Public Space is Child's Play

An exploration of the mother- and child-friendly city

Pattern Language Booklet

Graduation thesis

Britt Hoornaert

This Pattern Language was developed during the graduation project of "*Public Space is Child's Play, An exploration of the mother- and child-friendly city*". It aims to translate findings, from literature and own observations, into concrete design incentives. The interventions proposed in this Pattern Language booklet can be seen as guidelines to follow when trying to achieve a mother- and child-friendly city design. These interventions can vary in scale and in theme; however, the end goal is that all of them work together.

The patterns present in this booklet have been designed for the neighbourhood of Outremeuse in Liège, Belgium. This results in some patterns that are more location specific, while other patterns are more generally applicable. Nevertheless, the Pattern Language proposed in this booklet can help guide future explorations of this theme, even in different locations.
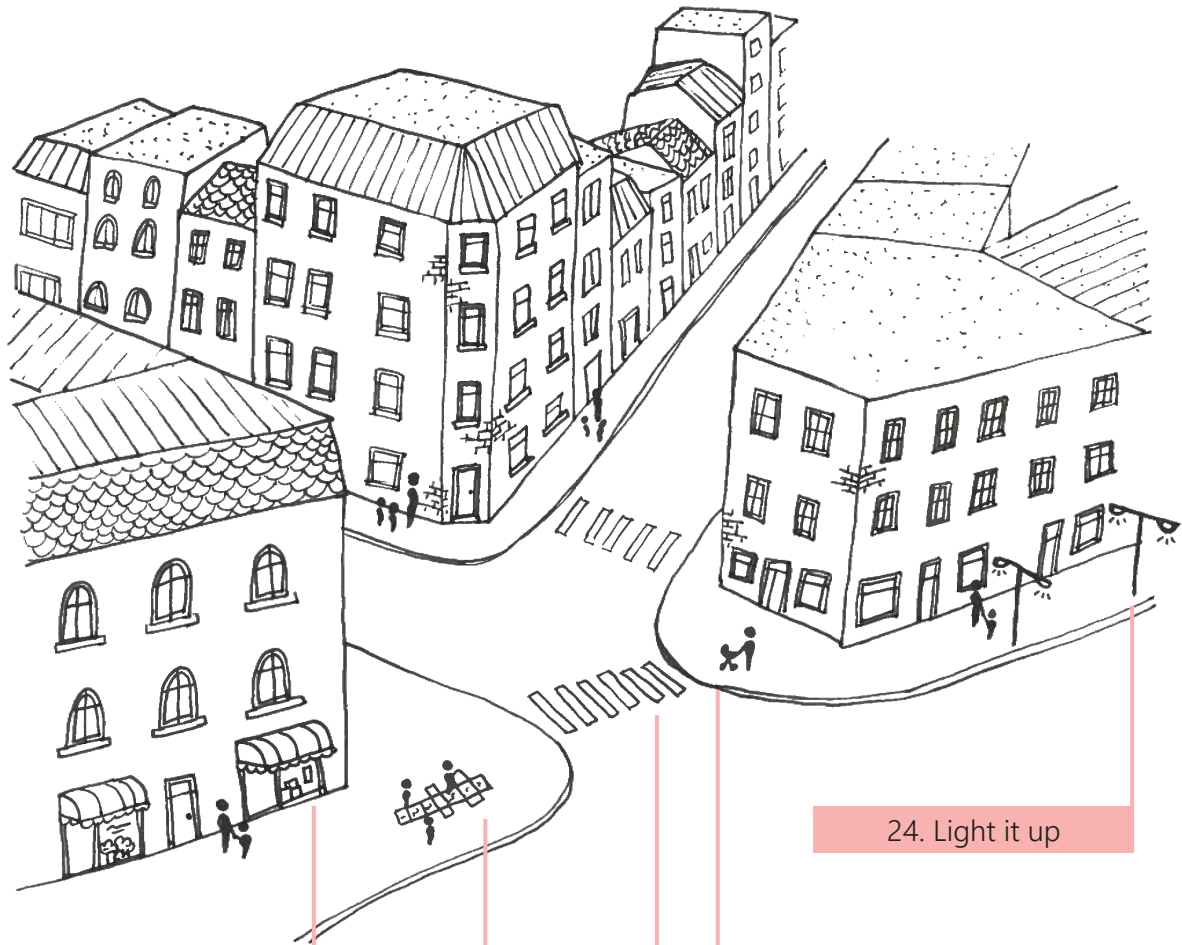
WHY A PATTERN LANGUAGE?

