public realm and be welcoming to anyone using the bus stand.

Narrowed but free entrances to the plaza: The entrance to the plaza is narrowed and opens up to have a wide open space in the middle which creates a clear disquisition between the active and passive areas of the public space and avoids kids from wandering off into the streets.







Solitary Learning

Varied seating areas and pockets of green space gives children the option to be in a public space comfortably on their own as well.



Social Learning

Semi covered seating areas and space for a communal game would bring about social interaction in a public space.



Learning from nature

The sensory garden in the middle of the space becomes a place where kids can touch, smell and feel the different plants and learn from that.





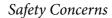
Site Context





The site is adjacent to a vehicular main road surrounded by commercial buildings. Following are the safety concerns that are to be considered when designing a third space for children in a commercial context.

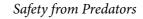




Safety from vehicular traffic

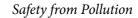
Wide pedestrian paths with well defined vehicular and bike lanes





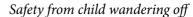
Food kiosk brings in people to the site as well as ensures that there is always some activity happening within the space so as to keep away potential miscreants from the site.





The two major pollution to the site is noise and air pollution and both can be avoided with trees and plants around the site.





With narrowed entry and exits into the space with large open space in the middle ensures that the space is clearly demarcated and the child can easily understand what is in and out for the particular space.



Design tools to create Age Appropriate Design in third places for children



Early Childhood

Varied seating areas give opportunities for children to be seated with their caregivers and socialize.



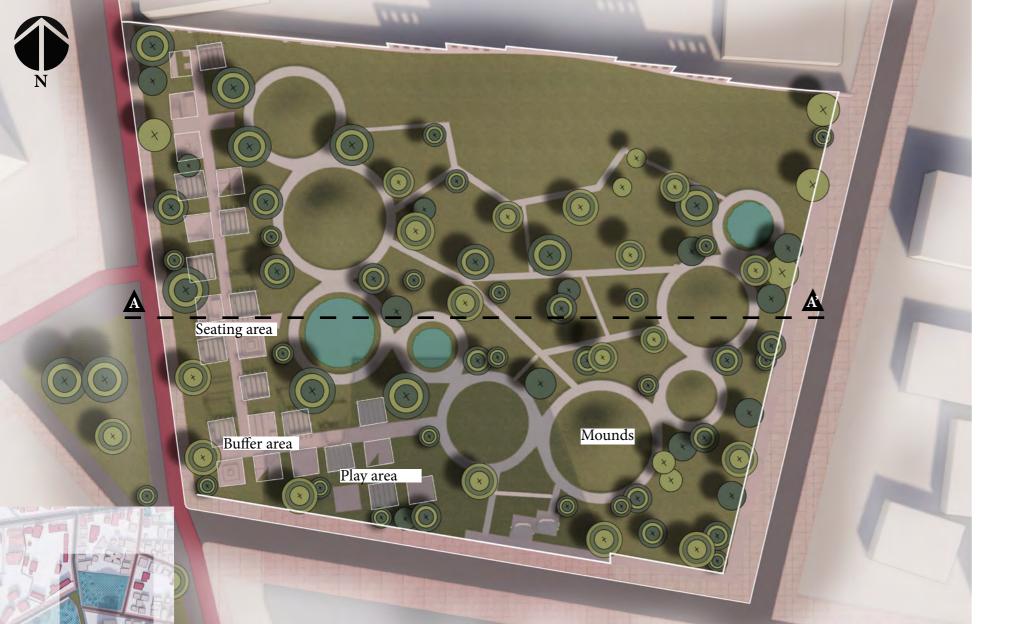
Middle Childhood

Stepped seating area and sensory garden would intrigue particularly children of this age group to play and learn from.



Teenagers

Stepped seating that is well visible from all sides of the space gives the opportunity for the teens to feel seen.



Neighborhood park

Location description: The park is located beside a residential area within close proximity to Baldwin Girls High School. The existing park is maintained by private company and have very high raised walls that compound of free flow into the park. It is not very welcoming to anyone as it is made to seem like it is not a public area.

Functions:

Mounds: Mounds of different sizes and functions are used throughout the site to bring about free range of play areas for children which would encourage children of **all age** to interpret the space according to their wish.

Semi-covered seating areas: Semi covered areas are to create areas for children of the early childhood group to make them feel they have a sheltered space and have a feeling that they have a space of their own away from their caregivers but also the height of the hedges are maintained at 500mm to ensure that there is visual access for the caregivers on their children.

