

Children In The Built Environment

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Abstract: “Children in the Built Environment” is a work of passion that was authored by three researchers in the field of Built Environment who are profoundly dedicated to enhancing the urban environments in Malaysia for children. Each author contributes a distinctive perspective, which is inspired by a common goal to promote child-friendly environments that facilitate the development and experiences of children in urban environments.

This book addresses the necessity of revised design guidelines that guarantee that play spaces are both accessible and inviting for all children, including those with disabilities, and that they support physical, emotional, and cognitive development. Vehicular movement and economic growth are frequently prioritised over the overall well-being of younger residents, walkability, and playability in contemporary planning principles. Consequently, the number of children's playgrounds, open spaces, and parks is frequently insufficient, and they are either inadequately maintained or situated in areas that are unsafe for children to access.

This book also explores the vital transformation of Malaysia's urban spaces into environments that are genuinely child-friendly - an endeavour that demands strong political will and commitment from both local and federal governments. Central to this transformation is investment in sustainable practices and consistent maintenance, alongside the coordination of built environment facilities that not only comply with regulatory standards but also promote well-being, accessibility, and inclusivity. This includes facilities design for accessibility and inclusion and sustainable practice for inclusive facilities. additionally, the book underscores the critical importance of indoor air quality in safeguarding the health and well-being of children. Infrastructure development must be consistent with the UN Convention on the Rights of the Child (UNCRC), and participatory planning processes with children and carers must be made possible. In order to guarantee that every child can develop, play, and flourish in secure, nurturing environments that prioritise both interior and outdoor quality, it is imperative to promote government leadership, cross-agency collaboration, and sustained community engagement.

This book functions as both a guide and a call to action, providing inspiration, strategies, and insights for the transformation of urban spaces into environments that prioritise the needs of children and uphold their rights in Malaysia and around the globe.

Keyword: Built environment, urban planning, play spaces, accessibility, inclusion

CHILDREN

IN THE BUILT ENVIRONMENT

YONG ADILAH SHAMSUL HARUMAIN
NIK ELYNA MYEDA
NORHAYATI MAHYUDDIN

CHILDREN IN THE BUILT ENVIRONMENT




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Dedications

To our children,

The future of Malaysia, the heart of our hope.

May you grow with the courage to dream, the wisdom to lead, and the compassion to change the world for the better.

This book is dedicated to our children and to all children of the world,

For you are the light that will guide us all towards a brighter tomorrow.

Adilah, Elyna and Hayati



Preface

This book delves into the topic of children in the built environment, a subject that is seldom explored in detail especially in Malaysia. Many built environment-related books tend to prioritise the universal context rather than addressing the specific difficulties and challenges relating to children in the built environment. They also overlook the gap in policies, methods, guidelines, and impacts of existing planning standards that are relevant to promoting children's well-being. Whether it is a story of success or failure, it is important to explicitly recognise and examine the impact of the built environment on children in different scope. This book comprehensively addresses several aspects of urban planning, encompassing both the internal and external components of buildings, the surrounding environment, and the promotion of social and mental well-being. The book aims to fill this gap by extensively addressing various aspects of built environment such as urban planning, facilities management, and air circulation in the building that directly impact children's well-being. It covers both the physical aspects of buildings and the surrounding environment, as well as the social and mental well-being of children. By delving into these topics, the book seeks to provide valuable insights and guidance for important stakeholders such as developers, designers, architects, urban planners, building managers, engineers and policymakers to create more child-friendly and inclusive urban spaces. This oversight is significant, as the impact of the built environment on children is profound and wide-ranging, influencing their physical, social, and emotional development. Whether recounting stories of success or failure in urban planning

endeavours, it is imperative to explicitly recognise and thoroughly examine the intricate interplay between the built environment and children's lives.

