

PLAY WITHOUT LIMITS

Making Cities Playable for Every Child

Graduation Thesis - Niki Sophie Holman

Pattern Language Booklet





Pattern Language Booklet 2025 - 2026

Delft Faculty of Architecture and the Built Environment
Department of Urbanism
Cluster Healthy and Inclusive Cities

Mentors

First mentor: Prof.dr.ir. Machiel van Dorst
Second mentor: Dr. Deepti Adlakha
External examiner: Dr.ir. Marjolein Spaans

Author

Niki Sophie Holman
Student Number - 6101402

All images are by the author.



INTRODUCTION

Inclusive public spaces should support children with various physical, cognitive, and sensory needs in everyday urban life. As part of the design process for the Child Ribbon, this pattern language was developed to translate broader inclusive design principles into spatial interventions within the public environment.

The patterns are organized into four themes: Safety, Orientation, Comfort, and Play. Together, these themes address various aspects of how children experience, understand, navigate, and use public spaces independently. Rather than functioning as isolated interventions, the patterns work together as part of a larger spatial system throughout the child ribbon and the surrounding neighborhood.

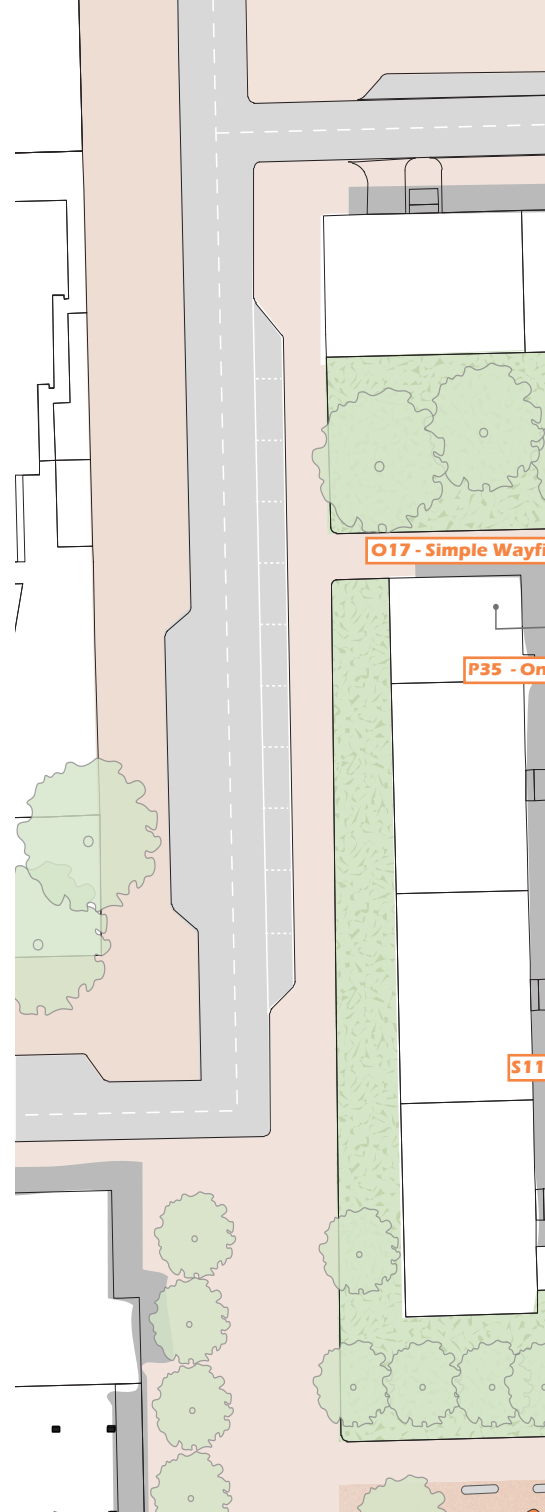
Throughout the design process, the patterns functioned as analytical and design tools. They helped structure spatial decisions, identify inclusive design principles, and translate abstract needs into concrete interventions within the urban environment. The patterns helped connect smaller spatial interventions into a larger, more inclusive framework throughout the Child Ribbon and the surrounding neighborhood. They also served as a communication tool for translating research insights into

