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Child-centred Urbanscapes

- **A case study of Oslo and Yazd**

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PREFACE

This assignment concludes my master's degree in *Landscape architecture for Global Sustainability* programme at the Faculty of Landscape and Society at the Norwegian University of Life Sciences (NMBU). As a landscape architect, providing a suitable environment for our children to live in, thrive and develop is the first thing that comes to mind when I think about our planet's sustainable future. However, working for children is more rewarding than that. On the one hand, I believe we cannot move toward sustainability and have a bright future if our children, who will run the world soon, are not developed to their full potential. On the other hand, by acknowledging children's needs -as our most vulnerable citizens- and responding to them, the needs of the other members of our society will also be met. If the built environment serves the most vulnerable well and responds to their needs, it is conceivable that the rest of the population will also be satisfied with their needs.

These thoughts began to form a meaningful structure after I moved from Iran to Norway and experienced a different culture, climate and environment. Even though each culture has its specific value system that impacts parenting (Yeh et al., 2010), putting children first and helping them reach their full potential are beliefs in humans' nature. But is our living environment also a suitable and thriving place for children to reach their full potential? Children spend their time at home, in schools and the urbanscape in between. So, as a landscape architect, I decided to focus on the urbanscape to analyse its potential in children's healthy development, discover its weaknesses, and try to address them. Hopefully, this study manifests the immediate effect of urbanscapes on children's well-being and contributes to creating better ones for them. Additionally, here's hoping this study helps other landscape architects appreciate the extensive capacities of this branch in interdisciplinary subjects.

I would like to express my deep gratitude to Professor Maria Gabriella Trovato, my research supervisor, for her invaluable advice, patience, guidance, valuable critiques and continuous support. I have been fortunate to have a supervisor who cared so much about my work and never left unanswered questions or inquiries. Her immense knowledge and great experience always inspired me to push further. I also want to thank Monica Vestvik, our Senior Advisor, for always being there when I needed help. A special thank you to our professors and the department of Landscape and Society for establishing this programme and pushing it forward to get the worldwide recognition it deserves. Finally, I thank my wonderful classmates for two beautiful and unforgettable years at NMBU.

Abstract

Childhood is one of the most critical developmental stages in human life, powerfully contributing to the productivity of society at large. Although there is evidence about the influence of physiological factors on early childhood development, the effect of the physical environment is less well investigated. Furthermore, many countries exclude children from most land use planning practices. Therefore, this thesis investigates the role of urban spaces on children's well-being and development. The materials were collected using the purposive sampling method. Countries were selected based on the number of initiatives and the availability of information.

Ideas from eight scholars, six international programmes, and the aims of more than forty programmes in fifteen countries worldwide were investigated. Based on the literature review, six essential topics were identified for further exploration, of which, Spatial characteristics of the built environment, Safety, and Independent mobility were chosen for analysis in the two case studies. Observational techniques and reading of the urban space were the methodologies used for the two case studies in Oslo and Yazd. The observation was conducted as a complete observer and covert to the subjects to minimise the Hawthorne effect. Subjects' reactions to different urban space settings were collected

through field notes, maps, sketches and photographs. By analysing the case studies, it was understood that: children are attracted to spaces that provide unrestricted movement, exploration opportunities, and risk-taking activities in comfort conditions. An uninterrupted pedestrian network complemented with design features such as pausing/resting spots, visual corridors, and attractive destinations encourages children to walk more. Multifunctionality of the spaces, commercial-oriented edges, and mixed land use invite different people to urban areas and increase the perception of safety in children. Recommendations were made based on the findings.

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1. Introduction

1.1 Background

The world's population has increased by 2.5 billion in the last 30 years. By 2050 an added two billion people would live on earth (UNCTAD, 2021), of which 68% will reside in urban areas (The World Bank, 2020). It is worth mentioning that cities occupy only 2% of the land, yet more than 80% of the global GDP is generated there (Habitat III, 2016). Urgent attention to sustainable management of rapid urbanisation is so critical that it is targeted by goal no.11 of the UN's Sustainable Development Goals (UN, 2022). Rapid urbanisation can be beneficial and harmful at the same time. On the one hand, the fast pace of urbanisation growth (when appropriately handled) creates new opportunities for a better

life (The World Bank, 2014) and gives people room to use their potential and improve their economy. On the other hand, (in case of mismanagement) it can pressure available resources. Mismanagement will result in challenging situations such as emerging marginalised populations, disadvantaged neighbourhoods, unequal distribution of services, unplanned urban sprawl and the emergence of informal settlements. Global organisations like the UN mention investing in and empowering vulnerable citizens as a vital move toward sustainability and the sustainable management of the urban population. In that regard, a part of the UN's 11th goal aims to *"provide universal access to safe, inclusive and accessible, green and*

public spaces, particularly for vulnerable people such as women and children, older persons and persons with disabilities" (UN, 2015). Of this vulnerable group, 29.6 per cent are people under 18 or *"children"* as defined by the Convention on the Rights of the Child (Unicef, 1989). Therefore, a large portion of the sustainable future depends on how cities and citizens can be managed. Children, representing one-third of the urban population, are often neglected. They are citizens that are generally not heard, seen, and not (typically and honestly) included in the planning process (Unicef, 2020). This happens while it has been proven that (early) childhood is one of the most critical developmental stages in human

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life, powerfully contributing to the productivity of society at large (Irwin et al., 2007). They are the future leaders, decision-makers and professionals of communities. Their healthy and complete childhood development is crucial for the world's bright future (Board on Children, Youth, and Families, 2011). Development happens at different stages in life and different ways. However, the early stages of life have a vital role in children's development as the foundations for health, emotional well-being and life success are laid in that period (Hertzman & Williams, 2009). Although there is a notable amount of evidence about the genetic, biological, and physiological authorities on early childhood development,

the influence of the physical environment on young children's development is less well understood (Christian et al., 2015). Each person's development should be analysed where the development happens, and children are no exception (Bronfenbrenner, 1981). For them, it occurs within the context of family and friends, schools, and their neighbourhoods. Urbanscapes, and the built environments where children spend most of their outdoor time, are essential components of any neighbourhood. Despite having a significant role in children's healthy development and well-being by providing opportunities to learn, play and social interact (Prado-Galbarro et al., 2021), these areas have received the least amount of

research focus and inquiry in child development research (Christian et al., 2015). However, the urban environment must be inviting, suitable and healthy to host children and help them develop to their full potential. An environment without the desired qualities will have the opposite effect on children. For example, there is proof that different neighbourhoods have significant dissimilarities in the proportion of children who are developmentally vulnerable because of their different physical characteristics (Brinkman et al., 2013). Moreover, the benefits of creating suitable environments for the most vulnerable exceed them. This will benefit children,

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adults, and governments altogether, as experience has shown that the implementation of children's rights at the local level goes hand in hand with improved living conditions for all age groups within society (Schulze & Moneti, 2007). Many scholars suggest that children should be considered benchmarks of societies (Quintáns, 2018). Children's satisfaction should signify a healthy society, and their dissatisfaction should indicate societal problems. If a community can provide enough to satisfy children -its most vulnerable citizens- other citizens will also be satisfied (Gehl, 2019). It is highly cost-beneficial as well. Studies indicate that investing in Early Childhood Development

has high benefit-cost ratios and the best return rate of any human capital investment (Naudeau et al., 2011).

1.2 Knowledge Gap

In many countries, children are excluded from most land use planning practices (Knowles-Yáñez, 2005). One reason is that politicians are not interested in children's issues, as these topics are usually not politically advantageous. Cost efficiency is another reason, as costs are often more critical to most policymakers than the quality of children's lives in the environment. The separation between decision-makers and researchers is another reason, as research is not made readily available to decision-makers in this field. Moreover, it often can be too technical or academic for them (Marcus and Moore, 1976). Additionally, there are gaps in the research on youth and their urban spaces.

The research often needs to form standard definitions. For example, there is no unique definition of a child-centred urban space or what it emphasises. In the Global North, the emphasis is on environmental and physical issues such as improving recreational areas, developing parks and green spaces, and controlling traffic to make streets safer for young citizens. However, in the Global South, the focus is more frequently on increasing access to essential services for children (Riggio & Kilbane, 2000). The lack of standard definitions causes difficulties in monitoring the impact of different interventions and the cost-effectiveness of investments and affects result comparisons. Furthermore, there is a call for research

among earlier reviews highlighting the need for cross-country examination of the influence of the neighbourhoods' built environment features on early child health and development (Christian et al., 2015).

Therefore, this thesis will primarily investigate the effect of the built environment on children's well-being and explore what is vital for children to have in the urban space and define them. It will also explain why it is beneficial to recognise children's rights in urban spaces and design for their well-being. Next, it will investigate how the abovementioned findings can be implemented in urban spaces.

1.3 Research Goals

Investigating the urbanscape's influence on children's development and well-being, analysing different urban qualities and addressing the essential ones in creating a better urban environment for children.

1.4 Research Question

To reach the goals, the thesis is formulated to answer the main research question :

What urbanscape qualities are essential for children to thrive, and how can designers implement them?

1.5 Design of the Research Methodology

Different methods have been used to answer the research question. Influential theories, as well as available programmes and practices, were reviewed. To identify the study scope in a consistent, reliable, and objective manner, the materials were collected using the purposive sampling method. The selected scholars are from urban planning, architecture, landscape architecture, and child rights and urban activists. Scientific databases were used to identify sources on children and the physical or urban environment published in Norwegian, English, or Persian from 1960-2022. Implementations were selected. Countries for the regional and local chapters were selected based on the number of

initiatives and the availability of information. Additionally, mixed methods were used to analyse the case studies. To gain insight into the topic's real-world challenges and capture a range of perspectives, observational techniques and reading of the urbanscape methodology were used for the two case studies in Oslo and Yazd. The observation was conducted as a complete observer and covert to the subjects to minimise the Hawthorne effect (behavioural change due to an awareness of being observed) (Oswald et al., 2014). Through direct observation, detailed aspects of the subjects' behaviours were recorded as they occurred. Subjects' reactions to different urbanscape settings were collected through field notes, maps,

sketches and photographs. Having the role of an observer, it was possible to perceive children and their caregivers' actual behaviours in several urbanscape scenarios.

1.5 Design of the Research Methodology

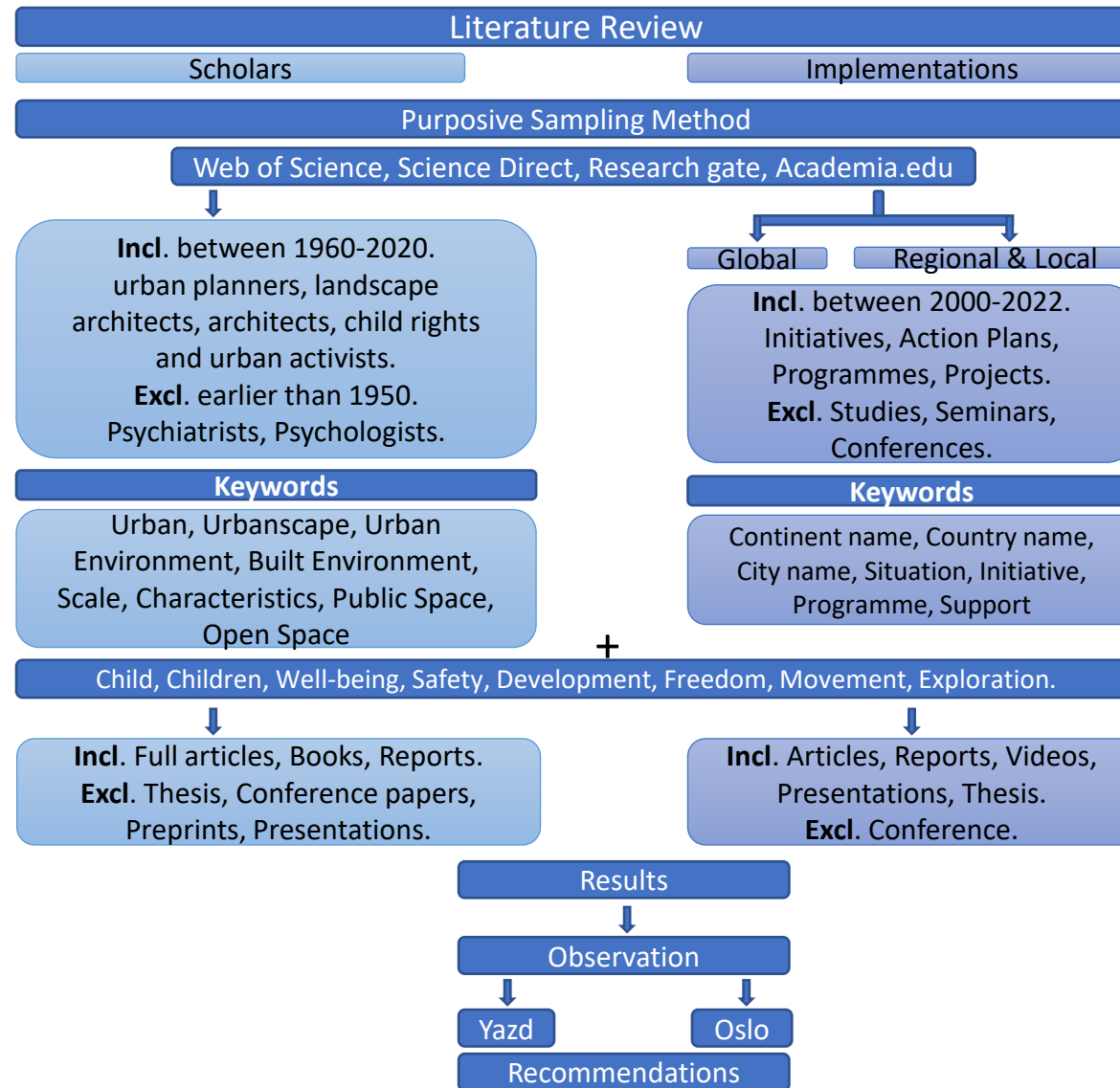


Table 1: Summary of the research methodology.

2. Literature Review

2.1 Theory

The term *urbanscape* typically refers to the appearance and layout of cities (Kaur & Tejendra, 2022). Urban areas are multiplex ties of different components and characteristics. Core components include land use, buildings, transportation systems, pedestrian networks, services, and public resources. Core characteristics include scale, size, freedom of movement and safety. These qualities influence citizens' everyday lives and well-being (Satcher et al., 2012). Records show that people who live in neighbourhoods where these qualities are compromised or nonexistent have unequal hardships, deprivation of opportunities, and a higher burden of diseases (Satcher et al., 2012).

These characteristics influence the connection between the physical environment and its users. For example, the scale of the built environment significantly impacts how people perceive the space when using it. Edmund Bacon describes this phenomenon as one of the eight involvement elements in creating a relationship between people and the built environment. He argues that attention to size and dimensions is vital when creating spaces for people. Moreover, the built environment should reflect the human scale, and its size must correspond to human size (Bacon, 1976). Attention to scale gains more weight in the presence of children. Not only do they comprehend size more severely due

to their smaller sizes, but the side effects will also be more significant for them as their brains develop. Therefore, a child-scaled design should be small, personal, and intimate (Alonso, 2017). This means urban qualities should be responsive to kids' sizes and proportions, and urban facilities should be within their range of mobility, reach and physical ability. This will facilitate their connection to the urbanscape and help them get involved with their environment. Moreover, paying attention to the scale of children in the design of urban spaces can influence their decision to go outside, explore and interact with the environment and connect with nature (Chawla et al., 2007).

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It is worth mentioning that although the focus is on children, these benefits do not limit to them. These qualities invite adults and children, resulting in more populated public spaces. The more people use the area, the safer it feels for vulnerable groups to be there. This phenomenon is called *Eyes on the Street*. It is derived from the appearance of people in urban spaces. In this concept, more people equals more eyes on children and less danger for them due to the adult's observation of the communal environment (Jacobs, 1961). Urbanscapes with welcoming features, such as the multifunctionality of spaces, have a higher possibility of adult observation. But the lack of such features

can be compensated using urban design features that can provide adult observation. A window or balcony overlooking the courtyard, a bench or sitting place in the local park, or the adjacent coffee shop windows are scenarios where adults can look over children and keep them away from possible harm. This leads to safer public spaces where someone is always in the background overlooking the children in the urban landscape (Jacobs, 1961). These observing eyes provide safety for younger people (and others), allowing them to stay out for extended periods, move freely and benefit from more activities. Safety is a fundamental quality in urban landscapes, and the lack or presence of it has a significant impact on

other urban qualities and, more generally, on the quality of life (Ferretti et al., 2019). Although safety is essential for children to be in the urban landscape and start exploring, more is necessary for them to walk farther. In the case of children, movement happens (after feeling safe to do so) when there are points of interest in an accessible range and on a walkable network. These exciting points can be playgrounds, coffee shops, malls, or other functions in an urban environment, connected via a pedestrian-friendly network of streets (Jacobs, 1961). Although these qualities promote walkability, and the concept has gained enormous popularity in recent years due to its

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potential to encourage more sustainable urban environments and healthy lifestyles, there has yet to be an agreement among scholars on how walkability should be defined and what qualities influence walkability. Earlier failing to form standard definitions was mentioned as a problem in this field, and walkability is another illustration of it. For example, by reviewing 132 documents, researchers found 63 different qualities influencing walkability (Fonseca et al., 2021). However, scholars commonly refer to residential density, mixed land use, proximity to exciting destinations within walking distance, and urban design features (Spoon, 2005). Kevin Lynch clarifies urban design features as

edges, districts, nodes, and landmarks throughout the urbanscape which affect the quality of children's presence and the way they perceive their surroundings (Lynch K.A., 1960). Exciting and stimulating destinations are another essential part of a walkable network for children, and playing has a vital role in creating one. Play is a critical part of children's development through which they learn to socialise, think, solve problems, and mature (Anderson-McNamee & Bailey, 2010). Although researchers have found clear and consistent playing patterns among different cultures, there are differences in playscapes between rural and urban environments. Modern, urbanised societies consider the natural environment remote

and dangerous for children, so specially designed playgrounds and parks are seen as more appropriate playscapes (Whitebread et al., 2012). However, many urban playgrounds (designed by adults) fail to deliver playful opportunities and are good examples of underestimating children's needs. Limiting children's activities to tidy playgrounds and downgrading play to a few predetermined movements are among the problems these urban playgrounds create. These playgrounds will remove the possibility of discovery, construction, destruction and opportunities to learn about risks and teamwork from children (Hart, 2020). Therefore, many believe play must go

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beyond these prefabricated, conventional, common and safe playgrounds (Gehl, 2019). While studies show that playing connects children with their imagination, environment, parents and family and the world around them (Anderson-McNamee & Bailey, 2010), a few examples go beyond prefabricated playgrounds to utilise this potential. Creating a play environment responsive to the sense of curiosity and discovery in children and helping them develop their risk management skills is only sometimes considered in prefabricated playgrounds. Furthermore, scholars believe that by making play too safe for children, they will not fully develop risk management and

problem-solving skills (Gill, 2007). It has been proven that not only prefabricated playgrounds fail to increase children's physical activity and mobility, but at the same time, they cause a reduction in that (Walton, 2012), the opposite of what they are designed to do. During the fieldwork, it was observed that children lost interest in revisiting their local urban playgrounds after a while. Failing to involve children and offer adventurous activities appeared to be the reason behind their lack of interest. Additionally, it was noted that children were on unbuilt pieces of land and playing in nature, where they dug a hole or built a water dam using artificial building materials and practised unstructured forms of play.

This type of play is the answer to the abandonment of prefabricated playgrounds. Adventure playscapes are a specific type of outdoor play environment that have the potential to offer an abundance of developmental opportunities for children to grow emotionally, socially, and physically (Staempfli, 2009). Although children will benefit from thoughtful and adventurous playscapes, these projects commonly face various difficulties. Obstacles such as parents' fear of injuries and the unwillingness of town officers to take responsibility for children's risky play are typical examples (Terada et al., 2018). Although these problems can be mitigated by raising awareness or informing parents

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and authorities, children do not necessarily need a specific playground to play in. They can be physically active in a playground as large as their neighbourhoods. To make this happen, the urban context has a valuable role. The urban context is broad in definition. It includes the physical surroundings, infrastructure, built form, governance structures, and cultural, social and economic environment of the urban landscape. Additionally, the urban context can include the community vision for the area and preferred future character, form and function (Designing Buildings, 2021). This definition illustrates how citizens get involved with contextual design approaches and can influence decisions.

However, despite the benefits of contextual urban designs, in modern urbanisation, the existing context has predominantly not been preserved or adequately considered (Højriis et al., 2014). Edward Relph believed in the spatial context of the urban landscapes and its contribution to creating a sense of belonging to the place (Relph, 1976). Attention to these qualities turns a neighbourhood into a playground for children where it is suitable for them to see, hear, taste, smell, and touch everything and navigate the environment, which is contextually designed responsively to their needs, scales, and priorities (Chawla et al., 2012).

2.1.1 Summary

Table 2 summarises the critical points and characteristics discussed in this chapter. The theories on child-centred urban landscape can be categorised into eight headings, as shown below.

	Kevin Lynch	Louise Chawla	Edmund Bacon	Jane Jacobs	Jan Gehl	Edward Relph	Roger Hart	Tim Gill
The effect of the built environment (Spatial Characteristics)		■	■		■	■		
Contextual Design	■	■	■			■		
Play					■		■	
Children as benchmarks	■							■
Participation		■	■				■	
Social interactions				■	■			
Safety	■			■				
Independent Mobility				■	■		■	■

Table 2: Summary of the theorists' main objectives

2.2 International and National Programmes and Initiatives

In this chapter, the implementations of several child-related initiatives and programmes are reviewed. After discussing the relevant theory, reviewing these initiatives will exhibit the transition of theoretical knowledge into practice. Moreover, it offers an opportunity to get familiar with different obstacles that projects face in the implementation process. Although these initiatives aim to improve various aspects of children's well-being in urbanscapes, their techniques and areas of intervention are diverse. It ranges from providing shelter and sanitation for children to enhancing the quality of their education, play and the air they breathe. These initiatives will be presented on three

scales: global, regional and local. Global initiatives represent international actions run and supported by the private sector or international organisations like the UN. These are large-scale actions such as the *Child-friendly Cities Initiative*, which have been adopted in many countries worldwide. Regional and local initiatives represent country-wide and municipality-wide actions. These are generally smaller-sized actions initiated by governments or private sectors.