Issues related to children in the built environment in Malaysia are deeply concerning, encompassing safety when commuting to school, using public transportation, and playing at playgrounds; and their limited confidence to explore outdoors independently. In Johor Bahru (2017), a tragic accident claimed the lives of eight teenage cyclists who were hit by a car while cycling on a poorly designed road. The absence of designated cycling paths and proper street lighting, poor road design and lack of traffic-calming measures significantly contributed to the unfortunate incident. A probable cause for why the children were cycling at night is the lack of playing spaces in their neighbourhood, and hence the roads were used as their playing space. Similarly, in the Klang Valley, lack of accessibility and overcrowded trains and buses during peak hours make public transportation unsafe and inconvenient for children. Additionally, traffic congestion and poorly planned school drop-off and pick-up systems further complicate the daily commute for families leading to many vehicular accidents involving children near school gates. At a public playground in Subang Jaya (2022), a child was injured due to a broken swing, highlighting the consequences of years of neglected maintenance despite repeated complaints from local community groups. As a result, in urban areas, children's mobility is often restricted due to parental fears of crime, traffic accidents, and societal perceptions of unsupervised children, further limiting their outdoor activities and independence.

In response to this, this book offers a comprehensive exploration of various dimensions of built environment. By delving into these multifaceted aspects, the book provides a nuanced understanding of how urban environments can either facilitate or hinder children's growth, development, and overall quality of life. By prioritising the creation of child-friendly, inclusive urban spaces, informed by evidence-based research and considerations of children's diverse

needs and perspectives, it advocates for a more holistic approach to urban planning that places the well-being of children at its core. We sincerely hope that this book will widen your paradigm and shed light on the needs of children in the built environment.

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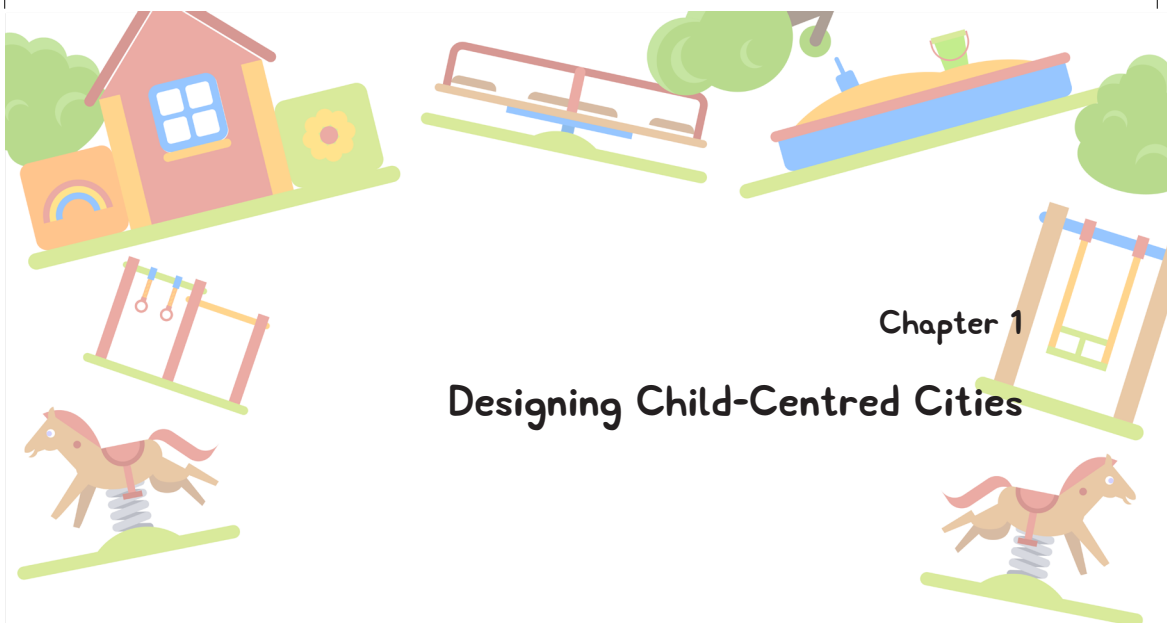
To our esteemed collaborators in research, your shared insights, guidance, and collaborative spirit have been integral to shaping the direction and content of this work. We are also deeply grateful to our research assistants and students, whose tireless work and attention to detail ensured that every aspect of our research was meticulously explored and documented.