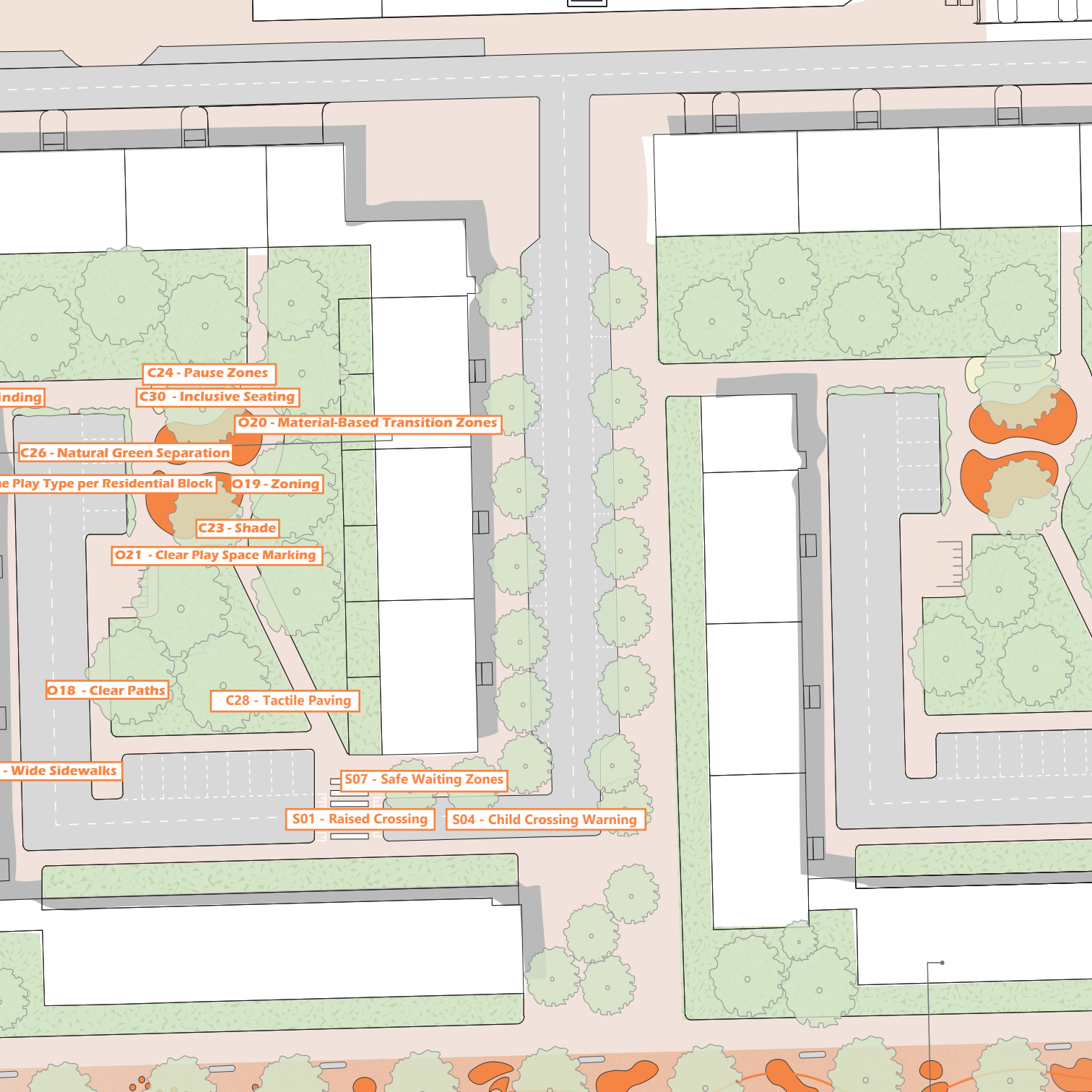
spatial strategies.

Through this process, the project evolved into a coherent, understandable spatial framework integrating movement, accessibility, play, and sensory experience into everyday public spaces.

This booklet illustrates each pattern with a short explanation and supporting sketch, showing how specific spatial interventions can contribute to a more inclusive public environment for children with different needs and abilities.

The accompanying icons indicate which type of disability each pattern primarily supports: physical, cognitive, or sensory. Although patterns are categorized by their main focus, many interventions contribute to multiple forms of accessibility and inclusivity at the same time.