2.2.1 International Actions

2.2.1.1 The Right to the City

The Right to the City

The Right to the City (RC) concept was primarily introduced by Henri Lefebvre, aiming to rescue the citizens he described as the main elements of urbanscapes (Lefebvre, 1967). He believed this concept is a right for people to change themselves by changing their city, which is one of the most precious yet neglected human rights (Camargo, 2016). Later, The United Nations Convention on the Rights of the Child (CRC) redefined this concept as a child's opportunity to participate in local governance (Cushing & Vliet—, 2017). The idea later became one of the main bases for the formation of Youth Councils

around the world. Today the Right to the City is promoted by Youth Councils to empower children with leadership skills and allow young people to discuss their current issues (Cushing & Vliet—, 2017). The programme asks children for solutions to their problems and facilitates children's contribution to improving the community where they live, study, or work (Youthcouncils, 2022). RC includes all the civil, political, economic, social, cultural and environmental rights, which means it covers a broad range of topics concerning children, from social security and public health issues to cultural plurality and respect for migrants (Samal, 2022). Youth Councils have successfully promoted this right through

child-related initiatives and reached different regions of the world. For example, there are approximately 1200 local Youth Councils for younger children, ages 9–18 years, in France practising various aspects of RC (Cushing & Vliet—, 2017). This is a noticeable achievement because it shows a program's flexibility and tolerance, which increases the likelihood of its spreading and, consequently, the recognition of children's existence in urban areas (Brown et al., 2019).

2.2.1.2 The Rights of Children

The Rights of Children

The Rights of Children (CRC), signed and agreed upon by world leaders in 1989 at the UN, is the most widely recognised human rights treaty in history (Hammarberg, 1990). Due to its international recognition and fundamental definitions of children's rights, it has inspired governments to change laws and make policies favouring children's healthy development. It is the background to many child-related actions, plans, and initiatives (Višnjić-Jevtić, et al., 2021). The convention has 54 articles about children's rights and how adults and governments should work together to ensure that all children get all

their rights. CRC covers a wide range of topics, from providing children (everyone under 18 years of age) with their fundamental rights to giving them the right to decision-making. However, the comprehensive coverage of topics means the convention needs to explain each case thoroughly, and the commonly used abbreviations for those topics can potentially diminish their impact. For example, initiatives should consider four key elements of space, voice, audience and influence for conceptualising Article 12, which says: *Children have the right to tell what they think should happen when adults make decisions that affect them* (Lundy, 2007). The CRC articles are also reflected in

children's environmental studies to describe the environment's important role in children's development and its impact on their well-being (Clark, 2004). Currently, many countries taking steps towards recognising children's rights and their presence in the built environment are initiating programmes based on this convention's articles.

2.2.1.3 Child-Friendly Cities

Child-Friendly Cities

In 1996, a few years after the recognition of the people's rights to the city and the rights of children, the *Child-Friendly Cities Initiative* (CFCI) was launched by UNICEF. As an international political trend, CFCI aims to promote children's presence in cities, improve their well-being in urban areas, and implement children's rights at the local level (Schulze & Moneti, 2007). CFCI is a system of local governance and is significant in enhancing children's social and communal interactions with each other within their physical environment and with the decision-makers. The initiative has been developed to ensure that city

makers keep children's interests in mind and can address the crisis of urbanisation and children's rights (Riggio, 2002). This initiative is the most widely recognised programme favouring children's well-being in urban spaces. Many countries have adopted CFCI's policies or at least have made efforts to get recognised by the CFCI committee. The collective and systematic aspect of this initiative makes CFCI highly adaptable. It facilitates the government's transition into a child-friendly one by creating local child-friendly functions, processes, and goals. In that regard, the child-friendly city initiative is dependent on child-friendly governance to support the programme so that it becomes feasible to locate city potentials and

opportunities where children can participate or benefit (Riggio, 2002). Participation is the cornerstone of this initiative. It encourages cities to support and engage with children, young people, and their families in meaningful participatory processes that acknowledge the significant role children can play as leading protagonists in the reformation of their cities (Malone, 2015).

2.2.1.4 Street For Kids

Street For Kids

The Global Designing Cities Initiative (GDCI) launched a multi-year programme called *Streets for Kids*. This programme aims to develop guidance and promote street design ideas favouring kids of all abilities. Design ideas to create safe and enjoyable urban spaces for children to learn, play, and move freely around a city (GDCI, 2018). It is supposed to inspire leaders, inform practitioners, and empower communities to shape safe, healthy, comfortable, convenient, inspirational and educational streets for children (NACTO, 2020). Street for Kids has ten design tips for creating such streets.

Thinking from 95 cm, disincentivising private vehicles, increasing transit reliability, building wide and accessible sidewalks, adding spaces for play and learning, providing safe cycling facilities, improving pedestrian crossings, lowering speeds by design, adding trees and landscaping and prioritising children in policies (NACTO, 2020). These recommendations have been implemented in different projects. For example, in the *Urban Thinkscape* project in Philadelphia, USA, an empty lot adjacent to a sidewalk has been used to create pause and play space for children. A study found a significant increase in conversations between caregivers and children and the number of families using the space from 2.2

per cent at the pre-test to 36 per cent at the post-test (Robinson, 2021). In 2020 the program's committee ran the initiative in twelve cities across the globe and published the results for the governments (and the public) to adopt and gather information and feedback. For 2022, the committee has invited sixty changemakers from twenty cities worldwide for their most comprehensive global implementation (GDCI, 2018).

2.2.1.5 Learning Landscapes

Learning Landscapes

Learning Landscapes is a programme that aims at transforming a child's typical day into a fun and educational experience. It helps them develop better by concentrating on the potential of schoolyards and intends to improve children's well-being through learning (Learning Landscapes, 2012). The programme asks: "how we can reinvent everyday experiences as fun and learning opportunities that organically prompt the kinds of interactions that help children thrive" (Golinkoff, 2015). To answer this question, the Learning Landscapes programme has targeted elementary

*schools. Since 1998, Learning Landscapes have transformed ninety-six elementary schoolyards into attractive and safe multi-use parks tailored to the needs and desires of children and their communities (Learning Landscapes, 2012). Playing has a vital role in a child's development, and so has the interaction with others, nature and exploring the environment (Irwin et al., 2007). This initiative combines these concepts with the target children and their community's demands and designs schoolyards for them. Additionally, they created a network of redesigned schoolyards called the Action Network. *Active Learning Landscapes Action Network* infuses the best learning science into*

initiatives to build strong cities and help all children to reach their potential (PLL, 2015). This initiative covers children's everyday experience in urbanscapes and tries to enrich play with education and contrariwise. This initiative responds to the common and uninteresting playgrounds problem discussed earlier. It separates itself from conventional playground builder crowds and tries to make children's everyday presence in the urban landscape an informative and instructive active learning experience.

2.2.1.6 Urban95

Urban95

Urban95 is an initiative by the Bernard van Leer Foundation that focuses on changing the urbanscape qualities that shape the first five years of children's lives (Watanatada, 2018). It puts the concept into perspective by asking a simple question: *"If you could experience the city from an elevation of 95 cm – the height of a 3-year-old – what would you do differently?"* (Leer, 2019). This global programme aims to create healthy, safe and vibrant cities for the healthy development of young children and engages with local communities in the planning, designing and managing phases.

Among the qualities shaping the first five years of children's lives, Urban95 targets the urbanscape elements and characteristics such as the availability of public spaces and neighbourhood mobility, the two areas where impacts on child development are significant but less well understood (Watanatada, 2018). Designing more walkable neighbourhoods suitable for family needs and increasing the number of public spaces and their proximity to residential centres are examples of their implementations (Leer, 2019). Moreover, to make the urbanscape more suitable for children, Urban95 seeks to redesign and scale down the built environment's features to their physical capacities (LaForge, 2019).

The Bhubaneswar sensory park in India is an example of Urban95's design philosophy. The public park is designed for differently-abled children and has components responsive to their physical capacities, meant to keep them safe while they spend time there (Watanatada, 2018).

2.2.1.7 Summary

Although these were only a small number of programmes initiated worldwide, the effort they have made to improve children's well-being worldwide and their footprint on this subject cannot be underestimated. Moreover, these programmes' similarities and outcomes are valuable guidelines that can be studied for current and future child-related initiatives. The attention to children's primary rights is significantly similar between the programmes. Addressing issues such as providing shelter for homeless and street kids, access to food and drinkable water, and safety always comes before addressing children's secondary needs, such as providing education opportunities, a sense

of belonging, and social relations. Also, the reviewed programmes commonly highlight physical activity's vital role in children's development. Although it is assumed that the public is generally aware of the health benefits of physical activity, these programmes endeavour to enrich physical activity with learning. The educational potential of children's play provides various design opportunities for this purpose.

2.2.1.7 Summary

	Safety	Independent Mobility	Right to Play	The effect of the built environment (Spatial Characteristics)	Participation	The necessity of social interactions	Contextual Design	Education
Street for Kids	■	■	■	■				■
Learning Landscapes			■		■	■		■
Right to the City	■	■			■	■	■	
The Rights of Children	■			■	■			
Child Friendly Cities	■	■	■	■	■	■	■	■
Urban95		■		■				

Table 3: Summary of the initiatives' main objectives

2.2.2 National and Local Actions

In this chapter, local and regional programmes and initiatives are reviewed. These programs can be contextualised adaptations of the reviewed global initiatives or regional programmes initiated by governments or the private sector. This chapter aims to highlight the role of context and the importance of working for children at the local level as it will improve living conditions for every citizen (Schulze & Moneti, 2007). Moreover, this chapter illustrates each region's priorities, necessities, strengths, weaknesses and the flexibility of global programmes when adopted. In this chapter, each continent is presented with three countries and each country with a few examples.

As discussed at the beginning of this paper, the examples are chosen based on their number of child-related initiatives and the availability of information. It should be noted that the scope of this thesis only allows for reviewing some initiatives in some countries around the world, and making selections is inevitable. Therefore, even though these reviews give a general understanding of the children's well-being, they should not be considered a conclusion for the whole continent.

2.2.2.1 Africa

Africa, formed by nearly sixty countries, is the world's second-largest and second-most-populous continent (Sayre, 1999). Africa is considered within the Global South categorisation. The phrase "*Global South*" refers broadly to Latin America, Africa, most of Asia and some regions of Oceania. It is one of a family of terms, including "*Third World*" and "*Periphery*," that denote regions outside Europe and North America (Global North) (Dados & Connell, 2012). Therefore, this continent generally needs a high degree of flexibility and tolerance from any global initiative. For example, access to information in the region is a challenge for research purposes and initiating programs.

According to the IFC, only twenty-two per cent of the continent has access to the internet (IFC, 2017). Furthermore, documents and resources in most African countries are only available physically and not accessible on a central system. The leading objectives of child-related initiatives in Africa are the distribution of basic needs and awareness creation about violence against children (iMEDIATE Development Communications, 2010). Creating awareness is usually done through teachers and online platforms. In Africa, with no internet access and the lack of possibility of conducting online educational courses, it is nearly impossible for programme leaders to reach the remote areas of this vast continent.

Besides, the lack of access to information, especially statistics, makes planning more challenging. It is important to note that the cases reviewed in this section do not represent the needs and demands of all African children.

2.2.2.2 South Africa

CFCI is the most notable initiative regarding children and urban landscape in South Africa. Johannesburg is the first city in Africa to adopt the Child-friendly cities initiative. The CFCI is a system of local governance committed to fulfilling children's rights and protecting their healthy development, and this systematic approach makes it flexible and less demanding to adopt. In South Africa, statistical information regarding children is limited (as it is in the whole region). The accessible data is available only at the provincial level and does not explicitly relate to children (Kola & Kimmie, 2002). Therefore, the CFCI in South Africa has prioritised infrastructure building. At this level, helping local offices collect

information in a centralised manner and digitising physical data are among the tasks. In addition, the initiative has targeted informal settlements and children's health problems regarding nutrition and childhood illnesses (Kola & Kimmie, 2002). Although what CFCI is doing in Johannesburg is preliminary work and not directly related to children in urban landscapes, it is essential for the future developments of this programme and other initiatives. Albeit targeting the nutrition condition of children is not directly mentioned as one of the initiative goals, it is impossible to dream of a flourished urban landscape with unhealthy children. CFCI has successfully addressed health-related problems by getting help from a

smaller-scale initiative, working with children and nourishment (Department of Health and Wellness, 2019). The child-friendly cities initiative in South Africa is a successful example of challenges and constraints by adapting to the local environment and utilising the available facilities.

2.2.2.3 Mozambique

More than fifty per cent of Mozambique's population is under eighteen (CIA, 2022). Subsequently, any national child-related programme will affect half of the country's population. This magnifies the impact and importance of such programmes. To implement any programme at this scale, governments need a centralised system which Mozambique does not have. Therefore, to create a centralised system of governance, the Mozambique government has initiated a pilot project to encourage all the country's municipalities to join the *National Association of Municipalities of Mozambique* (ANAMM) (Salimo, 2020). ANAMM - in collaboration with a local agency - is implementing a pilot project to

support municipalities in developing local policies on children's well-being in urbanscapes and rural parts of the country (Rossi, 2017). Based on the country's current challenges, the project prioritises children's education, nutrition, and participation in decision-making (Rossi, 2017). More than 18,000 children participated in the project and gave ideas about their living environment and problems and mapped places where they meet each other, play and have activities (UNICEF, 2021). The project has successfully adopted UNICEF's reporting tool for Mozambican children through which they express their opinion on their problems. It is filling the gap between children and decision-makers. Children's

participation is integral to most initiatives in Africa, and Mozambique is no exception. In that regard, ANAMM has facilitated this conversation by putting child representatives in municipalities to help transition children's ideas to the planners' desks. Children's problems must be seen from their point of view, their opinions and solutions to their problems must be heard, and children's desire to have conversations with the authorities must be answered.

2.2.2.4 Rwanda

Rwanda implemented policy actions aimed at improving children's health and well-being twenty years ago when the country was in its early stages of recovery from the Rwandan genocide (Ciani & Giannelli, 2013). In the Global Actions chapter, the *Rights of Children Convention* was referred to as the foundation for many other initiatives. Rwanda has started adopting some of this convention's guidelines on recognising children and their fundamental rights, such as the right to safety, education, and health (UNICEF, 2017). Furthermore, with the help of UNICEF and to improve children's well-being in urbanscapes, the government has targeted childhood education, sanitation, and

child-friendly approaches to juvenile justice (Mudakikwa, 2021). Rwandan children also suffer from poverty, which forces them to migrate from rural and marginalised areas to Kigali, the capital. Domestic migration is a significant contributor to the problem of street kids in Rwanda (Kayiranga & Mukashema, 2014). To address the issue, a Rwandan non-profit organisation named *Children's Voice Today* (CVT), with the support of the Save the Children Organisation has initiated a project called *Preventing and Responding to Unsafe Rural-Urban Migration of Children in Rwanda* (UMCR). The project aims to reduce the number of children on the streets, prevent harmful labour and provide a violence-free

working environment for children with the support of the government and stakeholders (CVT Rwanda, 2019). Rwanda demonstrates a good illustration of taking advantage of international aid to run its domestic projects. Although what has been implemented is considered preliminary compared to the more privileged countries, the key is the systematic approach to problems. Rwanda has a long way to go, but this country's combination of local and global initiatives is remarkable.

2.2.2.5 Americas

Americas is a vast continent stretched from north to south. Its geographical expansion and the unevenness in the current state of its countries have resulted in different initiatives and programmes related to children and urbanscapes throughout the continent. While in North America, children are more involved in programmes and initiatives targeting problems beyond their basic needs, children in Latin America are fighting for their fundamental rights (NACTO, 2021). In the North, children are involved in climate-change-related actions or initiatives that turn streets into playgrounds. In the South, children are demanding their fundamental rights and challenging violence, street safety and the

recognition of their presence in urbanscapes (cidh, 2002). Although this can be considered a generalisation, we can compare this region's initiatives against Maslow's *hierarchy of needs* theory. The theory says human needs can be divided into five levels: physiological, safety, love/belonging, esteem and self-actualisation. Each level activates once the needs in the previous levels have been met (Zhang et al., 2019). Reviewing this region's programmes, it becomes clear that until the primary needs of children are answered, going after the secondary needs is illogical and impractical and will fail due to the lack of the necessary infrastructure.

2.2.2.6 Brazil

It is estimated that half of Latin America's street children live in informal settlements in Brazil, where they are exposed to severe poverty, violence, and drug-related issues (Lusk, 1992). Additionally, the report *Scenario of Childhood and Adolescence in Brazil* shows that more than 40% of children in Brazil live in poverty, of which 5.8 million live in extreme misery and 4 million live in emergency conditions in informal neighbourhoods (Lescano, 2018). To tackle the situation and improve children's well-being, the *Favela-Bairro Upgrading Programme* was launched in 1995 in Rio de Janeiro. The programme can be considered Latin America's most recognised urban upgrading

initiative (Brakarz & Aduan, 2004). Favela-Bairro targets Rio de Janeiro's informal settlements and its vulnerable and marginalised citizens, especially children. It aims to integrate slums into the legal city by providing access for the population of the favelas to basic urban and social services such as shelter and education and preventing them from forced labour and violence (Castro, 1999). For example, through this programme, children aged 0-6 are getting assistance in educational centres located inside the favelas (informal neighbourhoods) and children aged 7-14 attend an additional after-school program called *Oficina da Criança*. This programme tries to improve children's learning

performance and reduce child labour (Brakarz & Aduan, 2004). Favela-Bairro has received national and international recognition because it is an example of efficient state intervention in urban planning through government investment (Castro, 1999).

2.2.2.7 Colombia

In recent years Colombia has acquired a significant commitment to children's rights. It has included all the rights of the UN Convention on the Rights of Children (CRC) into its law and stated their prevailing character for the protection of its children and youth (Bernal et al., 2019). However, Colombian children still suffer from poverty, lack of education, and street violence. Moreover, daily exposure to armed conflicts around them has resulted in many child casualties over the years (Humanium, 2014). To address the issue, different initiatives are exercising protection and prevention methods to keep children from getting exposed to armed groups or even joining them.

Children Change Colombia (CCC) is an initiative focusing on the three most urgent areas: recruitment into armed groups, gender and sexual-based violence, and exclusion from education. (Bergmann-Chornik & Rodriguez, 2021). Although CCC tries to minimise children's exclusion from education, school dropouts are nevertheless high in Colombia. Additional programmes, such as the *Save the Children Colombia* programme, also target these issues. The programme promotes access to quality education for the most excluded children by strengthening the capacity of school management systems, training teachers and students, strengthening the links between families, and reducing unusual behavioural

changes in children (Collins & Sciot, 2022). A further example of this work is the Territorios Amigos de la Niñez (TAN) programme. The initiative started in 2016 and targets nutrition consumption among the youth, violence prevention, and education. TAN won the Cities Inspire Awards in 2021 (UNICEF, 2021). Colombian initiatives have sought to create a strong foundation for their children by recognising their fundamental rights and protecting their well-being which in the long term will lead to additional programs that provide for children beyond just their basic needs, addressing issues such as freedom of movement and the quality of play.

2.2.2.8 USA

It is estimated that 73 million Americans are under 18 (Puzzanchera et al., 2021). In the US, many child-related initiatives aim to improve the educational system and find new strategies to eliminate discrimination among children and distribute urban services evenly across them (Stephens, 2012). *New York City's Children First* is an example. Despite being a local-scale initiative, it has influenced many others. The initiative focuses on schools as sites where changes happen. It has successfully empowered students at the city's most disadvantaged schools by changing the city's budgeting and teachers' distribution systems for schools (Kelleher, 2014). In 2019, Child-Friendly Cities was initiated in

four American cities to fight discrimination further. The goal was to provide equality in healthcare access and the distribution of green spaces and urban services (UNICEF, 2019). Before that, in 2014, the *Streets for Kids* programme was initiated in several cities across the country, aiming at creating safe and enjoyable streets for kids of all abilities to learn, play, and move around a city (NACTO, 2021). This concept targets discrimination elimination from another angle. While the earlier-mentioned programmes were more occupied with income inequalities among children, the Street for Kids programme targets physical differences and disabilities among children and fights for accessible streets for children

with disabilities. Street Children is an example of collaboration between small-scale initiatives and influential organisations. The initiative is supported by *Childhood USA*, which evaluates, monitors, and reviews project applications from other organisations and provides funding for child-related programmes (Childhood-USA, 2022).

2.2.2.9 Asia

Asia is the world's largest and most populous continent. Each region of this continent has its characteristics and specific social, cultural, political, and economic situation. Generally, workshops on media literacy, journalism, and online platforms in Asia are well-received in child-related programmes. Peer mentoring programmes empowering children to educate adults are also popular in this continent (UN, 2022). However, this cannot be seen everywhere on this continent. For example, in many Middle Eastern countries, social protection systems remain limited compared to East Asian countries (Bilo & Machado, 2018).

Therefore, the reviewed cases are chosen from regions with the highest children population to present the dynamic situation of this continent. It is projected that by 2030, only in East Asia, more than 800 million children will live (UNICEF, 2022). On the other hand, the Middle East region has not only one of the most significant proportions of children under 18 compared with developed countries, but children are exposed to severe threats such as forced migration and domestic conflicts (Snoubar & Duman, 2016).

2.2.2.10 Japan

Japanese children benefit from several local and global child-led initiatives. The Japanese model for the Child-Friendly Cities Initiative (CFCI) was launched in October 2018. Children's participation and a child-friendly legal framework complemented by a city-wide child rights strategy are some of the essential objectives of this initiative (Mikami, 2021). But for Japanese children, paying attention to their well-being also happens outside of these initiatives. It has a long history in Japan, leading to Japanese children ranking among the children with the highest independent mobility in urbanscapes, especially in the Tokyo Metropolitan

area (Drianda & Kinoshita, 2011; Shaw et al., 2015). It can be clearly understood that safety has a significant role in children's freedom of movement, which is achieved through governmental and local actions in the Japanese setting. While Japanese urban planners invite children from the youngest age to exercise their freedom of movement by designing urbanscapes suitable for their limitations, the government provides free safety kits so that the parents feel safer to license their children more unsupervised activities (Weedy, 2022). Furthermore, there is another layer of local safety to this. With the help of the local schools, Japanese parents have created small teams of

supervising parents who look after the neighbourhood's children (Drianda & Kinoshita, 2011). CFCI in Japan has taken this opportunity and focused on building a network of these child-friendly neighbourhoods and communities to expand the safety coverage even more (Mikami, 2021). The Japanese model of providing freedom of movement for children highlights the vital role of safety and shows how it should be provided on different scales. From national to regional and local scales.