Our sincere thanks go to our book reviewer. A heartfelt thank you for your unwavering commitment. Our sincere gratitude also goes to the local authorities (Dewan Bandaraya Kuala Lumpur, Majlis Bandaraya Subang Jaya, Majlis Bandaraya Petaling Jaya, Majlis Perbandaran Taiping, and others) whose cooperation and assistance provided us with essential resources and perspectives that helped ground our research in real-world context.

We would also like to acknowledge the experts and academicians in Malaysia, Japan and around the world whose thought-provoking input and vast knowledge have enriched this book, ensuring that its content is both relevant and impactful.

Finally, to Penerbit UTHM, thank you for supporting this book project in all capacity, we thank you for your belief in its importance and your contribution to its success.

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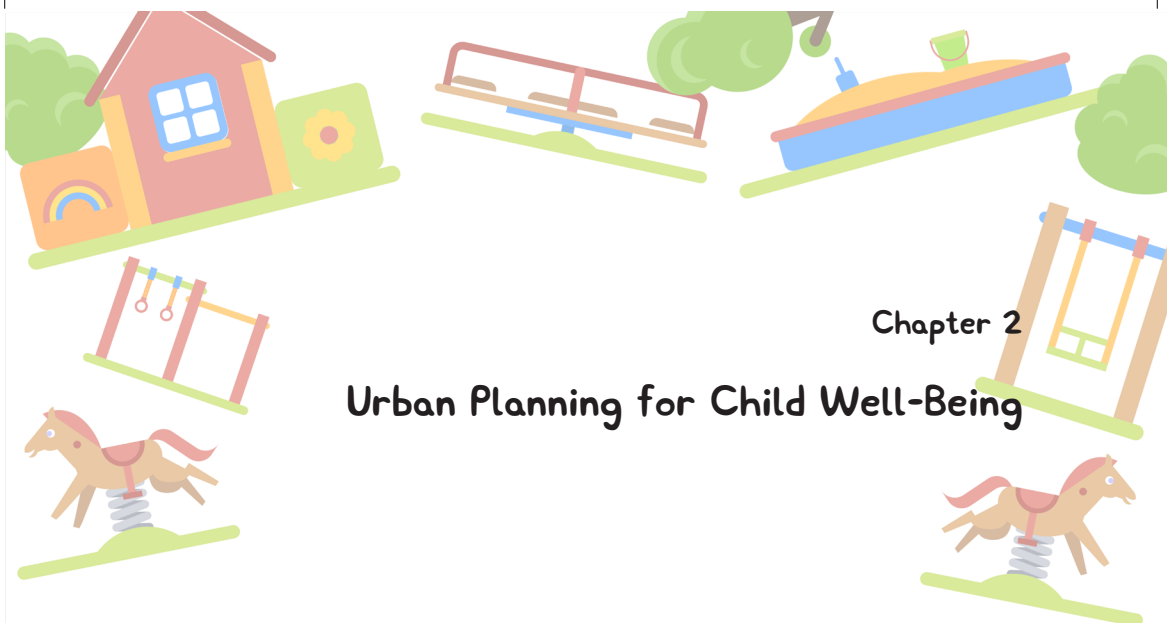