C24 - Pause Zones

C30 - Inclusive Seating

O20 - Material-Based Transition Zones

C26 - Natural Green Separation

O19 - Zoning

C23 - Shade

O21 - Clear Play Space Marking

O18 - Clear Paths

C28 - Tactile Paving

S07 - Safe Waiting Zones

S01 - Raised Crossing

S04 - Child Crossing Warning

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e Play Type per Residential Block

- Wide Sidewalks

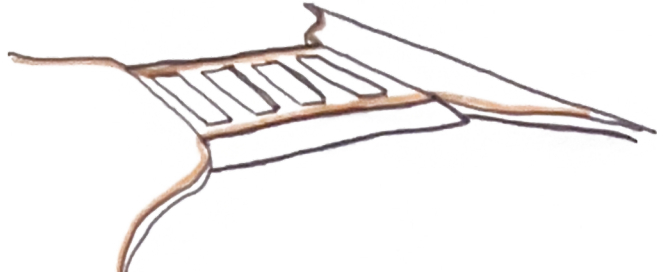
SAFETY (S)

The focus of safety in public spaces is to create environments where children can move, play, and explore independently along the child ribbon without being dominated by traffic or unsafe spatial conditions. Rather than completely separating children from mobility networks, these patterns aim to slow down movement, increase awareness, and prioritize children in public spaces.

The safety patterns in this framework illustrate how street design, crosswalks, traffic flow, and traffic management can contribute to calmer, more accessible environments along the child ribbon. Reducing conflict between vehicles, cyclists, and children makes public spaces safer, more understandable, and more comfortable for children with different needs and abilities.

S01 - Raised Crossing

A raised crossing creates a continuous, accessible route for children by removing the physical barrier between the sidewalk and the road. At the same time, it slows down traffic and improves pedestrian safety in public spaces.



S02 - Speed Bump

Speed bumps physically reduce vehicle speed and increase driver awareness in areas used by children. By forcing slower movement near crossings and child-oriented spaces, they create safer conditions along the child route.



S03 - Road Narrowing

Narrowing the road reduces its width, which slows down traffic and increases driver attention. By visually and physically limiting the space available to vehicles, drivers become more aware of areas where children may be present, such as playgrounds and crosswalks.



S04 - Child Crossing Warning

A child crossing warning increases driver awareness in areas where children often play and cross the street. This visual cue encourages drivers to slow down and improves safety along routes and in public spaces frequented by children.



S05 - Raised Curb

A raised curb creates a clear height difference between pedestrian areas and spaces used by cyclists or vehicles. The elevated sidewalk reinforces spatial hierarchy, increases awareness, and helps create safer child-oriented public spaces.



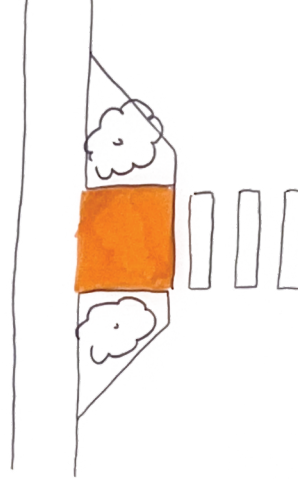
S06 - Rumble Strip

Rumble strips create a physical bump for cyclists when approaching crossings and shared child-oriented spaces. The uneven surface encourages cyclists to slow down and move more carefully along the child route.



S07 - Safe Waiting Zones

Safe waiting zones provide protected spaces where children can pause before crossing or entering busier areas of the child route. These zones improve visibility, reduce stress during transitions, and promote safer independent movement in public spaces.



S08 - Child Priority

Child Priority gives children permanent priority in public spaces and along child routes. Prioritizing children over vehicles and other traffic makes the environment safer, slower, and more supportive of independent movement and play.



S09 - Car-Free Street

Transforming the child route into a car-free street makes it a safe and accessible public space for children and pedestrians. Removing motorized traffic creates more space for movement, play, social interaction, and independent exploration.



S10 - Cul-de-Sac

A cul-de-sac restricts vehicle movement within residential areas to residents and destination traffic only. Removing through traffic around the child route crossing makes the public space calmer, safer, and more comfortable for children to move and play independently.



S11 - Wide Sidewalks

Wide sidewalks provide enough space for children to comfortably and independently move throughout public spaces. The increased width enables wheelchair users, stroller users, and pedestrians to pass each other easily while ensuring clear and accessible movement along the children's route.



S12 - Bicycle Street

A bicycle street prioritizes cyclists in public spaces and reduces the dominance of cars on child routes. Lowering vehicle speed and increasing awareness of slower movement makes the street safer and more comfortable for children traveling through the neighborhood.