2.2.2.11 Sri Lanka

Sri Lanka has an estimated child population of 6.2 million and a total population of 22.2 million. The country has made notable progress regarding children's well-being with universal child immunisation, low rates of mortality, high rates of enrolment in education and a high percentage of the population with access to safe drinking water (Laryea, 2022). Sri Lanka started from the bottom by analysing its strengths, weaknesses, and potential. It is getting advocacy and technical support from international organisations such as UNICEF in creating legal child-protective frameworks (Bhatta et al., 2014). These legal frameworks have resulted in local and international programmes regarding

children's well-being in the country, such as UNICEF's *Child-Friendly Cities Initiative* (CFCI). Initiated in 2021, CFCI focuses on improving the physical built environment and targeting problems related to education, safety, protection, children's play and leisure (UNICEF, 2021). However, despite introducing new laws and having various child-friendly initiatives, child abuse is still a problem in the country, and different programmes have tackled the issue in recent years (De Silva, 2021). Reviewing the Sri Lankan children's situation, the lack of resources is visible. Many of these programmes face common problems, such as the lack of adequate funds, limited monitoring mechanisms, and the

inadequacy of trained personnel to handle different components of childhood development programmes that impede their successful implementation (Wickramaratne, 2016). Although Sri Lanka is on a good path, its long-term goals should be strengthened with financial support and trained staff in child-focused activities.

2.2.2.12 Iran

Iran is among the few countries in the Middle East with a legal guarantee of social protection for children, extending it to an adequate standard of living (Bilo & Machado, 2018). However, despite the efforts to improve social security for children, the country has some issues, such as the growing number of street children. Although the increase in street children results from various socioeconomic factors, the country's continuing currency devaluation has a significant role (Papoli-Yazdi, 2021). Half of these street children live in Tehran (Iran's capital and largest city), where they are exposed to violence, extortion, rape and abuse (Ghahremani et al., 2019).

To tackle the problem, many initiatives aim to address the roots of the situation by trying to empower street children through education and skill-learning programmes (Zaheri & Kameli, 2018). Limited freedom of movement and lack of connection with nature are other issues that Iranian children face due to safety concerns and the modern urban form (Manouchehri & Burns, 2021). These problems are more concerning in larger cities. The *Nature Schools* movement is a local initiative (adopted from Europe) trying to connect children with nature. The programme aims to change the school structure for children aged 6-12 and create links between them and nature during school. The programme goal is to

strengthen children's curiosity, creativity and problem-solving skills (Manouchehri & Burns, 2021). In 2019, twelve Iranian cities were pilots for *Child-Friendly Cities Initiative*. The city of Yazd was one of the candidates that hosted the pilot project and continued the practice. In 2021 Yazd was featured in the Cities Inspire Awards Booklet by UNICEF as a successful example due to its positive achievements (UNICEF, 2021).

2.2.2.13 Europe

There are over 81 million children in the European Union. Children comprise 18.2% of the total population, of whom 24.2% are at risk of poverty or social exclusion (Eurochild, 2021). However, Europe is a pioneer in introducing children-related schemes. European children can benefit from many local and international child-centred initiatives and programmes. Boosted by intracontinental collaboration possibilities, these programmes can quickly build networks across the continent and gain diverse experiences and feedback. Eurochild is an example of a suchlike intracontinental network. Through this network, organisations and individuals work to improve children's rights across

European countries and expand early childhood development policies (Eurochild, 2021). European countries are at a different level than other continents regarding child-related programmes. Most of their programmes target problems beyond children's basic needs. For the mentioned 24.2% population in need of essential services, programmes like the *Eurochild Child Guarantee Taskforce* provide access to essential services to prevent and combat poverty and social exclusion (Eurochild, 2021). *First Years, First Priority*, is another Europe-wide programme working on early childhood development with a focus on children at greater risk of discrimination and exclusion, initiated by the international

step-by-step association (ISSA, 2022). In general, most European cities are working on extending their efforts on children-related issues and improving the current situation of European cities for children (European Commission, 2022).

2.2.2.14 Finland

Finnish children enjoy a relatively high level of independent mobility due to the dominant understanding of their parents and decision-makers of its role in children's well-being and development (Moll & Kuusi, 2021). In that regard, Finland has been by far the highest-performing country and graded first, followed by Germany, Norway, Sweden, Japan, and Denmark (Shaw et al., 2015). Although Finnish children's independent mobility is directly connected to the freedom they receive from their caregivers, other factors, such as the overall safety and the characteristics of their built environment, are also influencing factors. Finland has worked hard to have many recognised

child-friendly municipalities. The built environment of many Finnish cities is suitable for children to walk around. For example, in general, towns don't have many stairs, hills or cobblestones, making it easy for children to walk and go around (Varpu, 2020). Moreover, initiatives like the *Child-Friendly Cities* (CFCI) are actively improving children's well-being. In 2017 around 18.8 per cent of children under 18 years of age were covered by CFCI; by 2022, more than 50 per cent of Finnish children will be covered by the initiative (UNICEF, 2017). Additionally, children's participation is encouraged in Finland by giving them access to youth parliaments, public advocates, and hearings.

The Finnish adoption of the Youth Act of 2006, which provides for mandatory participation at the municipal level, has set dynamic developments in motion. There is a clear public responsibility for developing access to participation for Finnish children, and high-quality school-related services enable participation for all young people (Gretschel et al., 2011).

2.2.2.15 Norway

Norway is ranked among the countries with the highest number of family-friendly and child-protective policies (UNICEF, 2019). Based on a study, Norway has earned the third highest-ranked place in the world regarding children's independent mobility (Shaw et al., 2015). Furthermore, it is amongst the few countries worldwide where national policy frameworks intentionally support its local actions. In many countries, programmes are delivered by local authorities and supported at the local level without meaningful national support (Shaw et al., 2015). While in Norway, local programmes have national-level permission. An example of this support is in Section 104 of the Norwegian

Constitution, which says that in actions and decisions that affect children, the child's best interests must be a fundamental consideration (Henriette Sinding, 2016). Another example is the *Planning and Building Act* which ensures participation rights for children and youth in the planning process (Hanssen, 2019). *Barnetråkk*, a digital, map-based tool and teaching program for primary and lower secondary schools, is an outcome of such laws. It allows children to tell planners, the municipality, and local politicians how they use the place where they live and what they want differently. Although it has been recently digitised, the concept has been active in neighbourhood planning in

Norwegian cities for decades. With the help of this method, children get a real opportunity to participate in the development of society - in direct dialogue with local authorities (Doga, 2022). Additionally, the *Child-Friendly Cities Initiative* started in Norway in 2018 to ensure genuine participation for children, improve children's mental health, and support children with special needs (UNICEF, 2020).

2.2.2.16 Spain

Following their Local Plan for Children and Adolescents (2020-2023), the government in Spain has plans to make the capital city a resilient and capacitated town for children. Some examples include generating spaces such as new children's areas or pedestrian and cycling routes for dialogue and participation. These promote social interactions and recreation activities and lead to the well-being of children and healthier communities (Madrid City Council, 2020). Child participation is taken seriously in Spain. As an international programme, the *Child-Friendly Cities Initiative* (CFCI) was introduced in Spain in 2002, and by 2021, more than 277 local governments had received CFC recognition.

CFCI in Spain promotes the integration of child rights into municipal public policies with a focus on children's participation (UNICEF, 2017). Additionally, Spain hosts several other regional and local initiatives, such as *Youth Councils*. Through a consultative process, local Youth Councils provide the instruments that respond to the demands of young people for the development of their individual and collective objectives (Consejo de la Juventud de España, 2020). Also, Spanish children (in some southern regions like Andalusian) enjoy pedestrian-friendly street networks that promote their freedom of movement and independence by encouraging movement through the urban landscape

(Lambert, 2019). *Replace Vehicles with Public Space* is another programme that started in 1999 and is still in progress by the city of Pontevedra with a mindset that creating a child-friendly city is best done through comprehensive urban planning (Boyer et al., 2020). The initiative has been positive in improving children's situation in the urban landscape. For instance, in 2020, more than 80% of children 6 to 12 walked to school without caregivers, up from 9% in the 1990s (Boyer et al., 2020). This example shows that continuously updating a program will have positive results in the long term.

2.2.2.17 Oceania

Oceania is the smallest and least populated region in the world, with considerable dissimilarities between its countries regarding economic and human development indicators. The region's countries range from highly developed countries such as Australia and New Zealand to less developed ones such as Kiribati and Papua New Guinea (Hegarty & Tryon, 2013). This variety in development indicators also translates into a mixture of children's well-being situations. While the more developed countries in this region have programmes for their children, they are trying to help all the children in the area by building a network of different initiatives. *WAVES Trust* is one example.

The programme targets children in less developed countries of the region for protection against violence, child labour and poverty by creating a network of supporting initiatives and connecting them across the region (waves, 2021).

2.2.2.18 New Zealand

Based on a 2017 study, one in every three children in New Zealand is overweight or obese. These numbers make New Zealand a country with the second-highest child obesity rate in the OECD (Hawkins, 2021). Studies show that eighty per cent of obese children will become obese adults, which means the future health state of the country's population is dependent on its children's current state (Kelly & Swinburn, 2015). The New Zealand government has invested more than \$47,6 [NZD] in Healthy Active Learning to fight the problem. This joint government initiative is one of many programmes utilising the built environment's capacities for children's health and

improving physical activity (Ali & Adams, 2020). Equality is another important topic in New Zealand. *I am Auckland*, adopted in 2013, is a strategic action plan for Auckland's children and young people developed by Auckland Council. One of the goals of this action plan is to provide equality for all children using urban design strategies like ensuring all children can access a school within 45 minutes of walking and increasing the proportion of people living within walking distance of frequent public transport stops (Apulu, 2017). In addition, other short-term and long-term initiatives have also been executed. *Tiramarama Way* is a pedestrian street initiative designed by Wraight + Associates

and Lisa Reihana in Auckland's Wynyard Quarter. The design offers various activities for different age groups with varying levels of abilities (Boyer et al., 2020). The initiative has successfully invited children and people of all ages for play, stop, exploration and physical activities by including design elements such as water, light, and puddles which fill up with water in sync with the rising tide (Boyer et al., 2020).

2.2.2.19 Australia

The *Kids in Community Study* is a collaborative programme including several Australian and international universities and government and non-government partner organisations which test and investigate community-level influences on child development across Australia. The programme focuses on the community level because they believe researchers have focused on the individual, family and school levels in studying influencing elements of early childhood development and have ignored community-level effects (Goldfeld et al., 2017). The programme has explored twenty-five local communities of advantages and disadvantages across Australia and created a list of the Important

Foundational Community Factors (IFCF) laying the foundations for a good community for young children. Thus, the government or non-government initiatives can put their effort into areas that make the most sense. Physical access to services, walkability, public transport availability, traffic exposure, public open space availability and quality, facilities availability and diversity, and the natural environment are some examples of IFCFs that have been available or higher in the local communities where children were doing well or better (Villanueva et al., 2018). Touching on the available spaces in urbanscapes for children and to design the city of the future, in 2021, Australian children have started contributing to

designing their cities by sending their ideas in the form of drawings, video clips or writings to the Bupa Foundation under an innovative partnership launched by UNICEF Australia and the Bupa Foundation bringing the Child-Friendly Cities programme to Australia (Bupa, 2021). Furthermore, *Create the Perfect Play Space* is another initiative for creating learning opportunities for children through risky play. The programme leaders want to balance injury prevention and safety with children's need to be challenged and take risks in their learning journey to help them develop risk management and decision-making skills (Jeffery & Beasley, 2012).

2.2.2.20 Papua New Guinea

Papua New Guinea celebrated its 40th independence anniversary in 2015. Although the country's economy is expanding due to mining projects, it is estimated that nearly half of the population suffers from poverty (Human Rights Watch, 2016). Children are among those who endure the most mental and physical damage in this situation in Papua New Guinea. They are subjected to the worst forms of child labour and abuse, including commercial sexual exploitation, police brutality, and performing dangerous tasks in the mining industry and deep-sea fishing (Bureau Of International Labor Affairs, 2020). Moreover, the educational system is not working correctly.

With a lack of free and accessible education for all children, schools continue charging students fees due to not receiving promised government subsidies for the promised free and accessible education for all children (Bureau Of International Labor Affairs, 2020). Following the discussion at the beginning of the Oceania section, to tackle these issues, the more developed countries of this region are helping PNG by initiating different programmes. The *University of Canberra* and the *Playground Ideas organisation* in Australia are helping local schools to build stimulating environments for play, learning and research activities for children. The initiative has three preconditions:

(1) The design should be culturally appropriate and context-based. (2) All the building materials must be locally sourced. (3) Children, their families and teachers must be included in the design process from the beginning (Simoncini et al., 2016). The findings show that children are attending school more, and teachers are acknowledging the learning potential of play for children (Simoncini et al., 2016).

2.2.2.21 Summary

This chapter reviewed more than forty initiatives and programmes in fifteen countries worldwide to capture the common and most important issues children face in urban spaces. It is visible that high-income countries tend to utilise programs that promote children's freedom of movement and the quality of their built environment. Meanwhile, low-income countries are more focused on addressing children's fundamental rights and their immediate issues, such as the issue of shelter, education, risk exposure, and violence (Graaf, 2020). The African and South American programmes such as *Children Change Colombia* (CCC) are illustrations of addressing these issues.

These reviews demonstrate the importance of starting from the bottom and systematically building up rather than addressing an issue without properly building its prerequisite infrastructure. The significance of creating the legal foundation and the necessary infrastructure is visible in the cases from more developed countries like the U.S. and Norway. Due to the previously established laws, regulations, and infrastructure in these countries, many small-scale programmes can arise, function and (try to) reach their goals. However, studying these different cases, common focus areas are recognisable regardless of the country. Focusing on the effect of the built environment, providing basic services,

and the availability of open spaces and natural environments were repeatedly mentioned. This highlights these subjects' vital role and potential in improving children's well-being. Among all the different initiatives reviewed in this chapter, the *Child-Friendly Cities Initiative* had the most significant footprint with considerable potential to adapt to different contexts. Table 4 illustrates the discussed summary.

2.2.2.21 Summary

	Asia	Oceania	Africa	Europe	Americas
Education	■	■	■		
Safety	■	■	■		■
Participation	■	■			■
Right to Play	■	■		■	
The effect of the built environment (Spatial Characteristics)	■		■	■	■
Health & hygiene		■	■		
Independent Mobility	■	■		■	
Basic Services	■	■	■		■
Child-friendly regulations		■		■	■

Table 4: Summary of the main objectives in each region

3. Essential factors for child well-being in urbanscapes

After investigating the theoretical knowledge, implemented initiatives and programmes, and sorting out their aims and primary objectives, a list of the most critical factors regarding children's well-being in urbanscapes can be drawn. This list is the abstract of eight scholars' ideas, six international programmes' main focuses, and the aims of more than forty programmes in fifteen countries worldwide. For creating such a list, the six most repeated topics from tables two to four have been chosen and will be discussed in more detail in this chapter.

The six essential topics are:

- Child-friendly governance
- Children's participation
- Children's independent mobility and walkability
- The effects of the built environment's characteristics on children
- Children's safety
- Play and its role in children's development

3.1 Child-Friendly Governance

Child-Friendly Governance is generally considered a strategic framework for fundamental child rights realisation (the right to survival, development, protection and participation) by governments at the national and local levels (Raj et al., 2020). For children to benefit from the services and opportunities cities provide, cities need to emphasise specific child-friendly governing methods. In other words, for governments to be child-friendly, they must realise and recognise children's rights at the local and national levels (Raj et al., 2020). Child-friendly governance can harness the potential of cities for the benefit of children. It will give visibility to children in the city's development agenda

and allow them to participate in the decision-making process (Riggio, 2002). A government committed to establishing a child-friendly framework follows four articles from the Convention on the Rights of Children (CRC): article [2], where the city must commit to fulfilling children's rights; article [3], where states that the child's best interests are a primary concern in children's cases; article [6] where states the city should ensure that all children survive and develop to their fullest potential, and article [12] about respecting children's views (Riggio, 2002). Child-friendly governance must be present at both local and national levels. The existence of one without the other will decrease the framework's

effectiveness. In other words, local governments should be supported by the national government and conversely. For urbanscapes to become child-centred, many measures must be taken at both estate and city levels. These measures vary from commitments such as creating a legal framework ensuring that future policies benefit children to designing specific city-level plans for children and taking further steps to establish opportunities for children to be part of the creation of public spaces (Riggio, 2002). A child-centred / child-friendly governance has a multi-level structure, meaning the central government authority can be dispersed between processes (Bache & Flinders, 2004).

3.1 Child-Friendly Governance

Therefore, it can be measured by quantitative methods such as the percentage of women in decision-making positions in charge of urban and mobility policies, the share of city budgets allocated for initiatives to upgrade the built environment in support of children and families, and the presence of child-advocate positions in city and regional government (Boyer et al., 2020). However, the benefits of child-friendly governance exceed children's communities. Child-friendly governance can also empower locals and help them be present in the decision-making process and contribute to making specific context-sensitive decisions. That being discussed, there is a concern

that the disadvantaged communities, who should benefit the most from this approach, are the least equipped to participate (Goldfeld et al., 2017). The support of the national government is one solution to this problem. An example has happened in Nepal, where the government not only initiated a nationwide child-friendly governance programme but has gone beyond recognising children in the decision-making process and initiated a budgetary provision through its Ministry of Federal Affairs and Local Development to support their presence as much as possible (Dhareel & Shrestha, 2018).

3.2 Participation

Participation is a part of child-friendly governance in which the government's rules, regulations, and policies are sensitive and responsive to children's needs and priorities. One way to achieve this sensitivity is by participating children in the law/decision-making process. In the urban planning context, this approach acknowledges children as urban stakeholders and the need to understand and recognise the value of children's perspectives and competencies for society (Nordström & Wales, 2019). Children's participation can be complemented through a suitable participation method that ensures children can participate on their terms (Alderson & Morrow, 2011).

When children are involved in the decision-making process, they are frequently treated as both educators and learners simultaneously. This means that children and adults have mutual benefits and learning opportunities (Ataol et al., 2019). Moreover, it gives children a chance to reflect on their societal experiences through laws and regulations, which will help them develop unique skills and create a base for better adulthood that eventually will benefit the general public (Skauge et al., 2021). It is worth mentioning that children's participation is not limited to a child-to-adult conversation. It also includes dialogues between children together (Wyness, 2013). This means that during the process children

learn from and influence each other while influencing adults and being recognised by them. Planning with children is an interdisciplinary collaborative process that needs a high degree of diversity among the participants from disciplines such as geography, planning, art, history, and architecture (Ataol et al., 2019). However, there are concerns about the extent of such practices among different communities. It is noticed that children's participation practices are compromised when the potential participants are considered vulnerable or the research topic is regarded as sensitive (Powell & Smith, 2009). Presenting child participation as a child rights issue and strengthening

3.2 Participation

multiple actors at multiple levels of the decision-making vital local services are solutions which can motivate local leaders to include and involve children from more disadvantaged communities in the decision-making process and demonstrate more commitment towards them (Lansdown et al., 2019). The multi-level structure of child-centred / child-friendly governance is also visible in the children's participatory processes. The International Bureau for Children's Rights has divided children's participatory processes into three significant levels: Consultative participation, Collaborative participation and Child-led participation (IBCR, 2018). Consultative participation is the first phase

of including children in the decision-making process, where adults seek children's perspectives and reflections on problems to build knowledge based on their understanding. At this level of participation, children involve in tasks initiated, led, and managed by adults. Although this can be a single attempt (not multiple and progressive) participation for children, and the impact is not too high, the approach is essential as it recognises children and allows them to be heard and seen as critical parts of a community. Conducting surveys and handing out questionnaires are the most common exercises at this level (IBCR, 2018). Collaborative participation goes beyond one-time contacts and creates an interactive

relationship between children and managers of adult-initiated projects. Children can do self-directed interventions in the project and stay involved as the project moves forward. Over-time interaction is a crucial element at this level which is supported by giving the children freedom of creation. Children can see the consequences of their decisions in their environment and can change them. Making/developing rules and regulations in children's environments (schools, playgrounds, etc.) and using their feedback is a joint exercise at this level (IBCR, 2018). Child-led participation is where children are leaders, and adults are advisors. Initiatives start, are led, and are concluded by

3.2 Participation

children. Adults will provide the space needed for the initiative, support children in implementing their ideas and help them tackle their most important issues. In some cases, young adults initiate online projects without the presence of any adults. Children develop essential leadership qualities through these practices. Fighting climate issues and civil society reinforcement projects are standard practices at this level (IBCR, 2018). A typical method of engaging children in different decision-making processes is based on their age groups. A study found that the most common grouping system is categorising children into toddlers (1-3 years old), preschoolers (3-5 years old),

school-aged (6-11 years old), and adolescents (12-18 years old). Preschoolers and school-aged children are often conceptualised as consultants to educate adults, while adolescents are regarded as adults leading to using more expressive and conversational research methods with them (Ataol et al., 2019).

3.3 Independent Mobility

Children's independent mobility refers to the freedom that children are granted to move around, wander, and play in their local neighbourhood unaccompanied by any adults (Riazi & Faulkner, 2018). Mayer Hillman introduced this concept in the 1990s and named it Parental Licences (Hillman et al., 1990). In their study, Hillman and his colleagues discuss the barriers children encounter when moving freely around their neighbourhood without their parent's presence. To measure the extent to which children engage in independent mobility, they invented six licences and examined their case studies against them. The licences were (1) license to cross main roads

alone, (2) license to walk places other than school, (3) license to travel home from school independently, (4) license to use buses, (5) license to go out after dark, and (6) license to cycle alone on main roads (Hillman et al., 1990; Drianda & Kinoshita, 2011). These licences are still valid and can be used as indicators to measure children's independent mobility. The result shows a decline in children's independent mobility in recent decades, even in countries where children enjoy a high degree of independent mobility (Kytta et al., 2015). Consequently, children's daily territories (places where children travel independently) and outdoor freedom have significantly shrunk, with severe consequences for their health and

physical, social and mental development (Shaw et al., 2015; Karsten & van Vliet--, 2006). Although, due to the diversity of contexts around the world, there are different rationales behind the decline, finding commonalities is unchallenging. Car traffic, car-dependent lifestyles, and safety concerns appear to be the most common reasons behind the decline in children's independent mobility (Marzi & Reimers, 2018). Different built environment factors such as commercial density, road density, proximity to parks, proximity to schools, and land use type are other influencing factors (Zannat et al., 2022). Low independent mobility in children is associated with several mental and physical

3.3 Independent Mobility

problems. The growing number of obesity and type II diabetes are among the most concerning physical issues (Casey et al., 2014). Moreover, being unable to build environmental consciousness, having difficulties in socialising with others and having personality development problems are some of the mental issues related to children's low independent mobility (Kyttä et al., 2015). Despite these issues, studies show that this concept is not a focus of many programmes and interventions or a significant concern of policymakers (Shaw et al., 2015). However, the urban landscape can play a vital role in promoting children's independent mobility. Road density negatively affects children's independent

mobility due to the concern regarding traffic accidents but a balanced residential and commercial development improves it (Zannat et al., 2022). Distance to school is another crucial barrier. However, children are more likely to walk to school unescorted if they live not more than one kilometre from the school (Kyttä et al., 2015). Another solution is removing danger from the streets and urban landscape instead of removing children. It can be done by creating a network of walking and cycling paths that connect homes to community activities and services within a reasonable distance (Timperio et al., 2004). In addition, reducing car dependency and the dominance of traffic in the public realm by measures

such as expanding public transport and public services, putting the needs of children at the heart of spatial planning and urban development, and explicitly incorporating children's independent mobility into policy are other valuable measures recommended for achieving child independency in urban landscapes (Shaw et al., 2015).