Chapter 1

Designing Child-Centred Cities

Introduction

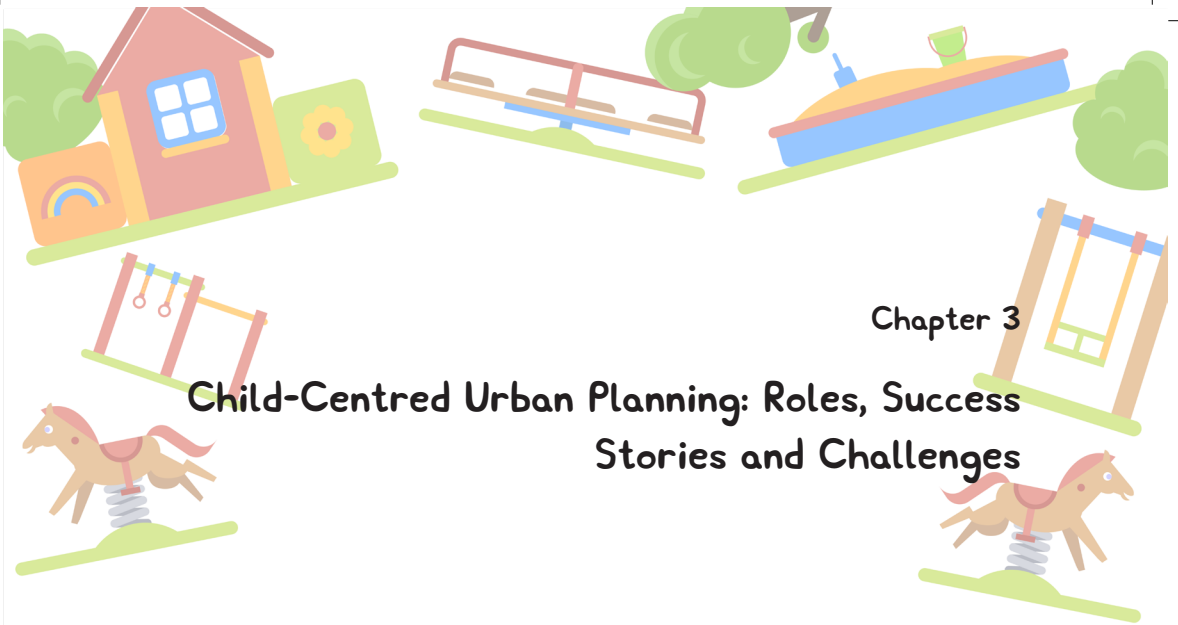
A truly child-friendly city should view the entire urban fabric as a canvas that fosters opportunities for children's independent active transport and play. To achieve this, walkable, child-centred networks must be integrated into the urban design, creating incidental opportunities for play, exploration, and social interaction (Krysiak, 2018). Krysiak emphasises that safe travel routes encouraging children to walk or cycle independently, along with school networks seamlessly connecting to public spaces, are critical in designing such cities. These elements enable children to engage in community life and discover their neighbourhood. On the streets, child-friendly cities require sufficient pedestrian facilities, including crossing guards and crosswalks, to ensure safety and accessibility. However, how far Malaysia has achieved to be a child-friendly city? The concept of a child-friendly city represents an urban vision where children's rights, needs, and aspirations are prioritised, ensuring their growth and well-being within a supportive environment. As cities continue to expand and urbanisation intensifies, the importance of child-friendly spaces has become increasingly evident. For Malaysia, the journey towards becoming a truly child-friendly nation is both an opportunity and a challenge. While progress has been made, the extent to which Malaysia has achieved this goal remains a topic of exploration and evaluation. This book aims to critically discuss Malaysia's progress while providing insights into the broader aspects of designing and managing a built environment that caters to children's unique needs.