S13 - Living Street

A living street transforms public spaces into shared environments for movement, play, and social interaction. Active use of the street creates a sense of community and makes the environment feel safer and more comfortable for children to use independently.



S14 - Textured Pavement

Textured pavement creates a noticeable change in surface texture and sound to alert drivers when they are approaching a child route crossing. This change in material increases awareness and encourages slower driving, supporting a safer crossing environment for children.



ORIENTATION (O)

The focus of orientation is the readability and understandability of public spaces.

Many children, especially those who benefit from structure, predictability, and clear spatial organization, find complex environments overwhelming or confusing.

The orientation patterns in this framework aim to establish recognizable routes, clear transitions, and understandable spatial structures in the children's areas and playgrounds. Through wayfinding, zoning, visual cues, and clear circulation, children can navigate public spaces more independently and confidently.

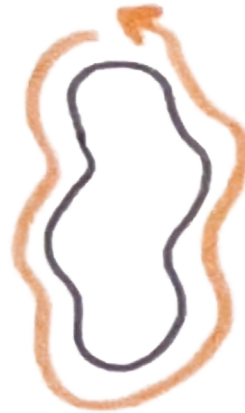
O15 - Predictable Layout

A predictable layout creates a clear spatial structure that helps children understand where they are and what to expect in public spaces. Consistent organization, recognizable transitions, and clear zoning make the environment easier to navigate and more supportive of cognitive and sensory accessibility.



O16 - Main Circulation Route

A main circulation route provides a clear and recognizable path through the playground and along the child ribbon. The continuous route structure acts as the central organizing line of the public space. It creates an overview and spatial clarity, helping children understand how different spaces are connected and navigate the environment more independently.



O17 - Simple Wayfinding

Simple wayfinding uses clear visual cues, symbols, and directions to help children navigate public spaces independently. This intuitive guidance system improves orientation and creates a more accessible environment for children with different cognitive and sensory needs.



O18 - Clear Paths

Clear paths create direct and obstacle-free routes throughout the public space. The simple circulation structure improves accessibility, orientation, and navigation comfort while supporting independent movement for children with different mobility needs.



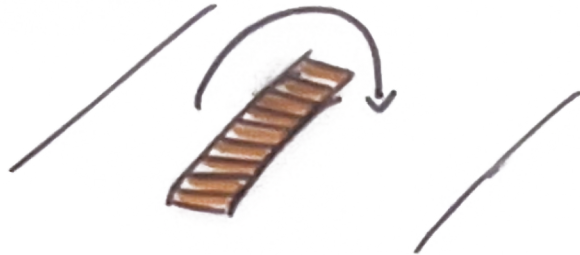
O19 - Zoning

Zoning organizes playgrounds and public spaces into clearly defined areas with different types of play, activity levels, and rest areas. Separating active, quiet, and sensory spaces makes the environment more structured, predictable, and easier to navigate independently. Clear zoning helps children orient themselves, reduces overstimulation, and allows them to choose spaces that match their needs and pace of play.



O20 - Material-Based Transition Zones

Material-based transition zones use changes in surface material and texture to visually indicate shifts between different activity zones. These material transitions help children recognize changes in space, atmosphere, and activity level throughout the environment.



O21 - Clear Play Space Marking

Clear play space markings visually define areas where play is encouraged within public spaces and along the child ribbon.

These recognisable boundaries create structure and predictability, helping children to distinguish between play areas, movement areas and quieter areas, and to understand where different activities take place.

The markings improve orientation and spatial awareness, which supports children in using the environment more independently and comfortably.



O22 - High-Contrast Colors

Using high-contrast colors improves the visibility and readability of important routes, transitions, and play areas in public spaces. This strong visual distinction improves visibility, route recognition, and boundary identification for visually impaired children.



COMFORT (C)

At Comfort, the focus is on creating public spaces that support children with different needs and abilities to use the space comfortably and independently. Inclusive environments should be accessible and feel calm, understandable and supportive during everyday use.

The Comfort Patterns explore how shade, seating, materials, greenery and transitional spaces can contribute to making public environments more comfortable and supportive for children. By providing opportunities to rest, gentler transitions and accessible amenities, children can engage with the environment at their own pace and according to their own needs.

C23 - Shade

Shade creates more comfortable outdoor spaces by reducing direct sun exposure along the Child Ribbon and within the playground. These shaded areas provide cooling, sensory comfort, and rest opportunities during active play, allowing children to enjoy the public space more comfortably throughout the day. These spaces also provide opportunities to take a break without leaving the play area.