3.3.1 Walkability

Walkability refers to creating traversable, compact, lively, and safe environments complemented with sustainable transportation options that promote walking over motorised use (Forsyth, 2015). This is a multi-dimensional concept and should not be confused with the number of instances of walking. It includes a complex set of capacities embodied in any urban morphology in three main ways: the densities (concentrations) of buildings and people, the mix of different functions and attractions, and the access networks we use to navigate between them (Dovey & Pafka, 2020). Density concentrates more people and places within walkable distances; multifunctionality produces a

more excellent range of walkable destinations, and access networks steer traffic flows between them (Dovey & Pafka, 2020). Walkability offers children social, environmental, financial and health-related benefits. Moreover, people from neighbourhoods with outstanding walkability scores feel a higher sense of belonging to their communities, making them take more participatory steps in the community (Oishi et al., 2019). Providing walkable neighbourhoods for children highly relies on recognising children's sizes, abilities, and limitations. These should be respected in the three mentioned qualities of density, multifunctionality and access networks. Children need shorter routes,

closer destinations, downsized urban furniture, and more frequent pausing spots. For example, studies show that children reach their limits after 800 to 1000 meters of walking and destinations beyond that are not considered walkable (Arup, 2017; Kyttä et al., 2015). The quality of urban infrastructure, availability of the pedestrian network, and accessibility of destinations are vital measures for a walkable neighbourhood (Dovey & Pafka, 2020). Walk Score® is a publicly available large-scale method for calculating neighbourhoods' walkability. It is based on a composite of the mentioned measures and the built environment characteristics. Walk Score uses novel web-based

3-3.1 Walkability

geospatial technologies to assign a score to a location based on the distance to various nearby commercial and public facilities such as educational, retail, food, recreational, and entertainment centres. (Duncan et al., 2011). Having a centre, whether the main street or a public space, which works as both a spatial organiser and a destination is a typical quality among WalkScore's walkable neighbourhoods. A mixture of residential and commercial land use, a functional public transit system, affordable housing near businesses, availability of parks and public spaces, and putting schools and workplaces within walking distance of residential areas are other qualities walkable neighbourhoods have (WalkScore, 2019).

3.4 Spatial characteristics of the built environment

Organising the built elements and spaces shapes the built environment's spatial characteristics. These characteristics can be divided into three defining groups: *context*, *wayfinding*, and *functionality*. The context group addresses patterns of the surrounding streets, scale, area's character, public-private relationship, connectivity, and land use. The wayfinding group addresses linkage to surroundings, moving modes, pathways legibility, and traffic and people flows. The functionality group comprehends the level of interest in spaces, the role of the physical environment and atmosphere in achieving the space objectives, and efficiency in attracting tourists, businesses, and regular

visitors. It also addresses the extent to which a space is memorable and its position as a major attraction in the neighbourhood and city (Almaimani et al., 2014). These defining groups and spatial characteristics circumscribe the relations between places and users. They connect spatial experiences with the user's perception, eventually forming their spatial thoughts and actions in a given place (Khan et al., 2016). As a result, different spatial settings will lead to different user experiences by curating the overall perception of the place. For example, formal and informal open spaces, private precincts, and streets within a neighbourhood afford the highest contributions to place

friendship (Ramezani & Said, 2012). Moreover, it has been proven that the design of the street space and the scale of the built environment are key spatial contributors for the context group. Not only do they directly affect children in urbanscapes, but they also reach a range of public and private urban places, from a child's room to the world in which that child resides (Wendel et al., 2008). Therefore, the size, texture, and articulation of the urban's physical elements should be implemented concerning children in the urban. For example, physical characteristics such as building details, pavement textures, street trees, and street furniture should

3.4 Spatial characteristics of the built environment

correspond to children's scales (Ewing & Handy, 2009). *Imaginability* in the functionality group refers to creating the user's perception and spatial thoughts. The organisation of the built elements is vital in enhancing imaginability. However, the number of people, historic buildings, courtyards, parks, plazas, outdoor dining spots, noise level, landscape features and the number of buildings with identifiers also contribute to the imaginability of the built environment (Ewing et al., 2006). *Enclosure* in the functionality group refers to the degree to which public spaces are defined visually by buildings, walls, and other vertical elements, creating a room-like space quality (Djupvik, 2006).

People enjoy enclosed spaces and react positively to fixed boundaries as something safe, defined and memorable (Jacobs, 1995). Enclosure is such an essential feature of the environment that a specific region in the brain (the parahippocampal place area [PPA]) responds specifically to the spatial enclosure (Stamps, 2005). Studies show that 93% per cent of the judged enclosure is created by six physical features of the built environment: picture format, proportions of views covered by walls, proportions of views covered by ground, average lightness of the scene, depth of view, and the number of sides open at the front of the scene (Stamps, 2005). *Complexity* is another essential quality of the wayfinding group,

especially for children. It is the amount of diverse information that urbanscape presents to the user simultaneously (Djupvik, 2006). A multifunctional urbanscape and mixed use of the built environment add attractive and desirable complexity. Multifunctionality allows different functions, actors and users during different periods or can simultaneously accommodate two or more activities (Ghafouri & Christiane, 2020). Moreover, Buildings' details, materials, colours, and orientation contribute to the complexity of the built environment resulting in people flows, increased safety, economic function, and appeal of the place (Arnold, 1992 & Jacobs, 1961).

3.5 Safety

Safety (traffic, environment) and *security* (personal safety, safety from crime), with the primary goal of preventing people from human and technical failure, directly affect how people use the urban environment (Hessami, 2004). Safety is a fundamental necessity in urbanscapes, and its presence not only improves people's urban experiences but also prepares a suitable domain for other built environment functions (Nabipour et al., 2022). Independent movement and walkability are heavily dependent on safety in the built environment. It is proven that even in highly walkable neighbourhoods, the lack of safety prevents children from walking freely and unescorted (Holt et al., 2009).

Although the existence of safety in the built environment is essential, in case of insufficiency, the built environment has the capacity to promote or add to the level of safety by design. Mixed land use and multifunctional urban areas increase people's flow, leading to increased safety in the area (Speck, 2018). The perception of safety in people is higher in multifunctional urban areas. Children perceive the likelihood of being assaulted, robbed, or harassed at night as lower if they walk through an area with commercial and mixed land use (Basu et al., 2022). Children's safety in the urban landscape can be categorised into five thematic areas: safety from urban violence, safety from domestic or foreign

conflicts, safety from natural and man-made disasters, safety from abuse, and safety in the built environment (WVI, 2012). Of the groups mentioned above, safety in the built environment (traffic safety, environmental safety) and safety from urban violence (security from neglect, exploitation and other forms of violence) are the dominant groups (Basu et al., 2022). However, in some cases, contemporary society's obsession with child safety and excessive fear of harm has led to unnecessary limitations for children (Wyver et al., 2010). These limitations are not direct responses to danger but are caused by fear. Fear of danger leads to irrational judgments about the likelihood

3.5 Safety

of harm and causes humans to take extra (unnecessary) prevention measures, especially regarding children's safety and well-being. This pressure on parents to keep their children safe has resulted in limited freedom of movement for the children affecting their development (Alderson, 2015). For example, research by Malone concludes that restricted independent mobility for generation X children has decreased their ability to find their way around their neighbourhoods. It has also affected their sense of purpose, self-worth, social competence, and resilience, turning them into *Bubble Wrap Kids* whose parents prevent them from developing independence (Malone, 2011).

3.6 Play

Play is often dismissed as a trivial activity that children do without any serious purpose and will grow out of as they become adults (Whitebread et al., 2012). This explains the lack of attention to children's play in urbanscapes. A study reveals that in Japan, children's play spaces in metropolitan areas declined by 95% between 1955 and 2015 (Senda, 2015). However, play is central to young children's early learning. Researchers increasingly recognise the value of play in children's intellectual achievement and emotional well-being (Whitebread et al., 2012). Children's play is intrinsically motivated, open-ended and engaging. It is about activity, motivation and emotional

response, including the freedom to choose (Mathieson, 2017). Furthermore, a growing body of literature links play to developing children's cognitive, social, and functional skills. Additionally, play allows children to experience cause-and-effect relationships and the natural consequences of their decisions in a safe, engaging context (Nijhof et al., 2018). However, due to rapid urbanisation, the construction sector has been the primary occupant of lands in urbanscapes, meaning recreational areas and play spaces are not prioritised. Moreover, modern culture is risk-averse, meaning that existing play areas emphasise safety over risk-taking play spaces. While it is proven that free play and playing within

nature and with natural elements have many benefits for children's development (Prins et al., 2022), children today are strictly supervised and deprived of such playing. Additionally, because children are heavily scheduled, more play occurs indoors. Play in designed playgrounds is limited to safe instruments, surfaces, and activities (Whitebread et al., 2012), preventing children from taking risks and challenging their risk management skills. Although playscapes need to offer a certain level of safety, it is proven that ultra-safe, prefabricated, and universally-designed playgrounds are increasingly unsuccessful in meeting children's needs or expectations concerning play (Wood & Martin, 2010).

3.6 Play

The parents' fear of harm, strict supervision in urban environments, and children's heavily scheduled leisure time negatively impact their play experiences. These reasons, in addition to land use policies in urbanscapes, have resulted in a decline in children's use of nature as playgrounds. The *Risky Play* concept suggests transitioning from parental protection to child-led resilience by offering children challenging opportunities to make mistakes, learn from their mistakes, and grow (Gill, 2007). Risky play is thrilling and involves uncertainty, risk management, and decision-making processes. Risky play is understood as having six categories: play at speed,

play at height, play with dangerous tools (e.g., hammers, saws), play near dangerous elements (e.g., fire, water), rough and tumble play, and play where there is a chance of getting lost (Sandseter, 2007). Allowing children to play outside the safe engineered box of artificial landscapes and industrialised playgrounds will help them grow risk-assessment skills, increase their physical activity and well-being, and promote their social competencies and resilience (Obee et al., 2020). The most successful urban play environments are adventure playgrounds, which are set up so that children can adapt to them, play risks, and start building their own spaces using various natural and artificial materials (Bartlett, 2002).

4. Case Studies

4. Case Studies

It has been discussed that designing for children's well-being in urbanscapes and creating a suitable urban environment is beneficial for the whole society and is also a key to sustainable development. However, the definition of sustainable development differs based on where it is defined and who is defining it. As Parkin highlights, there are more than two hundred definitions for sustainable development worldwide, and the numbers are rising (Parkin, 2000). Although there is no agreed definitions for sustainable development, the widely accepted definition refers to *"development that meets the needs of the present without compromising the ability of future*

generations to meet their own needs" (Drolet, 2015). The context sensitivity of development is a significant reason behind the variety of definitions. Context is critical in children's programmes and initiatives in urbanscapes. Many of the reviewed programmes in this study (except for some of the local programmes) are initiated and defined by countries in the Global North and applied in both the Global North and the Global South. Although some of those initiatives are more flexible and adopted by Global South countries, they inherently carry characteristics that have limitations for applying them (Myllylä & Kuvaja, 2005). This thesis identified, extracted, and defined six essential factors for children's

well-being in urbanscapes. Three of them have been selected and used in two contexts: the city of Oslo in Norway and the city of Yazd in Iran. The factors are: *Spatial Characteristics of the Built Environment, Safety, and Independent mobility*. It is worth mentioning that this is not a comparison between the two cities, as the differences in the welfare state, policies, needs, and priorities of the two contexts make such a comparison meaningless. Moreover, the outcome of the analysis conducted through the lens of the factors mentioned above cannot individuate data for future best practices regarding children in the urbanscapes.

4.1 Iran & Yazd city

Iran is known as one of the oldest civilisations in the world. The country has some of the world's oldest cities, such as Shoush from the Elam era (2700 B.C.) and Hegmataneh from the Median Empire (Rasoolimanesh et al., 2013). According to the World Tourism Organization, Iran is in the top ten countries in the world for tourist attractions (Farashah & Aslani, 2021). Yazd, along with Shiraz and Isfahan, forms the three vertices of the golden triangle of tourism in Iran. Dating from the 5th century CE, the historic City of Yazd is the first adobe city in the world, among the oldest continuously inhabited cities worldwide and the first Iranian city inscribed on the UNESCO World Heritage

List (Farashah & Aslani, 2021). With an area of 107.44 km², Yazd is located between the geographical coordinates of 31° 54' northern latitude and 54° 23' eastern longitudes. It is situated alongside Iran's central desert. The hot and dry desert climatic characteristics had led to a dense and compact urban fabric formation at the city's ancient core.

However, the city has expanded substantially with rapid urbanisation, and the new expansions do not follow the old compact formation of the city (Pouriye et al., 2016). Climate comfort architecture protects people from harsh desert weather. It has been a driving force in the formation of Yazd.

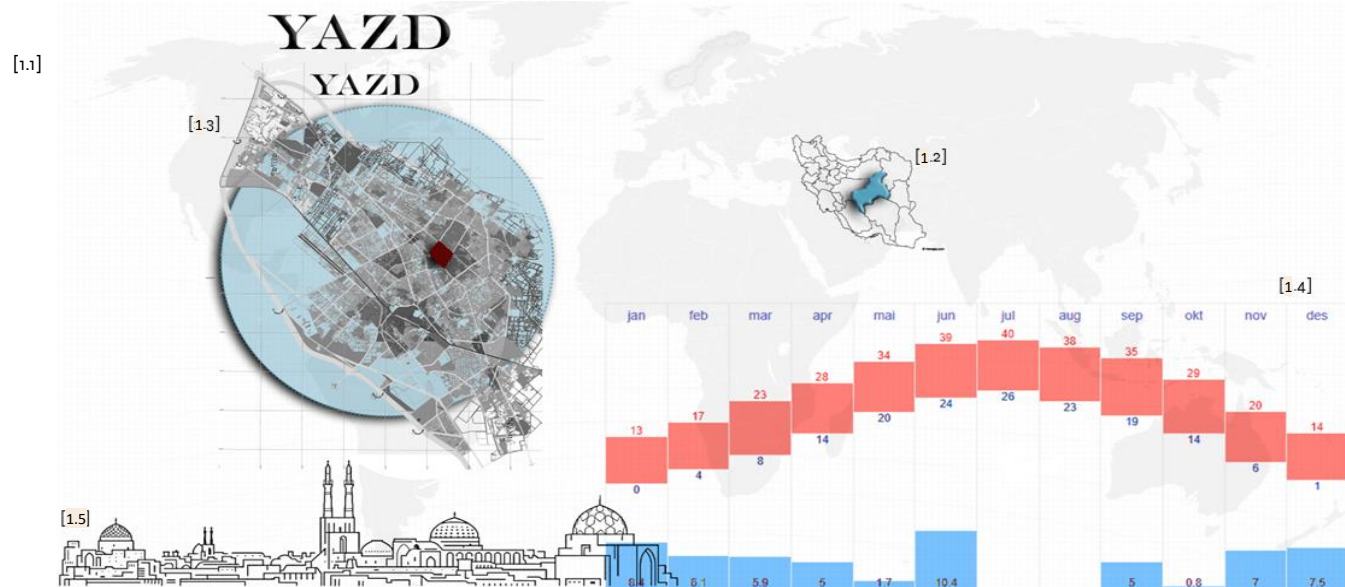


Figure 1: Location of the city of Yazd in Iran. ©Materials adapted from multiple sources

4.1 Iran & Yazd city

People have been creating climate comfort by using shadow, wind, and water and reducing the impact of solar radiation (Basir et al., 2017). The streets of Yazd are aligned at a 45° angle (NE-SW) to protect people from warm northwest winds, sand, and dust storms. Moreover, the narrow streets and passages, with high-raised walls, create shade and keep the sidewalks in shadows, reducing the ground warmth from summer mornings to afternoons (Yardımlı & Ozer, 2020). This model of urban formation in Yazd expanded in the 14th century when the governor built a square named *Amir Chakhmaq* outside the city walls changing the circular growth pattern of the city into a linear one.

The square incorporates a mosque, a water reservoir, and a bazaar. Its desirability altered the city's expansion pattern towards it and turned Amir Chakhaq square into Yazd's new city centre (Noghsan-Mohammadi, 2001). This space gradually led to the creation of the Mosalla neighbourhood, which Qiam St. in the East, Imam St. in the South, Rajaei St. in the West, and Emamzadeh St. in the North form its boundaries.



Figure 2: Location of Mosalla in Yazd

4.1 Iran & Yazd city

form its boundaries. Westernisation affected the traditional urban layout of Yazd in the 1930s with the construction of Qiam and Imam streets (Rahbarianyazd, 2022). These new streets radically altered the urban character of Amir Chakhmaq from a pedestrian-friendly neighbourhood into a transportation square, heavily interrupting people's access to the area (Figure 4). The construction of these straight, open, and wide streets (Imam and Qiam) in the Mosalla neighbourhood introduced an extroverted texture to Yazd's introverted urban layout (Ivani, 2009). Although westernisation cut through some of the social and physical elements of Mosalla, such as its Bazar (Figure 3),

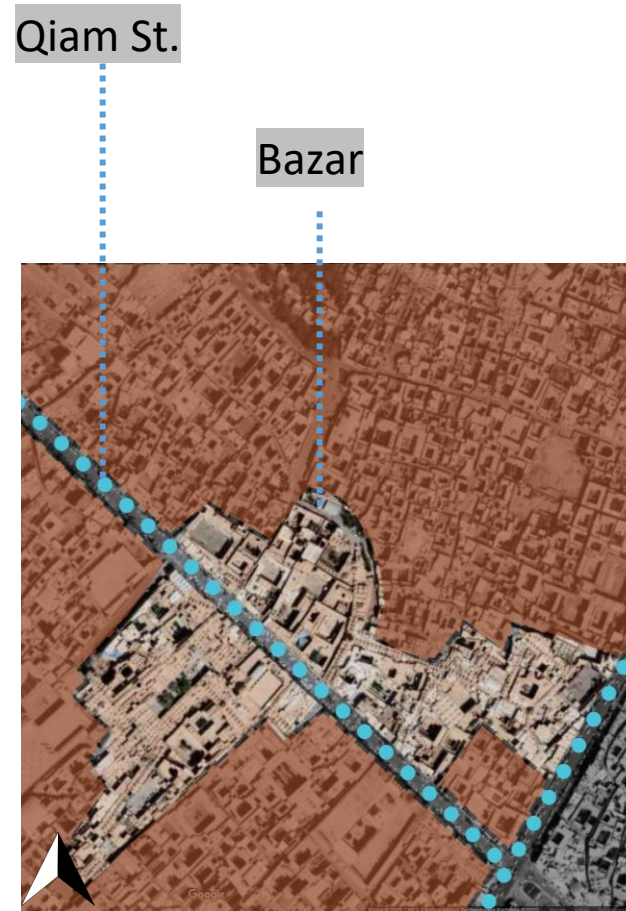


Figure 3: Mosalla Neighbourhood

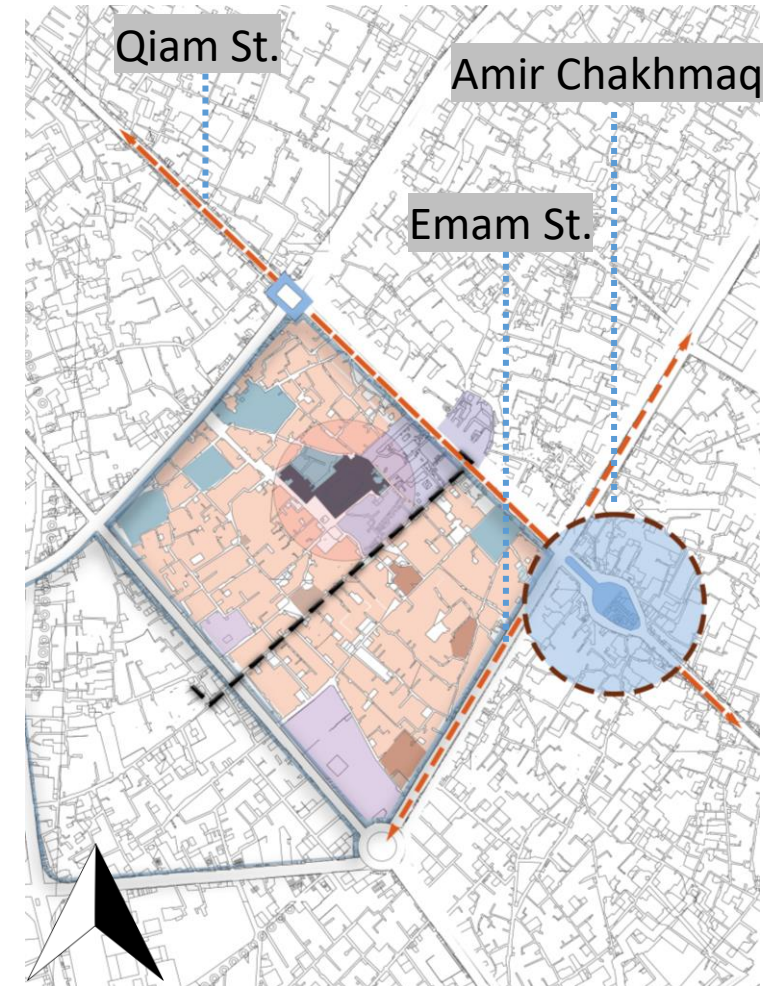


Figure 4: Mosalla Neighbourhood

4.1 Iran & Yazd city

it did not alter its inner texture. The area benefits from various functions and child-friendly features. In an online survey by Iran's Ministry of Interior, 1,735 children from 30 Iranian cities, including Yazd, participated in answering these questions: *where in your environment do you want to see a change, and what would you change if you were the mayor?* Nearly half of the participants (43%) would like improvements in public spaces. A very similar number of participants (40%) wanted to make changes in play/leisure facilities if they were the mayor of their city (UNICEF, 2019). In another study, to investigate the effective criteria for creating a child-friendly city, 384 children

in Yazd were interviewed. Children mentioned *the location of play, social interactions, accessibility, participation, security and safety* as their most effective criteria (Shahrizadeh & Moayedfar, 2016). After evaluating appropriate tests, the study concludes that safety has the highest and location of play has the lowest significance on the child-friendliness of Yazd neighbourhoods (Shahrizadeh & Moayedfar, 2016).