Chapter 2

Urban Planning for Child Well-Being

Urban environments profoundly shape the experiences and development of children, influencing their physical, psychological, and social well-being in unique ways (Freeman & Tranter, 2020). As cities grow more complex, understanding and addressing children's specific needs in urban contexts have gained critical importance among planners, policymakers, and child advocates (United Nations Children's Fund [UNICEF], 2023). This chapter seeks to explore the distinct needs of children in urban spaces, addressing both the opportunities and challenges that urban environment presents. The world is experiencing an exceptional demographic shift towards urbanisation, a trend that is shaping the lives of billions of people, including an ever-growing number of children. According to the United Nations, more than half of the global population now resides in urban areas, and this statistic is anticipated to increase, particularly in developing regions (UN DESA, 2022). For children, this shift means that roughly half of the world's young population lives in cities, a figure that is projected to grow in the coming decades as urbanisation accelerates across Asia, Africa, and Latin America (UNICEF, 2023). Urban areas promise numerous advantages for children, such as better access to educational facilities, healthcare services, and social amenities. Cities can offer enriched environments with more varied social interactions, exposure to cultural diversity, and opportunities for personal and academic growth. However, rapid urban growth is outpacing infrastructure development in many regions, creating challenges in ensuring that urban environments are child-friendly and supportive (UN-Habitat, 2022).



Chapter 3

Child-Centred Urban Planning: Roles, Success Stories and Challenges

Urban planning is a critical element in shaping cities and communities, affecting all who live and work within them. Traditionally, urban planning focuses on transportation, housing, infrastructure, and environmental sustainability. However, the needs of different demographic groups, including children, are often overlooked in favour of broader societal goals. Children, who make up a substantial portion of the population, experience and interact with urban spaces differently from adults. As Antoine de Saint-Exupéry said, "All grown-ups were once children but only few of them remember it." Childhood memories are shaped by the experiences they had. They require a unique environment to support their physical, mental, and social development. When urban environments are not designed with children in mind, they can create barriers that limit children's access to safe play areas, reduce opportunities for social interaction, and compromise their overall well-being. The importance of considering children's needs in urban planning cannot be overstated. Children require spaces that encourage exploration, play, and social interaction, all of which contribute to their holistic development. Safe, stimulating environments help them develop physically by promoting movement, while mentally enriching spaces foster curiosity and learning. Additionally, social spaces contribute to emotional resilience and a sense of belonging. By prioritising these elements, urban planners can create environments that not only nurture children but also foster strong community bonds and a healthier society. Ignoring these needs can have long-term consequences, potentially impacting children's growth and, in turn, the future of society. Before, our cities



Chapter 4

Creating Child-Friendly Urban Spaces

Public spaces, especially playgrounds, are vital environments that shape the experiences and development of children, families, and communities. A well-designed playground is not just a place for fun; it serves as a platform for physical activity, social interaction, creativity, and learning. Yet, the safety and accessibility of these spaces are often taken for granted. In an increasingly urbanised world, where space is limited and risks are prevalent, the need to design playgrounds and public spaces with safety at the forefront has never been more critical. This chapter will talk about designing safe playgrounds and public spaces and is a comprehensive guide for urban planners, architects, policymakers, and community leaders. It explores the principles, strategies, and practical steps necessary to create environments where children can play freely without fear, while fostering inclusivity and enhancing the well-being of communities. Through case studies, expert insights, and design frameworks, this book aims to highlight the intersection between creativity, safety, and public health in shaping spaces that contribute positively to society.

Open spaces are a crucial non-renewable element of urban development. Within the development of urban areas, open spaces consistently assume crucial roles by offering a convenient environment for a diverse range of leisure and recreational pursuits, while also enriching the civic virtues of a community. Certain sites in this collection possess significant historical and cultural importance. Others are habitats that are populated by a diverse range of plant and animal species that are highly important natural assets to be