Varied play areas with no defined play agenda:

These different play areas encourage children of all ages to use the play forms according to their own interpretations and a mix of these play areas along with the semi covered seating areas create a area of diverse functions for varied age groups.

Large open spaces: There are large open spaces in the middle of the park for congregational purposes for the residents living in the neighborhood.

Buffering features along the edges of the park: A buffer area along the edges of the park helps in creating clear disquisition between the active and passive areas of the public realm and helps in keeping younger children from wandering off on their own.

Users: The park is located in a residential area hence users are expected to be of all age but neighborhood parks should cater the needs of younger children with caregivers and older adults because these are the age groups that would really benefit the most to have a congregational space close to their homes.



Section A-A'



Varied play forms to encourage children to explore and observe how to use their motor skills.

Semi-covered seating area for the child and caregiver to bond in a comfortable space outside their home.



Design tools to create Play and Learn Opportunities



Solitary Learning

Varied spaces with different forms and designs that lets the child explore ways to play on their own and also help in developing their motor skills.



Social Learning

Varied Semi covered seating areas would encourage social interaction amongst the users in the neighborhood.



Learning from nature

Mounds covered by grass and trees all around the space encourages the children to explore nature on their own.



Spaces for the child to explore and learn about nature.

Mounds for the children to explore and learn varies ways of climbing, rolling, running etc.

Section through a mound.



Criteria

Design tool to create safe third spaces for children

Site Context



The site is located in a residential neighborhood. Following are the safety concerns that are to be considered when designing a third place for children in a residential setting.

Safety concerns:



Safety from vehicular

Wide pedestrian paths with well defined vehicular and bike lanes.



Safety from Pollution



Safety from child wandering off.

The two major pollution to the site is noise and air pollution and both can be avoided with trees and plants around the site.

Well defined areas that helps the child distinguish different areas and finds it easy to orient themselves in a large







Age Appropriate Design



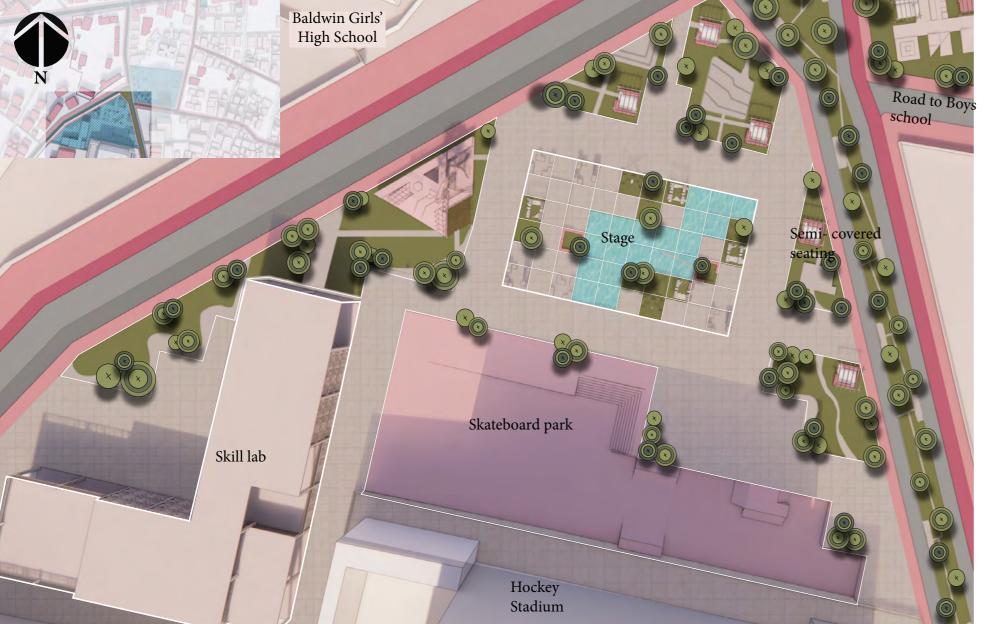
Early Childhood

Children of this age group is most likely to utilize a neighborhood park the most as it is easily accessible from their homes. Seating areas and well defined smaller spaces for children to create a bond between their caregivers.



Middle Childhood

Spaces where the child feels like they have their own private space with no supervision from the caregivers. Children this age group are more daring and want to feel like they are exploring spaces on their own. Hence, there are semi covered spaces with short hedges planted around giving the child the feeling



Teenagers playground

Location description

The site is located adjacent to a hockey stadium and across a road from Baldwin girls' high school. The site is currently barren and unkempt but children still prefer hanging out here after school hours while waiting for their ride back home. The children from Baldwin boys high school too walk down to this area after school to wait for their ride back home. Hence, making this a spot for where the children of opposite genders meet for a brief time before heading back home.