4.2 Norway & Oslo city

Scandinavia was one of Europe's last places to settle as the Ice Age lingered longer (Clements, 2006). Urban settlements in Norway trace back more than a thousand years to the Viking era (750–1050 CE) (Strand et al., 2022). Before industrialisation in the 1800s, Norwegian settlements were developing primarily based on trades and crafts; planning was limited to the small urban settlements of the country. However, following the flourishing economy in the post-WWII era, domestic migration from rural to urban areas increased. During this time, large estate housing projects constituted the majority of housing resources in larger cities (Brattbakk & Hansen, 2004).

Growing population density southwards and with proximity to Oslo is still a significant trend in Norway (Knudsen, 2020). In response, the national government has tried to create growth in all of Norway's regional districts by strengthening decentralisation to counter the staggering population growth in Oslo, which is already recognised as a

problematic pressure area (Bergsli & Harvold, 2017). Oslo is facing pressure on transport and infrastructure, housing shortages, density problems, air pollution, and climate change. The capital region of Oslo and Akershus accounts for 40 per cent of Norway's population growth. Meanwhile,

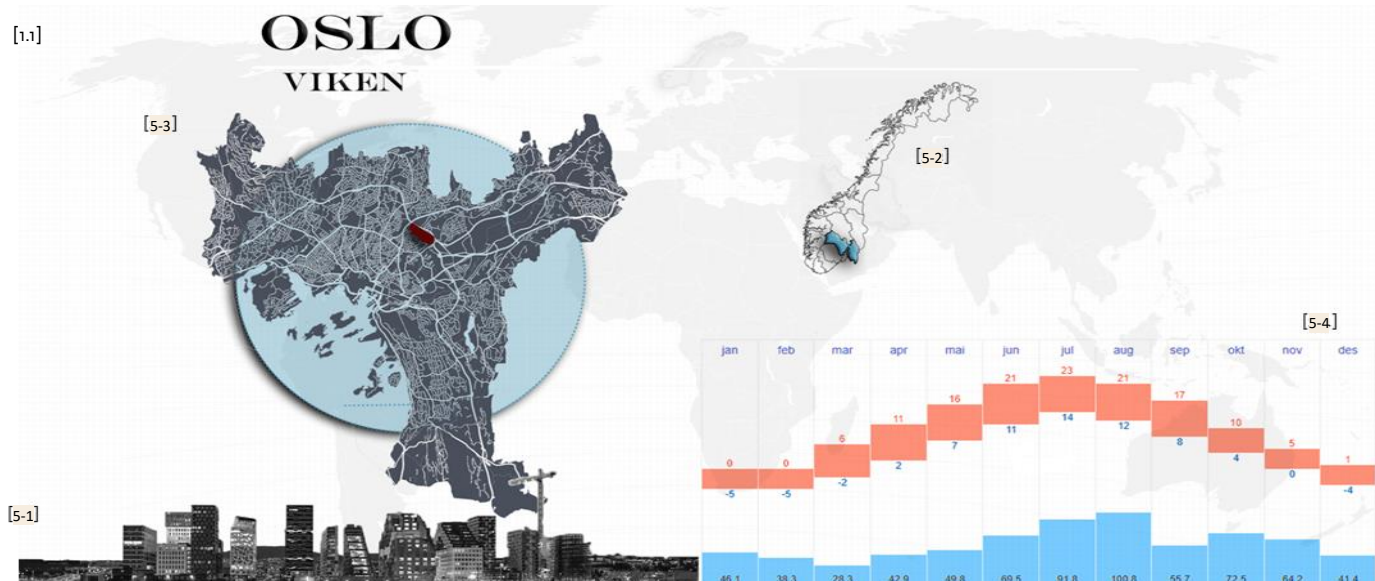


Figure 5: Location of Norway on the map. ©Materials adapted from multiple sources

4.2 Norway & Oslo city

in the last decade, Oslo has been growing at an annual rate of 20 per cent (Bergsli & Harvold, 2017). The capital's population is expected to increase by 260,000 by 2030, highlighting the importance of urban planning to address these concerns. The growth has been managed (to some degree) by densification policies. Further, Oslo's *regional land use and transport plan* aim to address its population growth and concerns. However, conflicts about whether city planning should prioritise the enhanced quality of life and child-friendly urbanscapes or densification plans (with their potential impacts on urban life) have not been answered (Bergsli & Harvold, 2017). The government's

densification policies have resulted in significant residential projects in some neighbourhoods in the inner East of Oslo, such as Løren, Hasle, Økern and Ensjø. From these neighbourhoods, Løren in the district of Grunerløkka is one of the most populated areas of Oslo and has the greatest number of children in the city. In response to these trends, housing projects in Løren offer multi-room flats, car-free zones, playgrounds, green spaces and schools with good reputations, indicating that they target families with children (Cavicchia & Cucca, 2020). However, despite the municipal goal of keeping people inside these dense residential neighbourhoods and the fact that construction companies are targeting

4.2 Norway & Oslo city

families with children, studies show that around 70 per cent of those born in the inner city of Oslo move away before reaching school age (Barlindhaug, 2022). The study concludes that people who move away from inner Oslo believe that larger living spaces in low-rise houses with private outdoor areas are most suitable for raising children. Additionally, both those who chose to stay and those who opted to leave strongly care for their children's playing opportunities and think short distances to activities and walkability are valuable. On the other hand, traffic in the inner city, noise, pollution, and a general lack of safety connected to crime and drugs are determining factors for those who

choose to leave (Barlindhaug, 2022). In a map-based survey about favourite streets and route choices, to a question about their most and least preferred streets in central Oslo, People responded that Torggata, Karl Johans gate and Markveien were the most popular. In contrast, Storgata, Karl Johans gate, and Brugata were the least popular (Meyer et al., 2019). The study concludes that the favoured streets are pedestrian-friendly with banned or limited use of motorised vehicles and have multi-functional and service-oriented edges. In contrast, people experience insecurity, feel social discomfort and observe dirtiness in the least popular streets (Meyer et al., 2019).



Figure 6: Location of Løren in Oslo

4.3 Analysis

4.3.1 Løren

Løren's transformation from an industrial area to a completely residential neighbourhood started in 2002. Despite being newly established, Løren has become one of the most populated neighbourhoods in Oslo, with the greatest number of children (Selvaag Bolig et al., 2019). Løren has an area of approximately 500,000 square meters. The neighbourhood is constantly changing from a former industry-oriented place into a residential area. That being said, some industries are still operating there (Figure 7). Løren is adjacent to Hasle and Frydenberg from the east and south, Sinsen from the west and south, and Refstad from the north (Figure 8).



Figure 7: Location of Løren in Oslo and the neighbourhood functions.

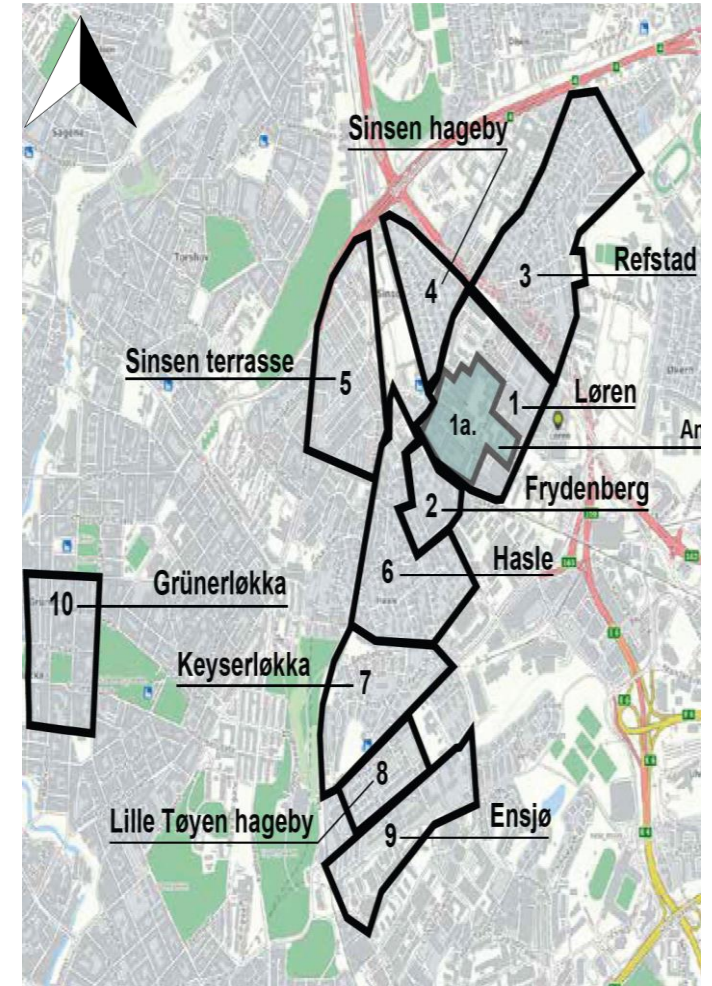


Figure 8: Location of Løren in Oslo and its neighbourhoods. © Selvaag Bolig.

4.3.1 Løren

Løren has one main green area (Lørenparken) at its centre, which is insufficient regarding the neighbourhood's population (Figure 9). However, Lørenparken attracts the neighbourhood's members with different needs. This has resulted in the presence of different groups (for example, children and dog owners) at the same place (Lørenparken), leading to a conflict of interest. Additionally, the park lacks multifunctional features (such as cafes), which encourage a group of citizens to commute to the nearby greenspaces. Therefore, some community members in Løren commute to Frydenberg to spend their free time there (Figures 10 & 11).

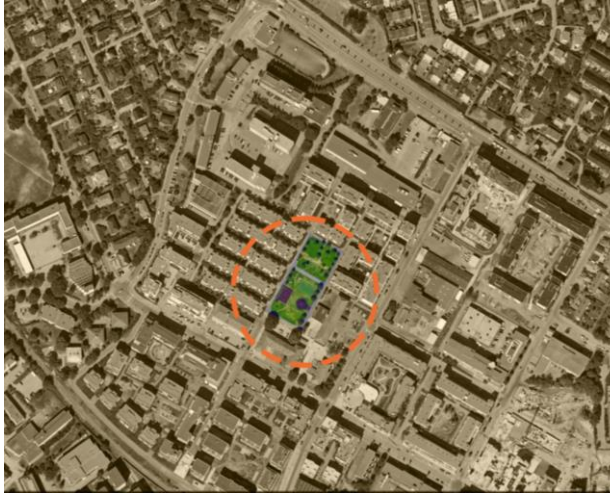


Figure 9: Commute from Løren to Frydenberg



Figure 10: Commute from Løren to Frydenberg



Figure 11: : Commute from Løren to Frydenberg

4.3.1 Løren

Løren has an uninterrupted network of sidewalks. The mesh layout of the streets makes them easy to read and navigate. Lørenvien - the neighbourhood's main street - in the south, is mainly pedestrian-oriented, which offers people the opportunity to walk the width of the neighbourhood. It has also an important role in distributing the traffic to and from the southern neighbourhoods (Figure 12). However, a four-lane highway goes around the neighbourhood, limiting connectivity, especially on the eastern and western sides. Furthermore, an impenetrable edge in the east makes it even harder to navigate through/from this side (Figures 13 & 14).

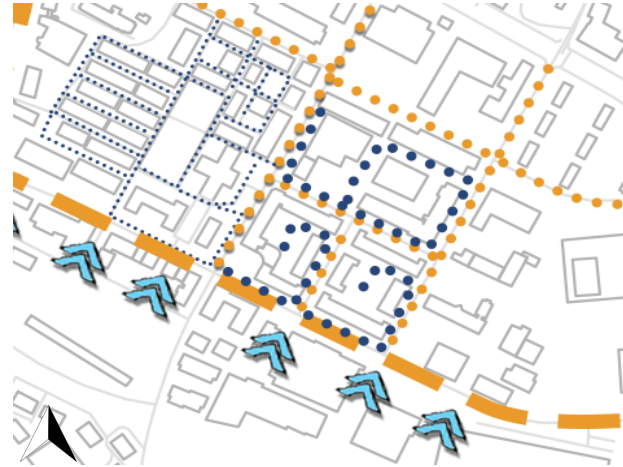


Figure 12: Løren's mesh layout and accessibility map.



Figure 14: Løren's eastern edge



Figure 13: Løren's access network and limitations on the East

4.3.1 Løren

Although Løren benefits from commercial and residential functions, it lacks social-commercial and non-commercial gathering places. The neighbourhood's main square, Løren Torg, is a popular gathering place for different age groups and a central location for public events throughout the year (Figure 15).



Figure 15: Løren Torg

4.3.2 Spatial Characteristics of the built environment

Two different types of urban morphology and layout are visible in Løren. The neighbourhood's most western and northern parts have an old urban structure, characterised by one or two-story house plans with backyards and a low-density urban form. However, from the inner part of the neighbourhood (mostly) towards the north, densification is in progress, characterised by high-rise apartment buildings and inner yards. The neighbourhood's central area is where the old layout of the city meets the new compact structure. Lørenparken, Løren Torg and the commercial edges characterise it (Figure 16).



Figure 16: Old and new urban morphology in Løren

Figure 18

4.3.3 Scale & dimension

In the central part of Løren, high-rise buildings are built close to each other without enough space between them. This configuration has heavily enclosed the inner yards and lowered the scene's average lightness (Figure 17). Figure 18 shows a twenty-by-fifteen-meter inner yard enclosure with fifteen to eighteen meters high walls (Figure 18). In this setting, the proportion of children's views covered by walls is high, and their depth of view is low (Figure 19). Although two playgrounds have been built in these courtyards, the space is out of scale and not inviting for children. They were not observed playing here during the fieldwork (Figure 20).



Figure 17: Small inner yards have led to the dominance of the buildings over the playground in the central part.

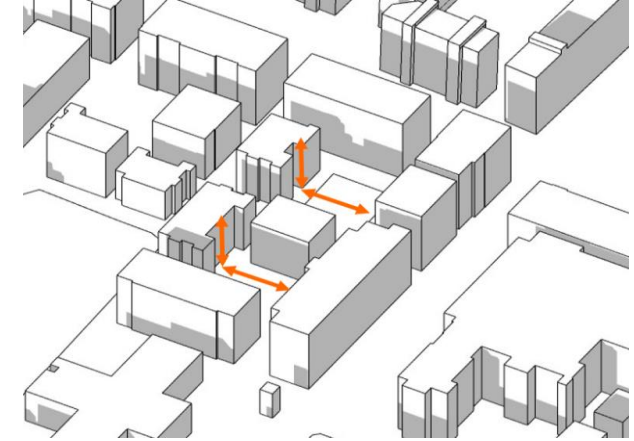


Figure 18: The Unsuitable width to height ratio.

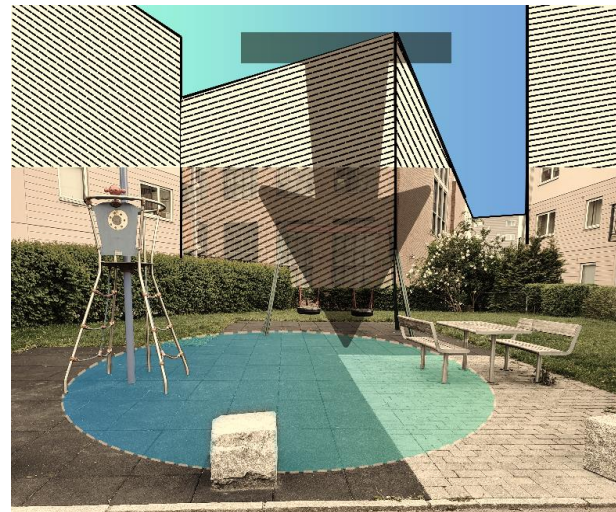


Figure 19: The dominance of the surrounding walls on the playground has led to the children's low depth of view.



Figure 20: Playground abandoned by children.

4.3.3 Scale & dimension

Lørenparken, located in the middle of several housing blocks, is the neighbourhood's only park (Figure 21). It benefits from a suitable width-to-height ratio (Figure 22). While providing desired enclosure, the park does not limit children's field of view. In addition, it offers them a high depth of view through which children can perceive the ground and sky and feel enclosed simultaneously. This is the opposite of the situation in the earlier-mentioned residential blocks. In Lørenparken, the scene's overall lightness and the child-scaled dimensions of the park have made it a pleasant destination for children and their parents (Figure 23).



Figure 21: The inviting environment of Lørenparken

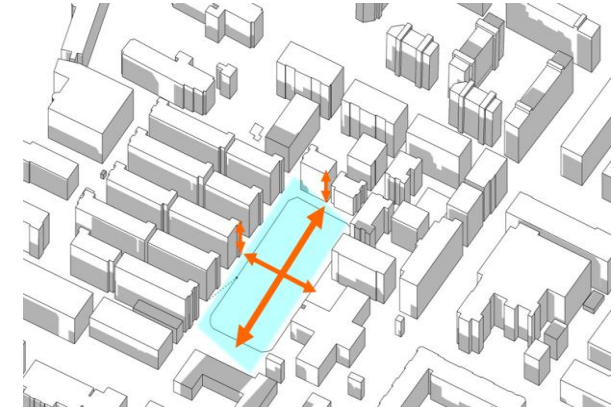


Figure 22: The location of Lørenparken



Figure 23: Width-to-height ratio has lightened the scene

4.3.3 Scale & dimension

In addition to having an open field of view, the child-scaled spatial dimensions of Lørenparken allow children to benefit from favourable environmental conditions, such as playing in the sun or enjoying the breeze of the pleasing wind (Figure 24). Lørenparken and the playgrounds in the middle of the residential buildings are two inner yards with different spatial characteristics (Figures 25 & 26). Comparing the two adjacent locations highlights the different environmental conditions they create. Lørenparken allows sunlight to penetrate the environment, while the inner yards are incapable of that due to their high surrounding buildings (figure 27).

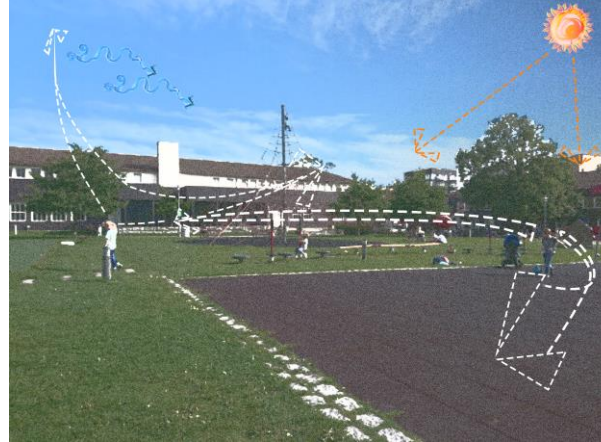


Figure 24: Offering wide fields of view to children.



Figure 26: Lørenparken and Løren Torg form the neighbourhood's centre.

Lørenparken Playground

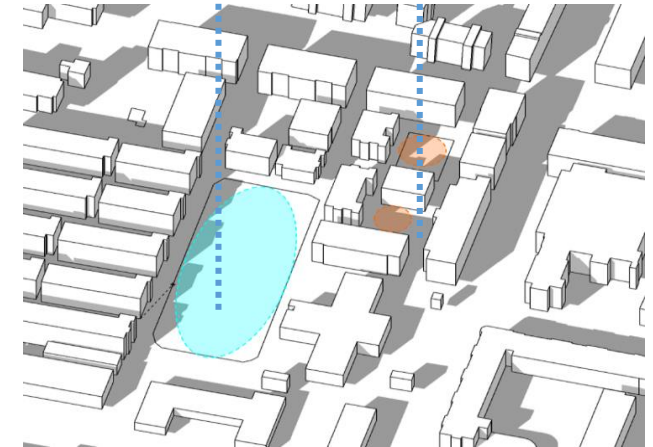


Figure 25: Lørenparken in the middle of a residential block has created a suitable environment

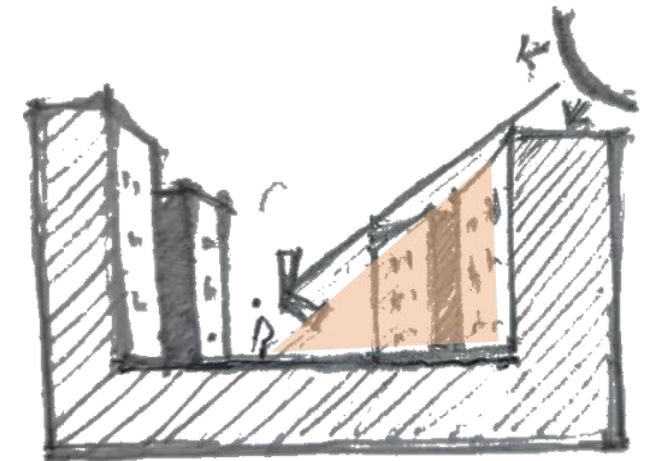


Figure 27: Enclosed space in the middle of the high-rise residential blocks.

4.3.3 Scale & dimension

In the south of Løren, Hasleparken attracts visitors from Løren. The park lies between several residential blocks, and despite having no playground equipment, it is a popular gathering area for children and parents (Figure 28). The park is sixty-six by forty-three meters, surrounded by five-story buildings on the north and west and three-story buildings on the east (Figure 29). In Hasleparken, the park's southern border is not enclosed by a structure but by a line of trees. Having one side open in front of the scene while providing an enclosure increases the depth of view and adds to the lightness of the space (Figure 30).

Lørenparken

Hasleparken



Figure 28: Hasleparken and Lørenparken

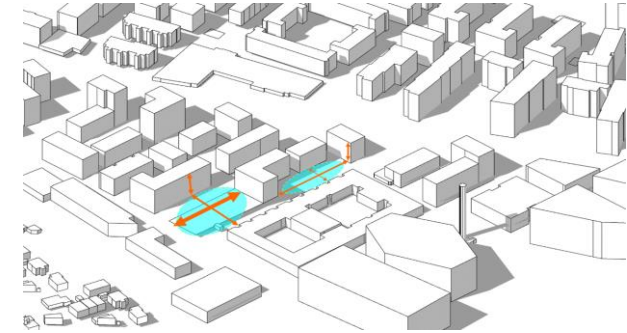


Figure 29: Hasleparken's spatial proportions



Figure 30: Hasleparken's southern open border.