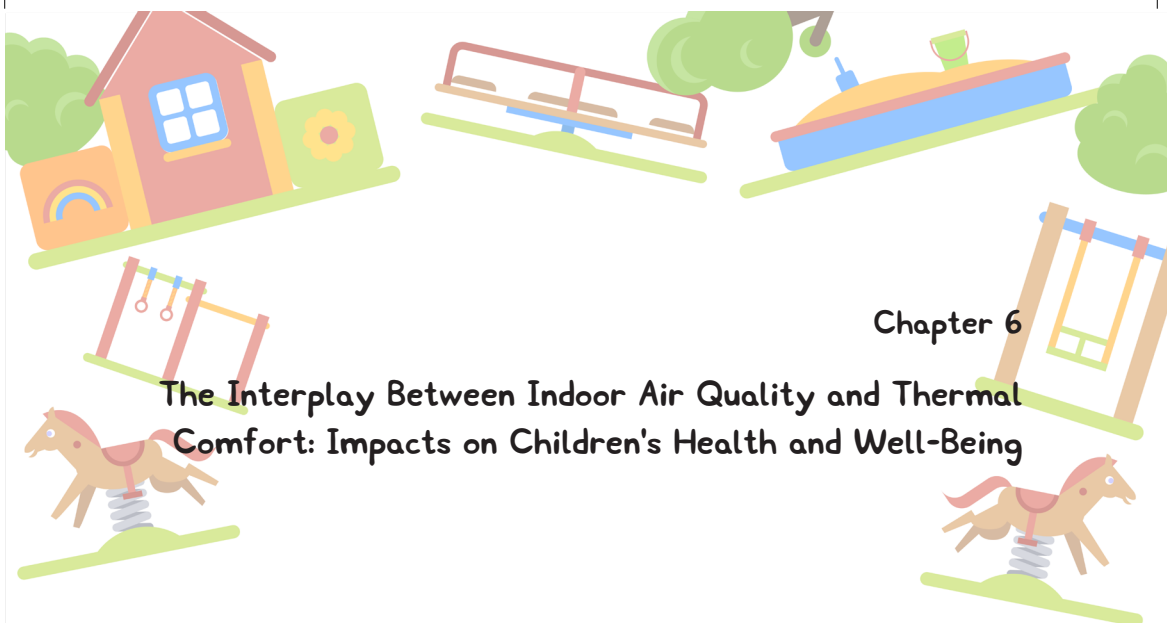


Chapter 5

Facilities Management of Child-Friendly Spaces

Child-Friendly Spaces (CFS) are safe environments created with input from the community, where children impacted by natural disasters or armed conflict can find safety and support. These spaces offer a variety of integrated programmes, such as play, recreation, education, health services, and psychosocial care. They also serve as information centres where children and their families can learn about available services and other forms of support (United Nations Children's Fund [UNICEF], 2019). Child-friendly spaces are used as a means to promote children's psychosocial well-being (Ager et al., 2013). Creating environments that are safe, nurturing, and conducive to learning and play is essential for the well-being and development of children. Child-friendly spaces, whether they are schools, playgrounds, community centres, or healthcare facilities, require a unique approach to facilities management (FM). These spaces need to cater to the specific needs of children, considering their safety, comfort, and developmental requirements.

FM plays a critical role in ensuring that these environments meet the highest standards of safety, cleanliness, accessibility, and sustainability. It is imperative that FM ensures that spaces function as their intended purposes, meeting the requirements set by the stakeholders and users (Myeda & Fung, 2023). FM professionals must address a variety of challenges, from ensuring child-proof designs and compliance with regulations to fostering inclusive and welcoming atmospheres. By focusing on key aspects such as safety, cleanliness, accessibility, space design, and maintenance,



Chapter 6

The Interplay Between Indoor Air Quality and Thermal Comfort: Impacts on Children's Health and Well-Being

Children's health, productivity, and well-being are profoundly influenced by the quality of indoor environments, where they spend the majority of their time. Indoor air quality (IAQ) and thermal comfort are critical factors that directly affect their physical health, cognitive growth, and emotional stability. Poor IAQ, often overlooked, can lead to significant yet silent health threats, such as respiratory issues and reduced focus. Similarly, inadequate thermal comfort can impair sleep, learning, and social interactions, particularly in schools, daycare centres, and homes. This chapter emphasises the importance of these environmental factors, presenting real-world examples to highlight their impact and advocating for a better understanding of how indoor conditions shape young lives.