Functions

Skill lab: A three floor building with open floor plans with workshops to develop and practice special skills after school hours. This is mainly for the teenagers to go to after school hours.

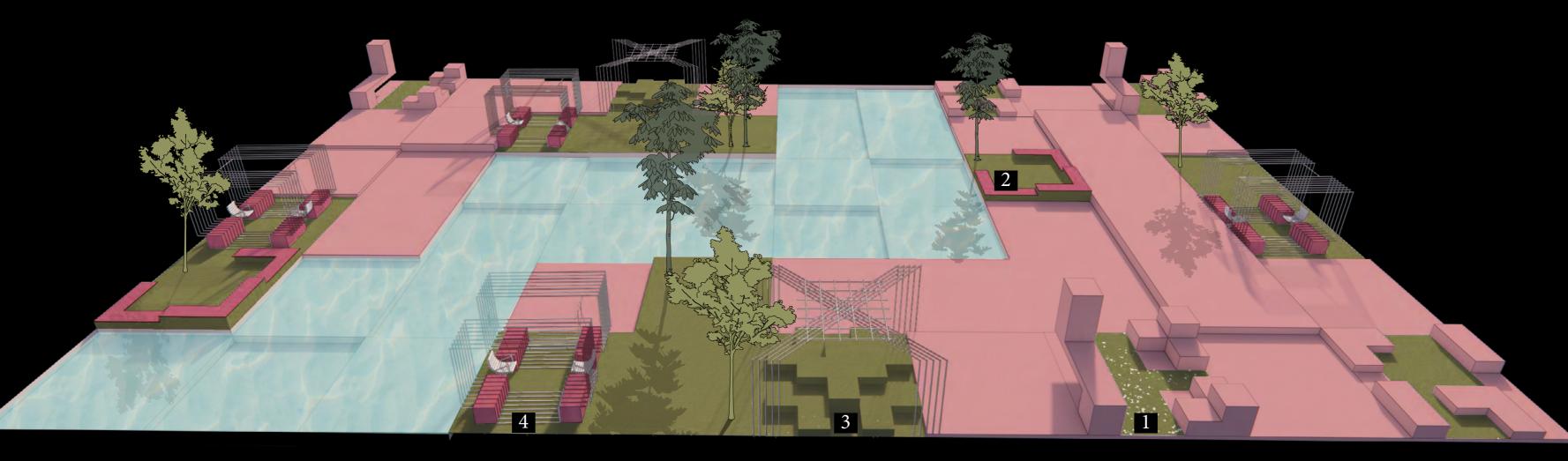
Skateboard park: Any activity with a shared experience brings about social interaction amongst the users. Skateboard park would be a great place for children of both genders to display their skill and to be feel seen.

Stage: An open area with varied staging options that incorporates varied seating, design forms and elements that make a good gathering space where one feels seen. Teenagers like gathering in groups in places where they are seen with the group.

Back-stage area: These are the green spaces that is at the edge of the park. They act as a buffer between the active street scape and the center stage. These are the spaces that would be utilized by children who want to hangout in smaller groups and not want all the attention, the trees and plants planted around these semi-covered seating area gives a sense of privacy to the users.

Users

This playground would be used mostly by children who are independent and are not dependent on their caregivers to navigate public spaces.



Stage: an open arena with varied Staging options









Site Context



The site is located adjacent to a hockey stadium and close to schools. The following are the safety concerns that come with designing third place for children in a public space.



Safety Concerns

Safety from vehicular traffic
Wide pedestrian paths with well defined vehicular and bike

Safety from Pollution

The two major pollution to the site is noise and air pollution and both can be avoided with trees and plants around the site.

Safety from child wandering off

Well defined areas that helps the child distinguish different areas and finds it easy to orient themselves in a large open space.

Age Appropriate Design



Early Childhood

Varied semi covered seating areas give opportunities for children to be seated with their caregivers and socialize.



Middle Childhood

Stepped seating area and stepped water arena would intrigue particularly children of this age group to play and learn from.



Teenager

Plenty of space to display their talent and a place for them to feel seen as well as spaces to have private conversations.





Summary of design tools to create play and learn qualities in a third place for children.



Solitary Learning

Plenty of seating area to make a child feel comfortable to spend time alone by themselves in a public space

Smaller semi-covered space comfortable enough for a child to take shelter to observe his surrounding

Varied play forms for children to explore and develop motor skills

Stage like area for one to display their talent and learn how they are perceived by their peers and other members of the society.