4.3.3 Scale & dimension

Sinsenparken in the west of Løren is accessible to the residents by an approximately ten-minute walk from the centre of the neighbourhood (Figure 31). Despite having no play equipment, the park attracts children and parents. Having three open sides, children enjoy the park's natural environment (Figures 32 & 33).

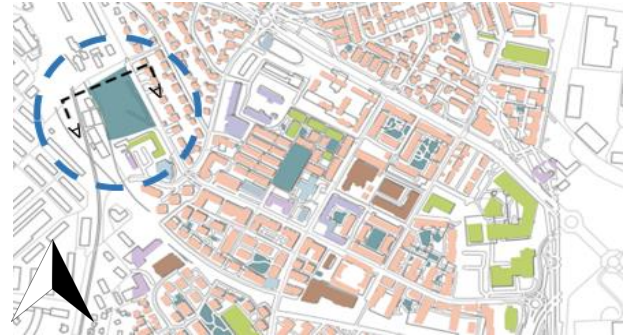


Figure 31: Sinsenparken's location



Figure 32: Sinsenparken in Sinsen neighbourhood

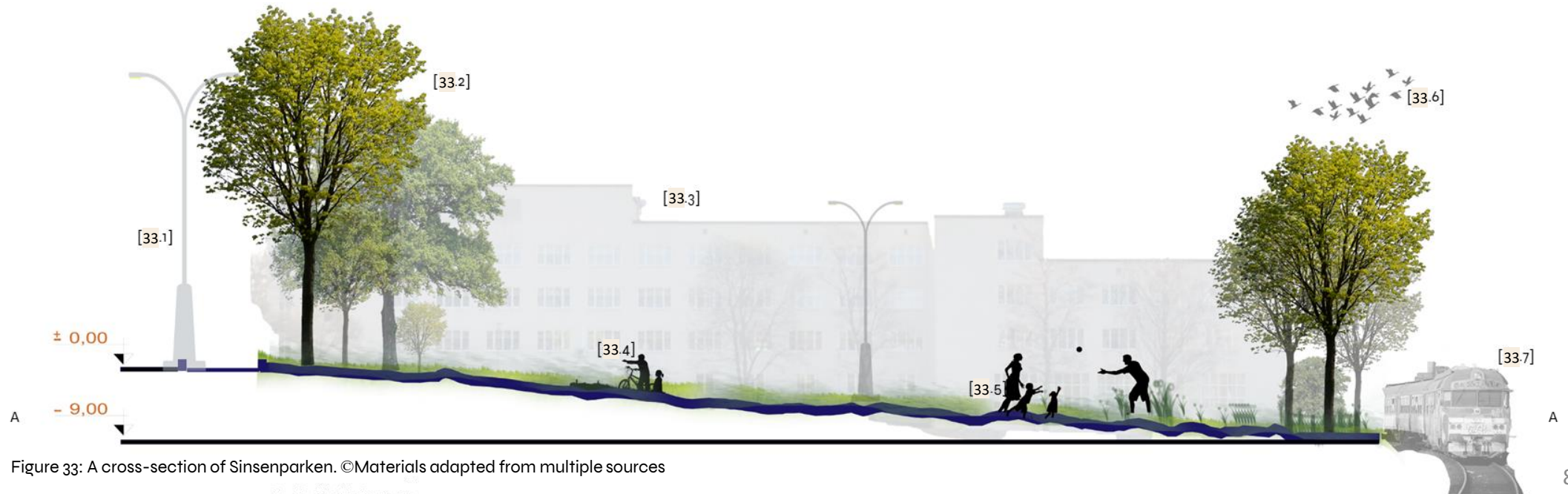


Figure 33: A cross-section of Sinsenparken. ©Materials adapted from multiple sources

4.3.4 Multifunctionality

The multifunctionality of urbanscapes improves the quality of life and increases the existing spaces' functional efficiency (Ghafouri & Christiane, 2020). In the fieldwork, it was observed that parents take their children to places where they can occupy themselves simultaneously. The Løren neighbourhood centre has a multifunctional layout (Figure 34). It attracts different users. Løren Torget and Lørenparken attract the most comprehensive range of users (Figure 35). Meanwhile, despite having playground equipment and proximity to the centre, single-functional areas fail to attract children or their parents (Figures 36 & 37).



Figure 34: Løren's functions in the Neighbourhood centre.



Figure 35: A multi-functional space in Løren

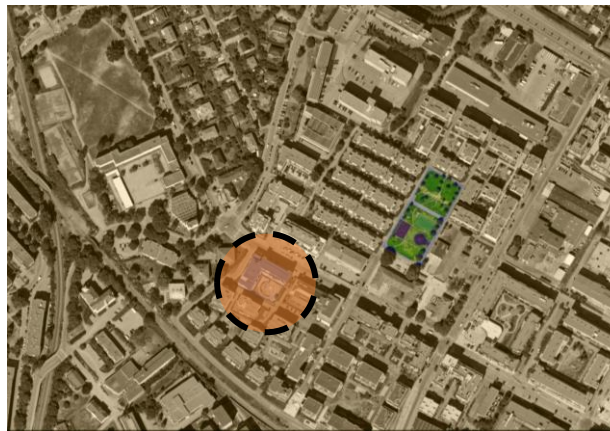


Figure 36: A single-functional space in Løren



Figure 37: A single-functional space in Løren

4.3.5 Safety

Mixed land use and multifunctional urban areas increase people's flow, increasing safety accretion in the urbanscape. Generally, children feel safer in places where people commute. In Løren, it happens on its multifunctional edges, which are primarily located in the centre (Figure 38). Outdoor benches, overlooking windows, balconies, cafes' expansive windows, and gathering spots contribute to the public observation of children in urban spaces (Figure 39). However, in places such as Lørenveien East, the built environment lacks the mentioned qualities, leading to streets with almost no pedestrians (Figures 40 & 41).



Figure 38: Multifunctional spaces and adults' presence.



Figure 39: Overlooking windows and shop fronts.

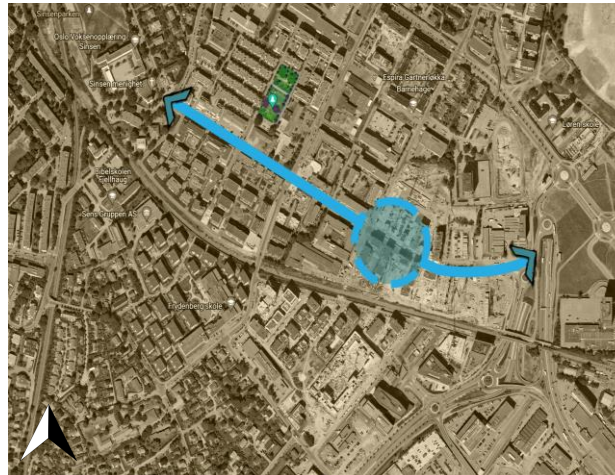


Figure 40: Lørenveien East



Figure 41: Lørenveien East

4.3.6 Safe Play

The risk-averse modern society, which emphasises safety over risk-taking play spaces, has led to the implementation of playgrounds that children avoid. In Løren, it was observed that play spaces with restricted movement possibilities are abundant (Figure 42). Limited opportunities for exploration, discovery, and excavation in nature and the presence of asphalt or cement surfaces and plastic and metal materials characterise these playgrounds (Figure 43). Even where the spatial qualities corresponded to children's sizes and magnitude, limited play in safe playgrounds was observed to be unattractive to children (Figure 44).



Figure 42: Fenced-out playground in Løren.



Figure 43: Asphalt and rubber playgrounds offer limited play options.

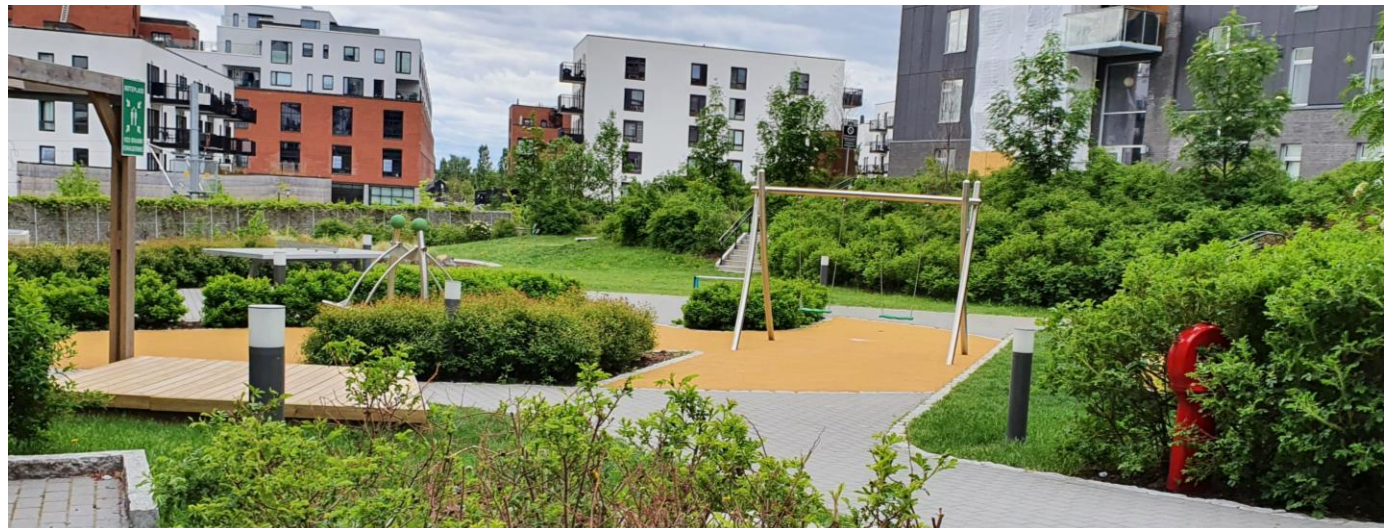


Figure 44: Playground with a limited number of play opportunities.

4.3.7 Independent Mobility & Linkage to surroundings

Children in Norway enjoy a high degree of independent mobility, and Løren is no exception. However, their independence has shrunk due to the heavy construction of residential complexes and the car-oriented lifestyle. In Løren, roads and highways limit the neighbourhood on the east side (Figure 45). The impenetrable hard edges and the road density restrain pedestrian mobility (Figure 46). In the fieldwork, children were not visible in this part of Løren. Additionally, adults were also rarely visible here. The neighbourhood has soft edges on the Western side within its uninterrupted pedestrian network (Figures 47 & 48).



Figure 45: Low level of permeability on the Eastern border.



Figure 46: Multi-lane highway in Southeast of Løren.



Figure 47: High level of permeability on the Western side



Figure 48: Soft edges in West Løren.

4.3.7 Independent Mobility & Linkage to surroundings

Although children in Løren are granted a high degree of independent mobility, the built environment constraints them in some places, especially in the Northern and Eastern borders (Figure 49). The lack of attention to children’s physical capabilities and comfort and the absence of pause spots are repeatedly observed in these areas (Figure 50). Additionally, narrow sidewalks with car-dominated streets lower children’s mobility (Figure 51). On the contrary, the neighbourhood’s central part and southern border (yellow circles) of Løren have wider sidewalks, pausing spots, and car-free areas. They are equipped with mixed land use qualities promoting children’s mobility (Figure 52).

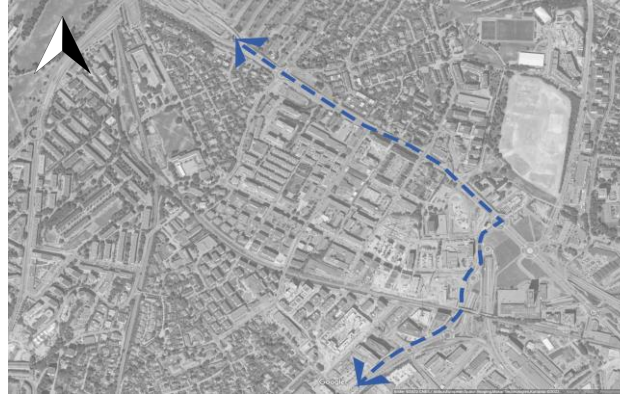


Figure 49: Løren’s network of streets



Figure 50: Not suitable for children



Figure 51: Not suitable for children



Figure 52: Suitable for children

4.3.8 SWOT Løren

Løren	Strength	Weakness	Opportunities	Threats
Safety	<ul style="list-style-type: none"> • Safe urban environment • Pedestrian-oriented paths • Up-to-date facilities • Safe playscapes 	<ul style="list-style-type: none"> • Car-oriented streets • Car accident concerns at the borders • Limiting playscapes 	<ul style="list-style-type: none"> • Expanding the number of pedestrian-oriented streets. • Creating natural playscapes 	<ul style="list-style-type: none"> • Preventing children from fully unleashing their curiosity • Taking out the risk management ability from children • Limiting children to indoor activities
Independent Mobility	<ul style="list-style-type: none"> • Proximity to public transport • Continuous pedestrian network • Pedestrian-oriented centre 	<ul style="list-style-type: none"> • Weak pedestrian access from the East and North. • Limiting built environment despite children having parental licences • Lack of pause areas 	<ul style="list-style-type: none"> • Improving the built environment to utilise the parental licences for children's independent mobility 	<ul style="list-style-type: none"> • Car-oriented streets continue to grow and limit children's independent mobility
Spatial Characteristics of the built environment	<ul style="list-style-type: none"> • Human-scale design • Central green space • Multifunctional edges • Play spaces • Proximity to neighbouring open spaces 	<ul style="list-style-type: none"> • None human-scaled areas • Limited green space (only 1) • Limited multifunctionality (only the centre) 	<ul style="list-style-type: none"> • The possibility of using neighbouring spaces to create playscapes • Redesigning the central street (Lørenveien) 	<ul style="list-style-type: none"> • The growth of high-rise residential blocks limits the available spaces for children

Table 5: SWOT Løren

4.3.9 Mosalla

Mosalla is a historic neighbourhood with an area of approximately 580,000 square meters. Due to urbanisation, expansion, and using motorised vehicles, its old layout has undergone several changes. Although the inner parts of the neighbourhood are primarily intact, four streets on its perimeters have interrupted its old pedestrian-centred network of walkways. Mosalla has a community centre in the middle and two gathering places on its eastern border. It is a residential neighbourhood with commercial buildings on its edges and educational and cultural facilities within its borders (Figure 53).

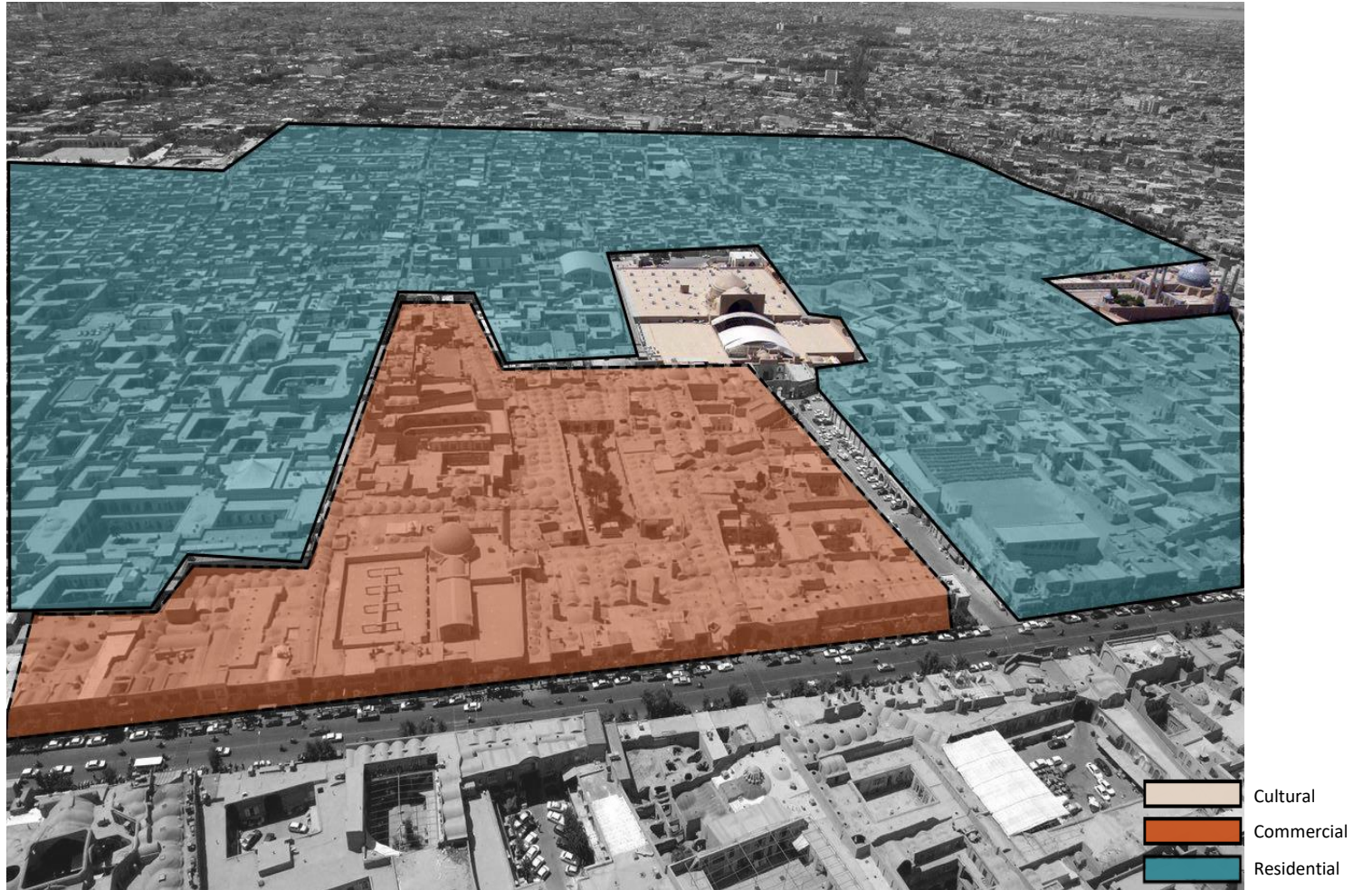


Figure 53: Neighbourhood functions.

4.3.10 Spatial Characteristics of the built environment

Mosalla has an old desert urban layout. The hot and dry climate has heavily influenced the morphology of the neighbourhood. The entire area comprises one- or two-story buildings with inner yards (Figure 54). The harsh climate conditions have resulted in clever spatial solutions, such as a network of narrow, semi-covered alleys which provide shade and prevent sandstorms from entering the neighbourhood (Figure 55). Moreover, multifunctionality is visible in Mosalla. The neighbourhood benefits from various functions connected via the access network (Figure 56).

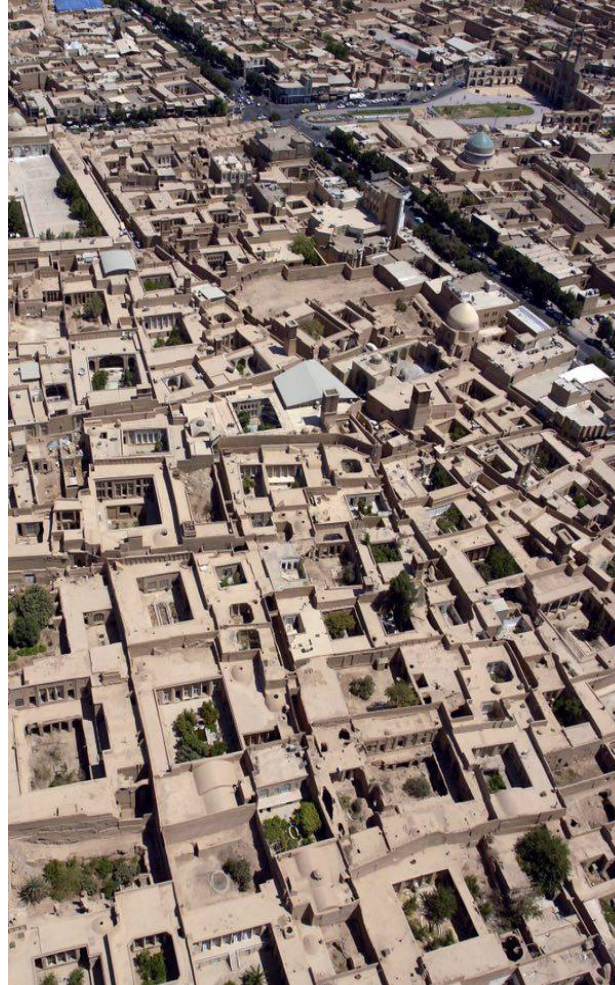


Figure 54: Neighbourhood's compact urban form



Figure 55: Alleys' network

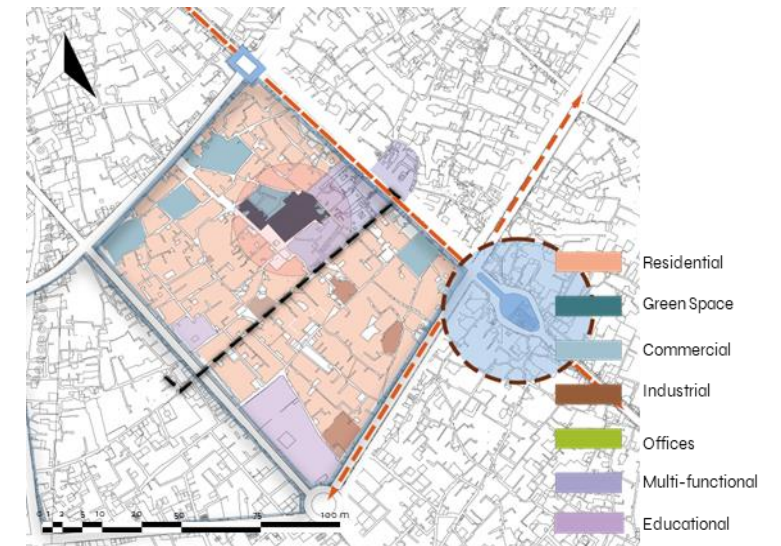


Figure 56: Mosalla's different functions

4.3.11 Scale & dimension

The Amir Chakhmaq Complex, at the Southeast corner of the neighbourhood, serves as an important gathering area (Figures 57 & 58). Although modernisation has altered the plaza's original form in recent decades, the surrounding pattern and area's character still attract children and other community members. A 150 by 60 meters yard in front of the plaza breaks down the scale (Figure 59), and 5 meters of surrounding walls create a pleasant enclosure (Figure 60).