Modern building design increasingly prioritises energy efficiency to address climate change and reduce greenhouse gas emissions. While airtight buildings effectively conserve energy by minimising heat loss and air leakage, they can inadvertently compromise IAQ, particularly in tropical or temperate climates. Balancing energy efficiency with healthy indoor environments requires integrated design strategies, such as advanced mechanical ventilation systems, the use of low-emission materials, and routine IAQ monitoring. These approaches ensure sustainable and comfortable living spaces while addressing the dual challenges of climate change mitigation and occupant well-being. The indoor environment is frequently an underestimated factor influencing children's health and well-being. The dual challenges of maintaining good indoor air quality and achieving thermal comfort



Chapter 7

Future Trends and Recommendations

Emerging Trends in Child-Focused Urban Development

Moving forward, the urban development landscape is increasingly prioritising children's needs and well-being. This shift is evident in the growing trend of incorporating child-focused elements into urban design. As Horelli (2007) highlighted, urban and environmental factors are integral to creating child-friendly environments. Emerging trends in urban development are actively fostering safe and stimulating spaces for play and learning. These child-friendly urban designs are not only enhancing the quality of life for children but also contributing to the overall vitality and sustainability of cities. Complete streets, accommodating pedestrians, cyclists, and public transit users, promote active lifestyles and enhance accessibility, making it easier for children to navigate their cities independently and safely. Meanwhile, playful learning environments, integrated into urban spaces, foster creativity, social-emotional development, and a lifelong love of learning.

Hence, sustainable and healthy cities, with their emphasis on clean air, water, and green spaces, provide the ideal setting for children's growth and development. This is in line with the Sustainable Development Goal (SDG) 11 which addresses the need to make cities and human settlements inclusive, safe, resilient, and sustainable (United Nations, 2023). Inclusive and equitable spaces ensure that all children, regardless of their abilities or backgrounds, can access and enjoy the benefits of urban life. Therefore, by involving children in

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CHILDREN

IN THE BUILT ENVIRONMENT

"Children in the Built Environment" is a work of passion that was authored by three researchers in the field of Built Environment who are profoundly dedicated to enhancing the urban environments in Malaysia for children. Each author contributes a distinctive perspective, which is inspired by a common goal to promote child-friendly environments that facilitate the development and experiences of children in urban environments.

This book addresses the necessity of revised design guidelines that guarantee that play spaces are both accessible and inviting for all children, including those with disabilities, and that they support physical, emotional, and cognitive development. Vehicular movement and economic growth are frequently prioritised over the overall well-being of younger residents, walkability, and playability in contemporary planning principles. Consequently, the number of children's playgrounds, open spaces, and parks is frequently insufficient, and they are either inadequately maintained or situated in areas that are unsafe for children to access.

This book also explores the vital transformation of Malaysia's urban spaces into environments that are genuinely child-friendly - an endeavour that demands strong political will and commitment from both local and federal governments. Central to this transformation is investment in sustainable practices and consistent maintenance, alongside the coordination of built environment facilities that not only comply with regulatory standards but also promote well-being, accessibility, and inclusivity. This includes facilities design for accessibility and inclusion and sustainable practice for inclusive facilities. Additionally, the book underscores the critical importance of indoor air quality in safeguarding the health and well-being of children. Infrastructure development must be consistent with the UN Convention on the Rights of the Child (UNCRC), and participatory planning processes with children and carers must be made possible. In order to guarantee that every child can develop, play, and flourish in secure, nurturing environments that prioritise both interior and outdoor quality, it is imperative to promote government leadership, cross-agency collaboration, and sustained community engagement.

This book functions as both a guide and a call to action, providing inspiration, strategies, and insights for the transformation of urban spaces into environments that prioritise the needs of children and uphold their rights in Malaysia and around the globe.



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