C24 - Pause Zones

Pause zones are areas within public spaces where children can rest, observe, and temporarily step away from activity and stimulation. These spaces support sensory comfort and provide moments of calm without fully leaving the playground environment.



C25 - Transitional Spaces

Transitional spaces create gradual shifts in activity level and spatial experience within public spaces. These in-between spaces help children adjust more comfortably between different activity levels and moments of stimulation.



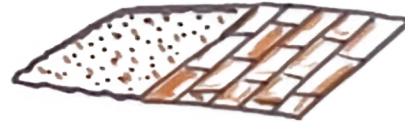
C26 - Natural Green Separation

Natural green separation uses low plantings and vegetation to gently define different zones within playgrounds and public spaces. For example, it can be used to separate play areas, bicycle paths, and the child ribbon. These natural boundaries provide structure and safety without completely obstructing visibility. They also contribute to a calmer and more comfortable environment.



C27 - Hard Surface Pavement

Hard surface pavement provides stable, accessible, and inclusive spaces in playgrounds and public areas. Even ground supports the comfortable movement of wheelchairs, strollers, and other mobility aids. Accessible, impact-absorbing materials allow children to play safely without limiting accessibility.



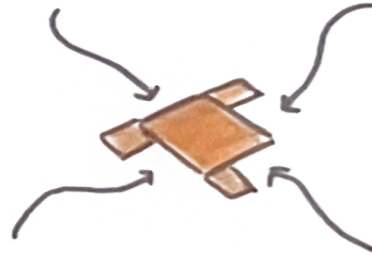
C28 - Tactile Paving

Tactile paving uses textured ground surfaces to help blind and visually impaired children orient themselves and navigate within public spaces and along important crossings. These tactile differences help children recognize routes, transitions, and potential hazards through touch, improving their ability to move independently and accessibly throughout their environment.



C29 - Clustered Facilities

Clustered facilities bring different functions and amenities closer together within public spaces and along the Child Ribbon. This proximity supports orientation, sensory comfort, and the need for nearby guidance and supervision. It also makes transitions between activities and rest periods easier for children.



C30 - Inclusive Seating

Inclusive seating creates accessible and comfortable resting, observing, and interacting spaces throughout the public space and along the child ribbon. Providing different types of seating and enough surrounding space allows children, caregivers, people in wheelchairs, and those with strollers to use the environment together more comfortably and independently.



PLAY (P)

The play patterns focus on integrating play into the spatial structure of the child ribbon and the surrounding public space.

Instead of concentrating play in one dedicated playground, playful interaction is distributed throughout routes, transitions, and everyday environments.

The patterns explore how accessible, ground-level, and sensory forms of play can encourage exploration, interaction, and independent engagement in the public realm. By carefully organizing areas for play and calm, the child ribbon becomes more inclusive and easier to understand for children with different needs.

P31 - Play Route

A play route transforms the child ribbon into a continuous play space for movement, play, and interaction throughout the neighborhood. By integrating interaction and sensory exploration into everyday routes, children are encouraged to discover and engage with the public space in their own way.



P32 - Play Elements Along the Child Ribbon

Play elements along the child ribbon create moments of interaction and sensory exploration during everyday movement in public spaces. These small-scale play experiences stimulate different senses, encouraging curiosity, discovery, and low-threshold learning and engagement.



P33 - No Play Elements in Quiet Zones

Having no play elements in quiet zones helps preserve calm, low-stimulation spaces within public environments. Separating active play areas from those intended for rest and retreat gives children the opportunity to pause, process sensory input, and experience moments of comfort.



P34 - Interactive Ground Play

Interactive ground play integrates playful lines, markings, and sensory elements into the ground surface of the child ribbon and playground. These playful interventions encourage exploration, interaction, and accessible forms of play throughout the public space.



P35 - One Play Type per Residential Block

Having one type of play area per residential block creates a clearer, more structured play environment throughout the neighborhood. Separating different activity types across residential blocks makes the public space less overstimulating and more predictable. This allows children with different needs to access and enjoy the environment in their own way.



P36 - Ground-Level Play Elements

Ground-level play elements integrate play directly into public spaces, eliminating the need for large or elevated structures. Keeping play accessible at ground level makes the environment more inclusive and approachable for children with different physical, cognitive, and sensory needs.