Figure 57: Amir Chakhmaq Complex

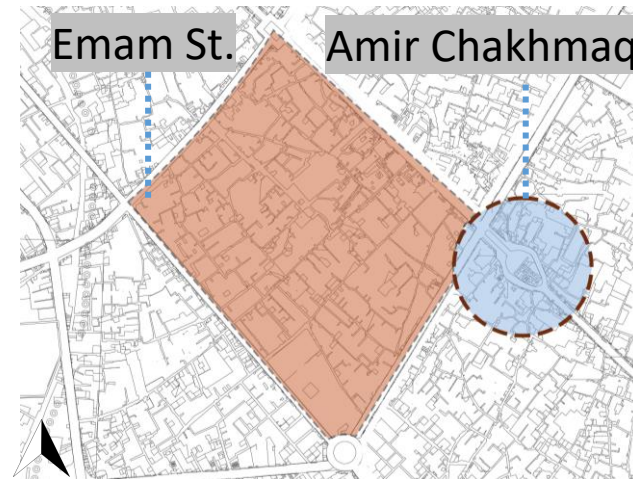


Figure 58: Amir Chakhmaq's location

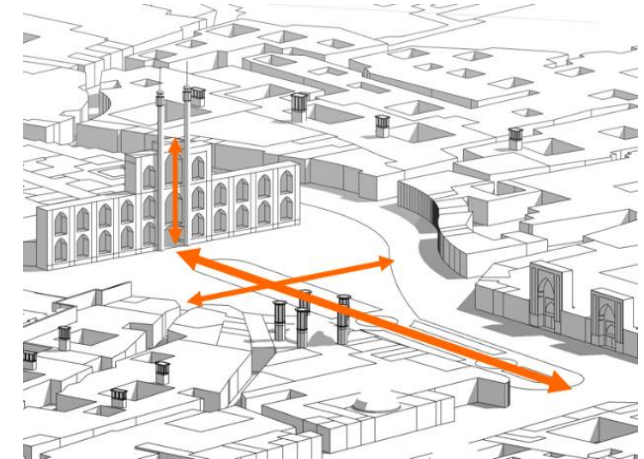


Figure 59: Built to unbuilt space ratio

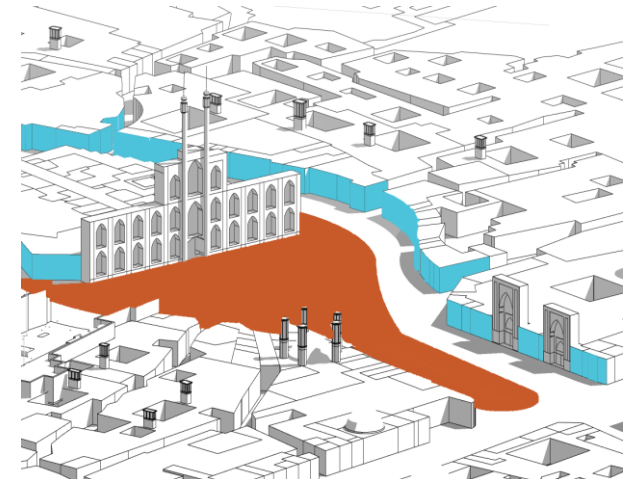


Figure 60: Pleasing enclosure.

4.3.11 Scale & dimension

The Mulla Ismael Mosque, at the centre of Mosalla neighbourhood, works as a cultural destination and community centre (Figure 61). It is a significant attraction in the area and city. The large central yard allows children to play and interact while the surrounding walls enclose them and offer shadow (Figure 62). The spatial dimensions of the building offer children an open field of view, a valuable quality for children living in this compact urban neighbourhood (Figure 63).



Figure 61: The suitable width-to-height ratio provides a suitable enclosure.



Figure 62: The Mulla Ismael Mosque



Figure 63: Offering wide fields of view to children.

4.3.11 Scale & dimension

The historic human scale of Mosalla has not been altered. Most buildings are one- or two-story buildings, making it easier for children to interact with the built environment.



Figure 64: Mosalla neighbourhood

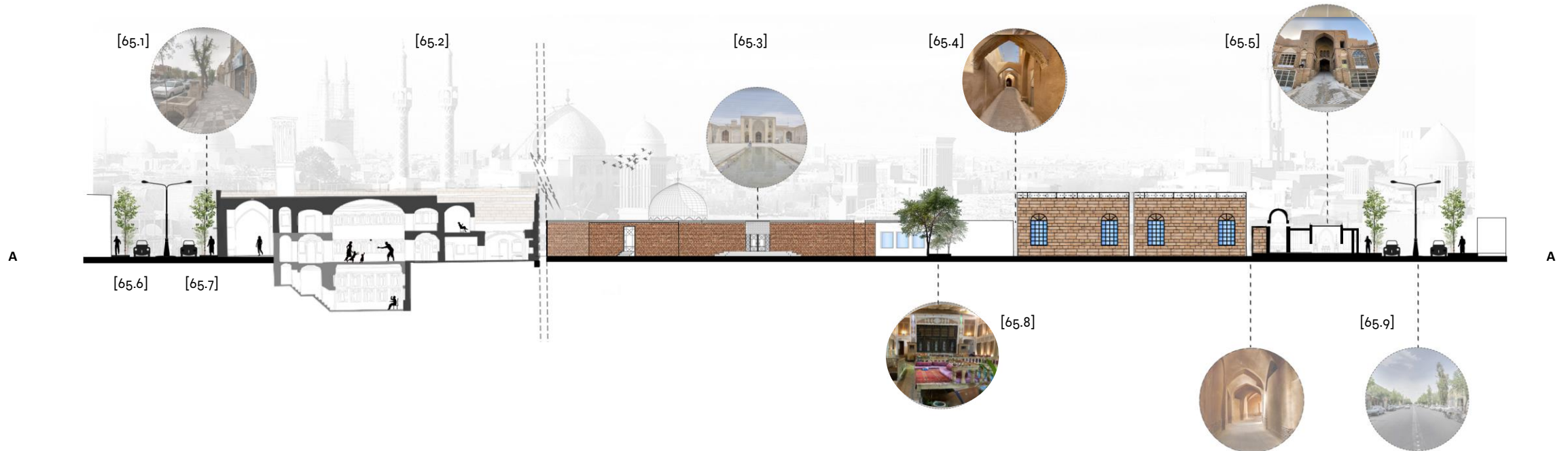


Figure 65: A cross-section of Mosalla, highlighting gathering spots and the connecting network of alleys. ©Materials adapted from multiple sources

4.3.12 Multifunctionality

Multifunctional neighbourhoods are common in historic parts of Yazd. Mosalla has a mixed land use pattern which consists of commercial edges, an inner residential part, a cultural centre, and two educational areas (Figure 67). Additionally, in this neighbourhood, its nod carries the same multifunctional character. Amir Chakhmaq plaza has two cultural places, commercial edges and children's open play spaces (Figure 68). The proximity to residential areas and having open natural play spaces (although limited) attract children. At the same time, adults can find different activities leading to the flow of people (Figure 66).

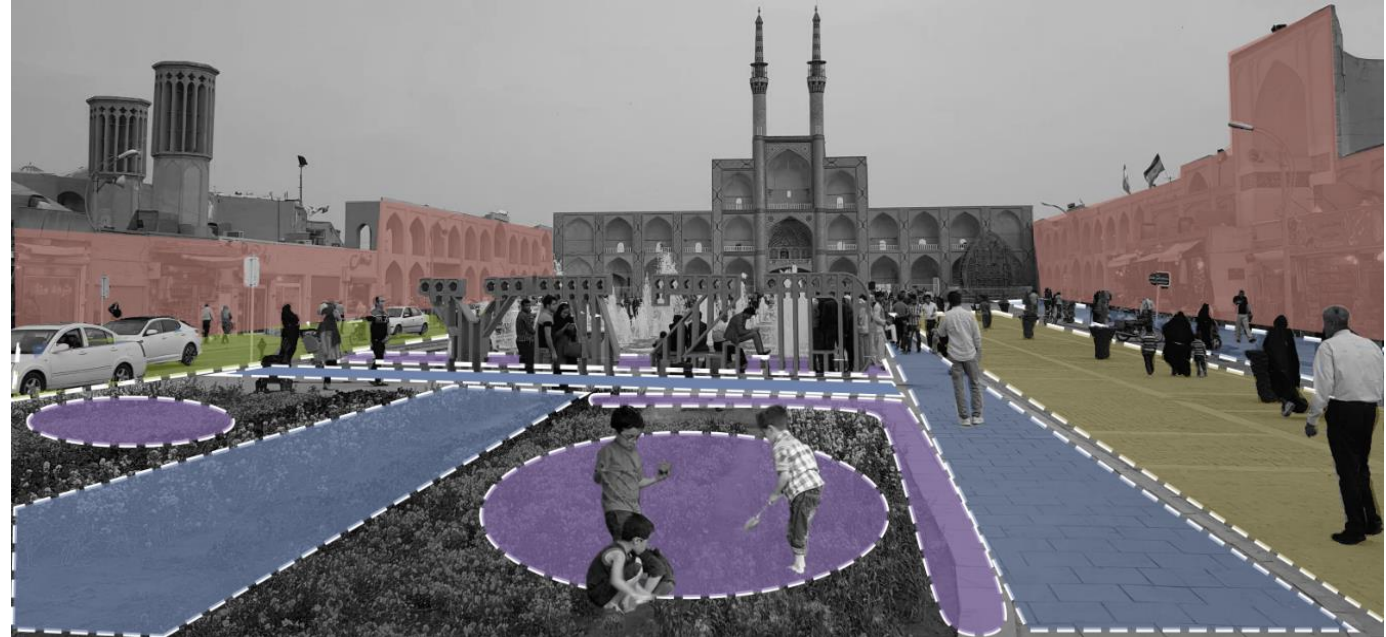


Figure 66: A multi-functional space in Mosalla



Figure 67: Different functions in Mosalla

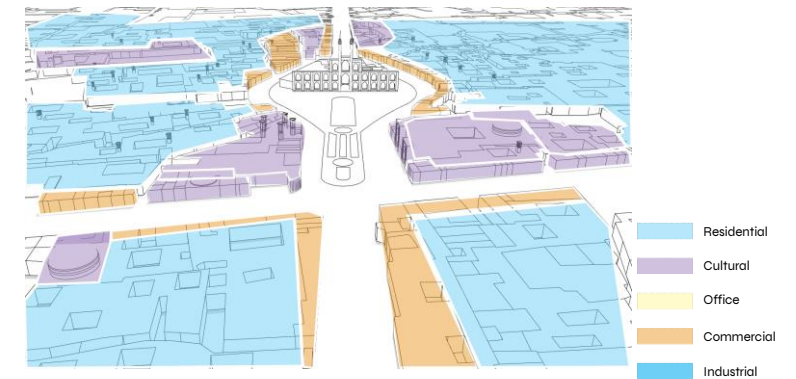


Figure 68: Multifunctional and single functional spaces in Mosalla

4.3.13 Safety

In Mosalla, the observing eyes concept is built into the built environment. Windows that look over the alleys, houses with built-in benches at the entrance, multifunctional public spaces, and a network with a hierarchy of access help children feel safe in public (Figures 69 & 70). Mosalla suffers from the lack of playgrounds. The safety of inner parts of the neighbourhood has contributed to minimising that problem by allowing children to play throughout the neighbourhood (Figure 71). In urbanscapes, traffic safety is the leading cause of children's lack of outdoor activities. In Mosalla, the built environment has solved this problem by offering a car-free, semi-private, and safe network of paths.



Figure 69: Windows that look over the alleys



Figure 70: Sitting places built into the architecture

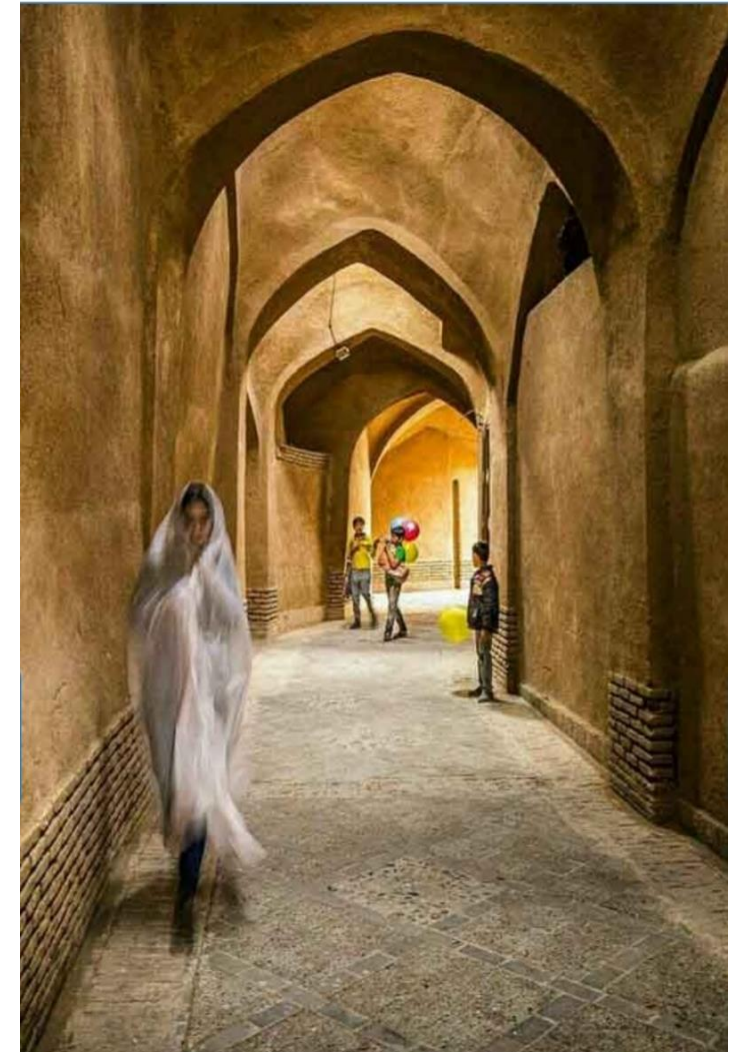


Figure 71: Mosalla's alleys as children's playground

4.3.14 Independent Mobility & Linkage to surroundings

The recent modifications of the neighbourhood have damaged its linkage to the surroundings. Due to being bordered by four wide streets, children's movement is limited to inside the neighbourhood (Figure 72). On the inside, Mosalla has a good network of uninterrupted walkable alleys. Visual corridors encourage movement, and attractive destinations arouse the curiosity for exploration of the urban space in children (Figures 73 & 74). The neighbourhood lacks an uninterrupted pedestrian network, and because the surrounding streets have cut through the – historic larger – area, children get exposed to car-oriented streets the moment they leave the inner part of Mosalla (Figure 75).

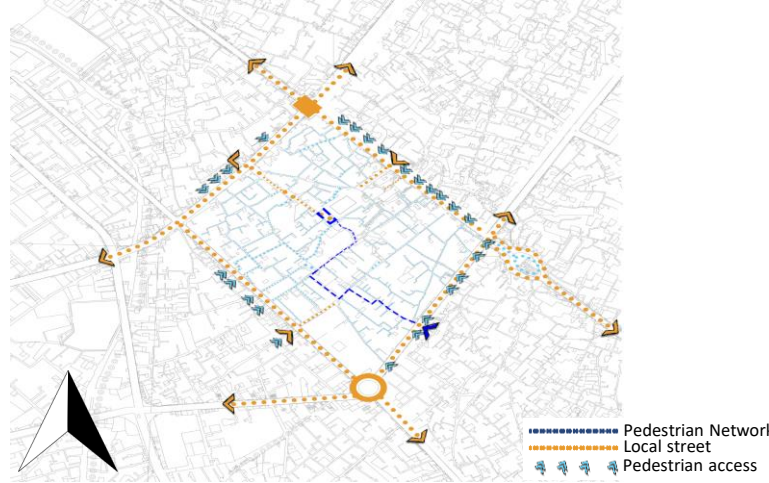


Figure 72: Mosalla's borders.

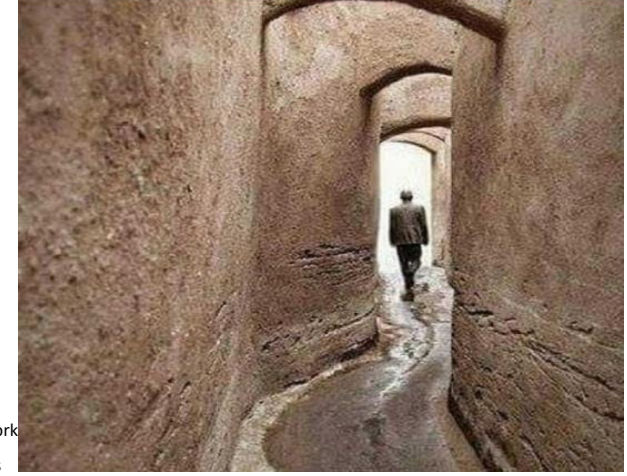


Figure 74: Encouraging movement

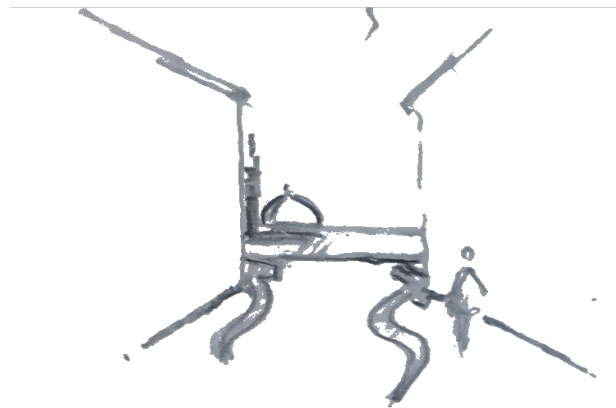


Figure 73: Arousing the curiosity



Figure 75: Car-oriented street

4.3.15 SWOT Mosalla

Yazd	Strength	Weakness	Opportunities	Threats
Safety	<ul style="list-style-type: none"> • Observing eyes • Semi-private alleys • Pedestrian-friendly network of paths 	<ul style="list-style-type: none"> • Limited safety • Security issues 	<ul style="list-style-type: none"> • Expanding the safety coverage to larger areas than the inner part of the neighbourhood 	<ul style="list-style-type: none"> • Increasing safety concerns due to the country's economic situation
Independent Mobility	<ul style="list-style-type: none"> • Existing pedestrian network • Safety 	<ul style="list-style-type: none"> • Being cut off by the new road system • Difficult access for the emergency vehicles 	<ul style="list-style-type: none"> • Reactivating the historic pedestrian-friendly network • Creating a continuous access network outside the neighbourhood 	<ul style="list-style-type: none"> • Widening of the inner alleys due to the development programmes
Spatial Characteristics	<ul style="list-style-type: none"> • Multi-functional neighbourhood • Human-scaled design • Environmental-based formation of the neighbourhood 	<ul style="list-style-type: none"> • Lack of green space • Lack of play facilities 	<ul style="list-style-type: none"> • Making the neighbourhood into a safe playscape 	<ul style="list-style-type: none"> • Development plans changing the spatial characteristics

Table 5: SWOT Mosalla

5. Discussion

There are different ways to create child-centred urbanscapes depending on the context. Each country and region has a unique situation that requires context-based approaches. Nonetheless, there is a general agreement that investing in early childhood is rewarding. It has been proven that child-related investments in urbanscapes have higher economic returns than any other investments at later stages in life (Heckman, 2008). By 2050, seven in every ten people will reside in urban areas, thirty per cent of which will be under eighteen. It is noted that this group is not included in most land use planning practices. Additionally, the influence of the urbanscapes on their development needs

to be better understood in many countries. Thus, the central question of the thesis is: *“What urbancape qualities are essential for children to thrive, and how can designers implement them?”*

To answer the question, factors influencing early childhood development in urbanscapes were identified within theoretical knowledge: the built environment qualities, context, play, participation, social interactions, safety, and independent mobility. Furthermore, investigating within practices highlighted attention to children's primary rights as a central objective among child-centred approaches, which manifests in the Child-Friendly Governance framework.

Through this framework, governments address issues such as providing shelter for homeless and street kids, access to food and drinkable water, and safety. However, not all countries work at the same level. It is visible that high-income countries tend to utilise programs that promote children's freedom of movement and the quality of their built environment. Meanwhile, low-income countries are more focused on addressing children's fundamental rights and their immediate issues, such as the issue of shelter, education, risk exposure, and violence. Nevertheless, high- and low-income countries are practising methods to promote education and combine it with play.

5. Discussion

This keeps children physically active and utilises the educational potential of their play. Moreover, countries are noticing the effect of natural environments on children. Despite these recognitions, children's mobility in urbanscapes and child-friendly locations constantly decreases worldwide. Safety issues and the built environment limitations are the leading causes. Safety is a fundamental necessity, and it is more practical when policymakers begin by addressing the fundamentals and gradually make their way up to handle other child-related issues. Initiatives that create and operate within a network of supportive systems, such as cities, neighbourhoods, and schools, more effectively cover a

broader range of issues.

By analysing the case studies, it was understood that children are attracted to spaces that provide unrestricted movement and exploration opportunities. This desire is especially ignored in prefabricated playgrounds and small courtyards surrounded by high-rise residential apartments. Not only do these spaces not correspond to children's desires, but their scales also prevent children from enjoying natural elements such as sunlight. These are determining factors for children to abandon these spaces and commute to nearby natural environments. However, a pedestrian network is essential to connect children to these spaces.

An uninterrupted network complemented with attention to children's physical abilities in designing the paths and providing pausing/resting spots and attractive destinations. These factors encourage users to walk more, go further, and discover the next corner, leading to a profound experience of the urbancape. But children will not attend such spaces - despite the attraction - unless they feel safe. Safety is a critical quality in urbanscapes that can be promoted through the capacities of the built environment. Multifunctionality, commercial-oriented edges, and mixed land use invite different people to urban spaces and increase the perception of safety in children.

5. Discussion

In addition, these spaces offer more activity choices which are desirable for parents taking out their children. Children's movement and exploration in urbanscapes happen when the area is safe, has child-responsive spatial measurements, and has a desirable openness-to-enclosure ratio. It is important to note that there is no single guideline for creating a child-centred urban landscape but rather a set of principles and ideas. Furthermore, addressing children's needs requires collaboration across government agencies – such as planning, health, education, social welfare, environment, and transport – at national and regional scales with dedicated staff and shared data.