Social Learning

Any play form with an interesting form that allows a child to play on with their own interpretations.

Any shared experience brings about social interaction. Hence, creating spaces for communal games brings about social interaction between children.

Design forms that can hold an activity within it becomes a great place for social interaction.

Spaces for one to display their talent could let children learn from one another and exchange their knowledge.



Learning from nature

Varied green spaces let children feel and learn from the nature.

Plenty of trees would always intrigue a child to climb and interact with it. Hence, trees are always a instant play form for children to interact with.

Sensory gardens to help calm children who are sensitive to high stimuli in a public space.

Summary of design tools to create Safe environment for children in a third place.



Safety from Vehicular Traffic

Wide footpaths with clear distinguished vehicular and bike path.

Providing a low height plants and hedge along with trees in between vehicular and pedestrian path not only protects children from air pollution but also creates a green link between spaces.



Safety from Predators

Having active spaces is always people using the space hence making it difficult for miscreants.

Children need and like spaces that give them the sense of privacy. Hence, it is important to make sure that secluded corners and niches are still visible to adults.



Safety from Pollution

Children are the most would make sure that there vulnerable to pollution and the two most common pollution found in a city is air and noise pollution. This can be dealt with planting trees and plants to act both as filter out air pollution and as sound buffer area.



Safety from a child wandering off

Well defined spaces that would help a children orient themselves in a space.

Distinguished forms to allow a child remember and find way.

Clear visibility to care givers for spaces where a child would want to be alone.

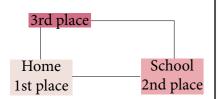
Summary of design tools to create third place for children in different site contexts.



Residential

Plenty of gathering spaces, for social interaction amongst the community members.

Lush green spaces with varied types of green spaces it is always advantageous to have quick and easy access to green spaces for children.





Commercial

Commercial spaces in cities might have more stimuli than a child can handle. Hence, design elements like a sensory garden to calm children.

Commercial spaces would have many different users. Hence, it is important to design spaces with clear visual access for the caregivers.



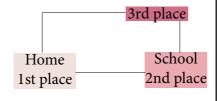


Public

Gathering spaces for children to gather in groups or with their family

Spaces designed for children of all age groups.

Spaces where a child can display their talent in front of others to understand how their talent is perceived by peers.



Summary of design tools to create third place for children in different age groups.



Children of this age group are most benefited from the interactions with their caregivers. Hence, nurturing spaces for the child to bond with their caregivers is essential.

Semi-covered seating areas for the child and their caregiver with comfortable seating areas and forms to contain the children within the space.



Children of this age group like to explore on their own without their caregivers and would often want to hide away from their caregivers. Hence, spaces that provide a sense of privacy for the children but the caregivers can still have visual supervision on them.

Play forms to encourage children explore different ways of using their body parts to climb, hang, swing etc.



Children of this group have well developed motor skills and social skills. Hence, much more attention given to design spaces that accommodate all varied needs. To develop their social skill they need public spaces where they feel safe and accepted in the society.

Stage- These are for the teenagers that like to gather in groups in space where they feel well exposed.

Back-Stage- These are for the teenagers that would like to explore and observe on their own and also for teenagers who like to be in smaller groups.

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Conclusion

I came to Sweden in the hopes of learning the lifestyle where sustainable living was practiced in a diligent way. What I was surprised to have learned the most about is how much of an impact sustainable living could have on your mental health and development. The luxury of having easy access to good public spaces was something I felt was completely lacking from my childhood and to wonder how that might have changed my upbringing inspired me to try and investigated places in my hometown. Bangalore, the city I was born and spent 24years of my life is one of the largest cities in the country with the least amount of space dedicated for children. Children take up play on the streets which is of great hazard as they can be easily involved in a vehicular accident.

The experiences and knowledge that I accumulated from my two years pursuing a masters degree in sustainable urban design in Sweden helped me look back at Bangalore from the perspective of an urban designer and analyse the city so as to understand what kind of spaces would benefit children the most.

I started off the thesis in the hopes of finding direct principles on designing public spaces for children but I learned through the process that there are not any set design principles that can be implied to a particular place to turn into a child friendly space. So I tried to consolidate my understanding from all the studies and research that I went through during this thesis to build a set of assessment tools to evaluate third spaces for children.

The global pandemic did play an important role in this thesis project and taught me how to quickly adapt to what was available and make good use of it. Designing public spaces for children and acknowledging their presence in a city as active citizens rather than future citizens would make a city not only safe but also vibrant for all.