The next chapter recommends principles based on this research to create a better urban landscape for children.

6. Recommendation

6.1 Climate Based Design

In the case of Yazd, it was visible that children avoid sunlight, and the urbanscape provides places to protect them from sunlight. This was also visible in Oslo, where children prefer to play under the sunlight. Although the old structure of Løren responded to this demand, it was observed that the new design (in some places) failed to do so. In Mosalla and Løren, children were visible in areas that were comfortable to spend time there. Therefore, it is recommended that designers consider desired climate conditions in their designs. For example, in Løren, sunlight can reach the middle yards by placing the residential blocks further away from each other (Figure 76).

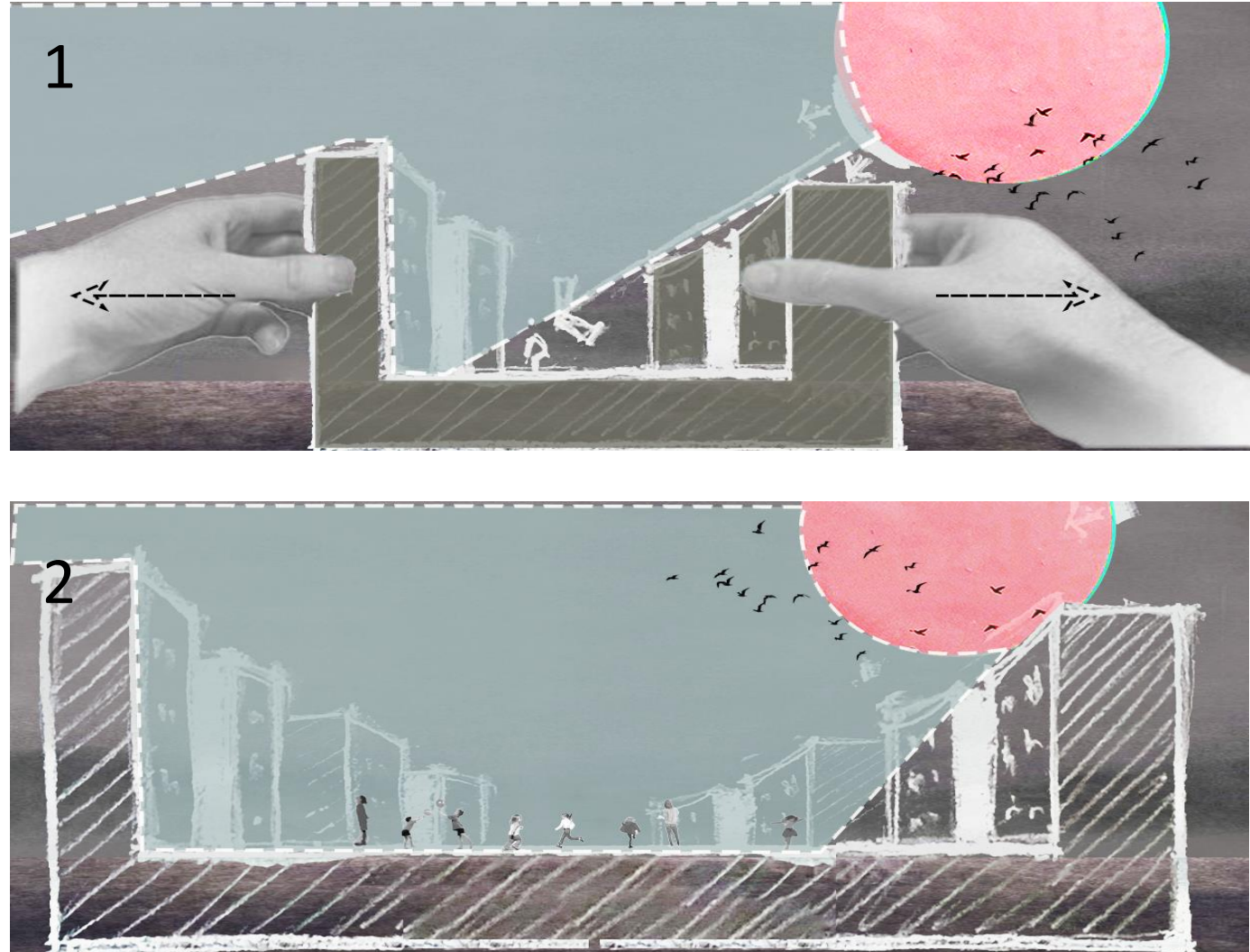


Figure 76: Climate Based Design

6.2 Uninterrupted Pedestrian Network

Children in Løren can walk farther compared to children in Mosalla. A continuous network of walkable paths is their main difference. It enables children in Løren to walk more and reach their desired destinations in the adjacent neighbourhoods. The lack of this quality has limited the movement of children in Mosalla. This network invites the child to walk and should be responsive to their limitations. Including resting places along the way and creating visually attractive pathways to encourage children to continue walking are examples of responsive features (Figure 77).

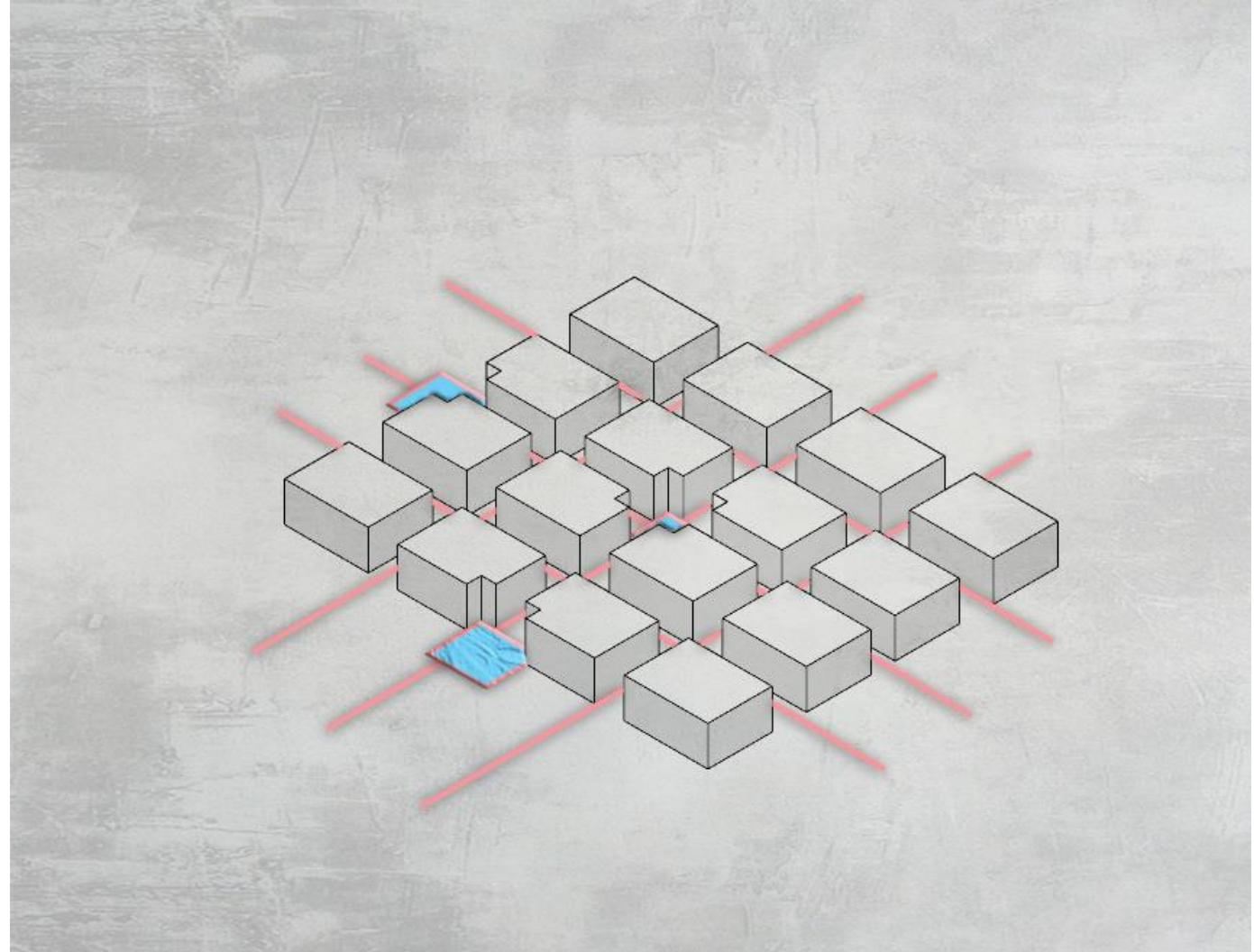


Figure 77: Uninterrupted pedestrian Network

6.3 Multi-functional Urbanscapes

The multi-functionality of urban spaces is beneficial in every context. It brings safety for children, activity choices for their parents, customers for the nearby businesses and social interaction for the whole community. It also enhances the citizens' quality of life by ensuring increased opportunities for optional and social activities in urbanscapes (Ghafouri & Christiane, 2020). A multifunctional urban landscape should be a network of different urban spaces for various activities. Green spaces provide a valuable ground for forming multifunctional urbanscapes and changing the quality of life for the neighbourhood's children and other citizens (Figure 78).



6.4 Safety by the Built Environment

The presence of supervisors in children's play spaces is an influential factor in increasing children's use of urban areas. In the alleys of Yazd, the observing eyes concept turned the spaces into playscapes for children. Having windows overlooking the public space or benches at the houses' entrances for people to sit decreases the probability of crimes against children in Mosalla. Although it can be challenging to transfer this idea to high-rise buildings, providing balconies, openings, or windows overlooking the public space will have the same effect. Moreover, creating activities at the ground level will bring more observing eyes on children (Figure 79).



Figure 79: Residential building overlooking the public space

6.5 Breaking Down the Perceptual Scale

Due to the growth of the urban population, there is no escape from high-rise buildings, but there are ways to reduce the dominance of these buildings. Recesses and retreats in the structure of the buildings make them lighter to children's eyes. However, breaking down the scale is not enough. At any given time, different children with different sizes, abilities and age groups are present in urbanscapes. Therefore, urbanscapes should be at multiple scales meaning having something to offer to various groups of children at once. Adding design details to buildings at different heights with different materials makes this idea feasible (Figure 80).

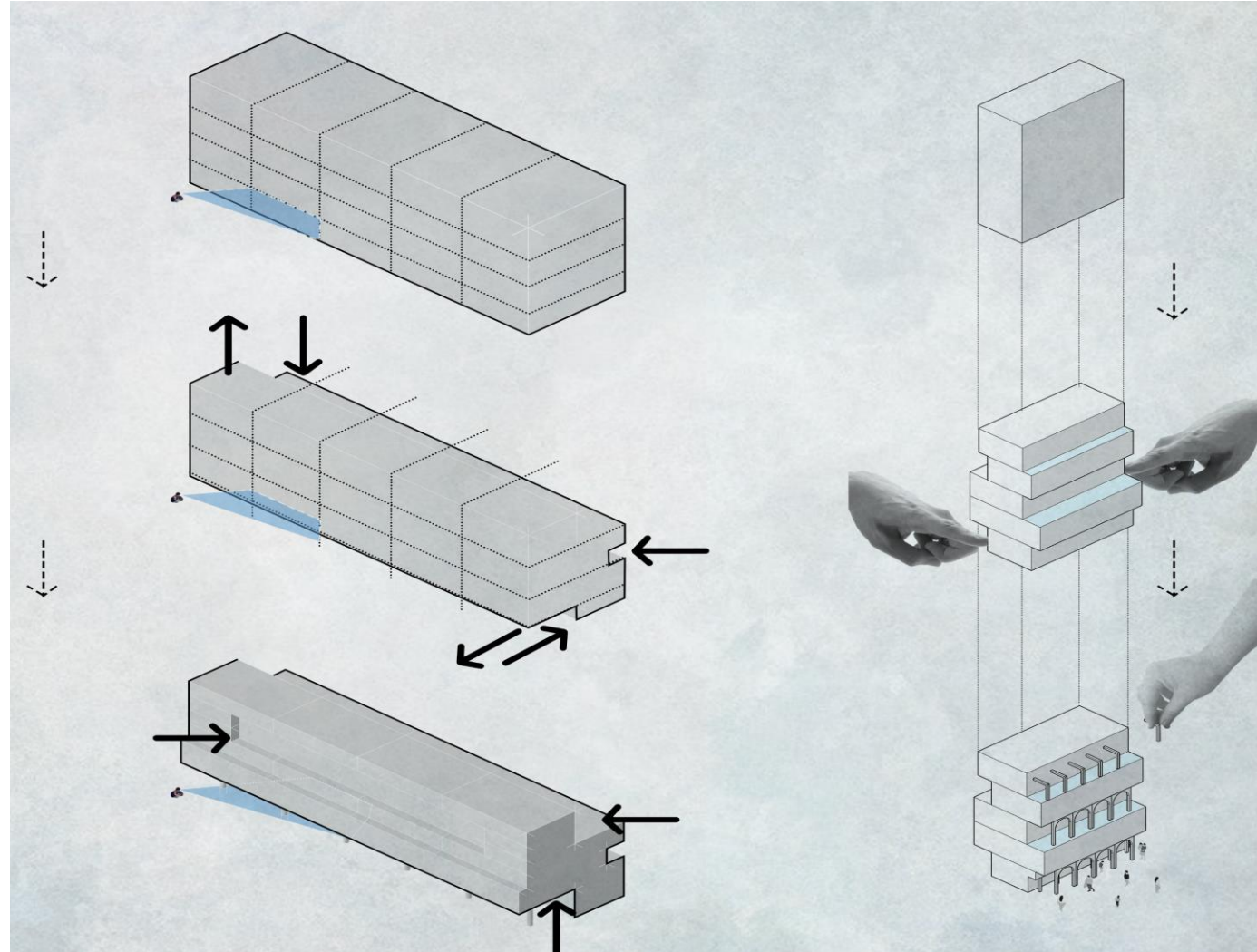


Figure 80: Breaking Down the Perceptual Scale

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7.2 Figures

Figure 1: Illustration by the author, [1.1] background world map sourced from: <https://www.vecteezy.com/vector-art/142990-vector-world-map>, [1.2] background Iran map sourced from: <https://www.vecteezy.com/vector-art/142990-vector-world-map>, [1.3] Iran map sourced from: <https://vemaps.com/iran/ir-02>, [1.4] Yazd map sourced from: <https://shahrsazi.yazd.ir/-/%D9%86%D9%82%D8%B4%D9%87-%D9%87%D8%A7%DB%8C-%D9%85%D8%AD%D8%AF%D9%88%D8%AF%D9%87-%D9%88-%D8%AD%D8%B1%DB%8C%D9%85-%D8%B4%D9%87%D8%B1-%DB%8C%D8%B2%D8%AF>, [1.5] Annual average weather diagram sourced from: <https://www.timeanddate.no/vaer/iran/yazd/klima>, [1.5] city skyline sourced from: <https://www.dreamstime.com/stock-illustration-cityscape-building-line-art-vector-illustration-design-yazd-city-image92236792> ©Anan Punyod

Figure 2: Illustration by the author, Yazd map sourced from: <https://shahrsazi.yazd.ir/-/%D9%86%D9%82%D8%B4%D9%87-%D9%87%D8%A7%DB%8C-%D9%85%D8%AD%D8%AF%D9%88%D8%AF%D9%87-%D9%88-%D8%AD%D8%B1%DB%8C%D9%85-%D8%B4%D9%87%D8%B1-%DB%8C%D8%B2%D8%AF>

Figure 3: Illustration by the author, Yazd map sourced from: Google. (n.d.). [Google map of Yazd City]. Retrieved November 22, 2022, from: <https://www.google.com/maps/@31.8969024,54.3647074,601m/data=!3m1!1e3>

Figure 4: Illustration by the author, Yazd map sourced from: Open Street Map. (n.d.). [Map of Yazd City]. Retrieved May 19, 2022, from: <https://www.openstreetmap.org/#map=16/31.8934/54.3629&layers=T>

Figure 5: Illustration by the author, [5.1] city skyline, sourced from: <https://unsplash.com/photos/tjguVu0GoEM> ©Christoffer Engström, [5.2] Norway map, sourced from: <https://www.vecteezy.com/vector-art/2550819-doodle-map-of-norway-with-states>, [5.3] Oslo map sourced from: <https://www.vectorstock.com/royalty-free-vector/oslo-map-detailed-map-city-poster-vector-37527292> ©Kostiantyn, [5.4] Annual average weather diagram sourced from: <https://www.timeanddate.no/vaer/norge/oslo/klima>

Figure 6: Illustration by the author, Oslo map sourced from: <https://www.vectorstock.com/royalty-free-vector/oslo-map-detailed-map-city-poster-vector-37527292> ©Kostiantyn

Figure 7: Illustration by the author, Oslo map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 8: Illustration by Selvaag Bolig, OsloMet, & Rodeo. (2019). *Lærdom Fra Løren, En Tverrfaglig Evaluering Av Utviklingen Fra 2002 Til 2019*. Selvaag Bolig.

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Figure 12: Illustration by the author, Oslo map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 13: Illustration by the author, Oslo map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 16: Illustration by the author, Oslo map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 17: Illustration by the author, Oslo Skråfoto sourced from: Gule Sider. (n.d.). [Oslo Skråfoto]. Retrieved November 11, 2022, from: <https://kart.gulesider.no/?c=59.933465,10.792794&z=0&l=oblique&orientation=N>

Figure 18: Illustration by the author, Oslo 3D map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 22: Illustration by the author, Oslo 3D map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 25: Illustration by the author, Oslo 3D map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 26: Illustration by the author, Oslo Skråfoto sourced from: Gule Sider. (n.d.). [Oslo Skråfoto]. Retrieved October 8, 2022, from: <https://kart.gulesider.no/?c=59.932475,10.792698&z=0&l=oblique&orientation=N>

Figure 28: Illustration by the author, Oslo map sourced from: Google. (n.d.). [Google map of Oslo City]. Retrieved December 5, 2022, from: <https://www.google.com/maps/@59.9300955,10.7940687,946m/data=!3m1!1e3>

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Figure 29: Illustration by the author, Oslo 3D map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 31: Illustration by the author, Oslo map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

Figure 32: Illustration by the author, Oslo Skråfoto sourced from: Gule Sider. (n.d.). [Oslo Skråfoto]. Retrieved December 14, 2022, from: <https://kart.gulesider.no/?c=59.933029,10.783950&z=0&l=oblique&orientation=W>

Figure 33: Illustration by the author, [33.1] png image designed by © macrovector available at freepik.com, [33.2] png image sourced from rawpixel.com, [33.3] background image retrieved June, 12, 2022 from: https://www.google.com/maps/@59.9339353,10.7850596,3a,44.2y,159.52h,93.3t/data=!3m7!1e1!3m5!1s1bdiGG7yb_pqmal_y-7yVA!2e0!6shttps:%2F%2Fstreetviewpixels-pa.googleapis.com%2Fv1%2Fthumbnail%3Fpanoid%3D1bdiGG7yb_pqmal_y-7yVA%26cb_client%3Dmaps_sv.tactile.gps%26w%3D203%26h%3D100%26yaw%3D98.290825%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192, [33.4] silhouette sourced from freesvg.org, [33.5] silhouette sourced from lycipart.com, [33.6] png image sourced from rawpixel.com, [33.7] image by © Kurayba retrieved from flickr.com available at <https://www.flickr.com/photos/kurt-b/8089095909>

Figure 34: Illustration by the author, Oslo 3D map sourced from: Cad Mapper. (n.d.). [Map of Oslo City]. Retrieved May 19, 2022, from: <https://cadmapper.com/pro/extracts/9962c6e0-6ae0-470b-9e42-5236517ac35a>

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Figure 47: Illustration by the author, Oslo map sourced from: Google. (n.d.). [Google map of Oslo City]. Retrieved December 14, 2022, from: <https://www.google.com/maps/@59.9334051,10.7858752,974m/data=!3m1!1e3>

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Figure 53: Illustration by the author, Image purchased from: Sell File. (n.d.). [Aerial photos of Historical Part of Yazd]. Purchased December 12, 2022, from: <https://reval.sellfile.ir/prod-1697780-%D9%85%D8%AC%D9%85%D9%88%D8%B9%D9%87+%DB%8C+%D8%AA%D8%B5%D8%A7%D9%88%DB%8C%D8%B1+%D9%87%D9%88%D8%A7%DB%8C%DB%8C+%D8%A8%D8%A7%D9%81%D8%AA+%D8%AA%D8%A7%D8%B1%DB%8C%D8%AE%DB%8C+%DB%8C%D8%B2%D8%AF.html>

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Figure 55: Image sourced from Google Street View. [Hamzeh Tavakoli], retrieved June 12, 2022, from: https://www.google.com/maps/@31.8957593,54.3652865,3a,73.6y,320.8h,87.33t/data=!3m8!1e1!3m6!1sAF1QipNR518O2MeivP6Wmpb3Y58rLrt_hVnCWrlJnYb!2e10!3e11!6shttps:%2F%2Ffih5.googleusercontent.com%2Fp%2FAF1QipNR518O2MeivP6Wmpb3Y58rLrt_hVnCWrlJnYb%3Dw203-h100-k-no-pi-0-ya98.18647-ro-0-fo100!7i11264!8i5632

Figure 56: Illustration by the author, Yazd map sourced from: Open Street Map. (n.d.). [Map of Yazd City]. Retrieved May 19, 2022, from: <https://www.openstreetmap.org/#map=16/31.8934/54.3629&layers=T>

Figure 57: [Amir Chakhmaq Complex]. Retrieved from: <https://safarmarket.com/blog/attractions/iran/yazd/amir-chakhmaq-complex>

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Figure 69: [Yazd Art House]. Sourced February 23, 2022, from: <https://neshan.org/maps/places/08aec3a94bbeff2297aa1603352d0d3a/%DB%8C%D8%B2%D8%AF+%D8%B4%D8%A7%D9%87+%D8%A7%D8%A8%D9%88%D9%84%D9%82%D8%A7%D8%B3%D9%85+%D8%AE%D8%A7%D9%86%D9%87+%D9%87%D9%86%D8%B1+%DB%8C%D8%B2%D8%AF>

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Figure 76: Silhouettes by Png All. Sourced March 5, 2022, from <https://www.pngall.com/kids-png/>

Figure 78: Silhouettes by Png All. Sourced March 5, 2022, from <https://www.pngall.com/kids-png/>, & Free Png. Sourced March 5, 2022, from <https://www.freepng.es/png-j93ivw/>

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