The best thing one could do to make a city more mother- and child-friendly is to make their daily-life more comfortable and enjoyable. Therefore, the public space has to be altered in such a way that it encourages this. That is where this pattern language comes into play. The research, through literature and fieldwork, of the corresponding thesis has been translated into a pattern language. This pattern language follows the structure conceived by Christopher Alexander (1978). The design incentives derived from the research have each been made into a separate pattern. These incentives can be applied throughout the scales and during different projects. They have each been moulded into a pattern with a title, a clear directive, the theoretical back-up, and the practical implications.

Each of these patterns also refers to related patterns. This is because, following the pattern language structure from Alexander (1978), all of the patterns in a pattern language are interconnected. These connections result in a pattern field. These pattern fields show the connections between the different patterns through the themes and the scales.

Furthermore, these patterns for the mother- and child-friendly city have been divided into four categories. These categories build onto each other but are not conditional to each other. The first set of patterns aims to contribute to a safe city. This should be the first priority as a neighbourhood that is -and feels- safe will be at the base of the comfort for the target groups. Secondly, a set for the walkable city follows. These patterns plea for every-day functions and programmes to be at a walkable distance within the neighbourhood. This would make everyday errands easier and encourage the use of local services. Then it is time to focus on the playful city. These patterns intend to increase and diversify the playing opportunities of children in the city. And finally, the patterns for the curious city are presented. These patterns try to add some fun details and challenge the status quo of the urban fabric in order to create a more interesting environment.

There is no need to implement each pattern everywhere, however they can help guide projects in the area towards more mother- and child-friendly public space designs. Every implemented pattern is a step in the right direction.

24. Light it up

11. Level out

18. Eye candy

01. Safety first

13.Pocket playgrounds

PATTERNS BY THEME

The safe city
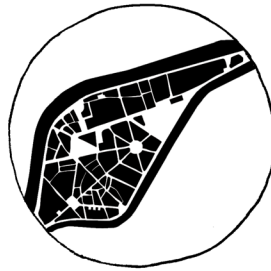
The walkable city

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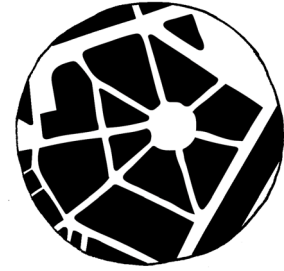
The playful city

The curious city

PATTERNS BY SCALE

City scale

06. Peddle away
11. All aboard

Neighbourhood scale

09. A short walk away
12. Nature play
20. Level up
27. Come and see

Block scale

05. Bye bye parking
08. Know your neighbour
15. A quick change
19. Pocket playgrounds
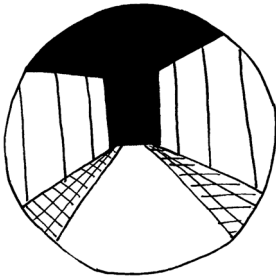
Street scale

01. Safety first
02. Light it up
03. Separate streams
04. Limit speed
16. Reclaim the street
21. At an impasse
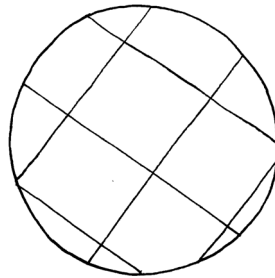
Object scale

13. Level out
14. Smooth sailing
17. Multifuncionality is key
22. Quiet zone
23. The observer
24. Pick it up
25. A pop of colour
26. Be ambiguous
29. Eye candy
30. Add texture
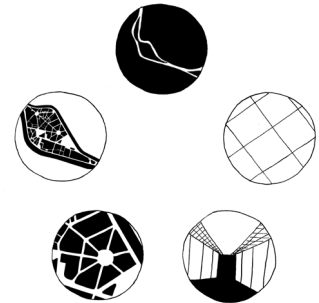
Through the scales

07. Spotless
10. Straight forward
18. Involve the parents
28. My own boss

PATTERN FIELD

Scale

Concrete

11. All aboard

06. Peddle away

12. Nature play

09. A short walk away

19. Pocket playgrounds

15. A quick change

05. Bye bye parking

03. Seperate streams

04. Limit speed

02. Light it up

01. Safety first

22. Quiet zone

13. Level out

23. The observer

14. Smooth sailing
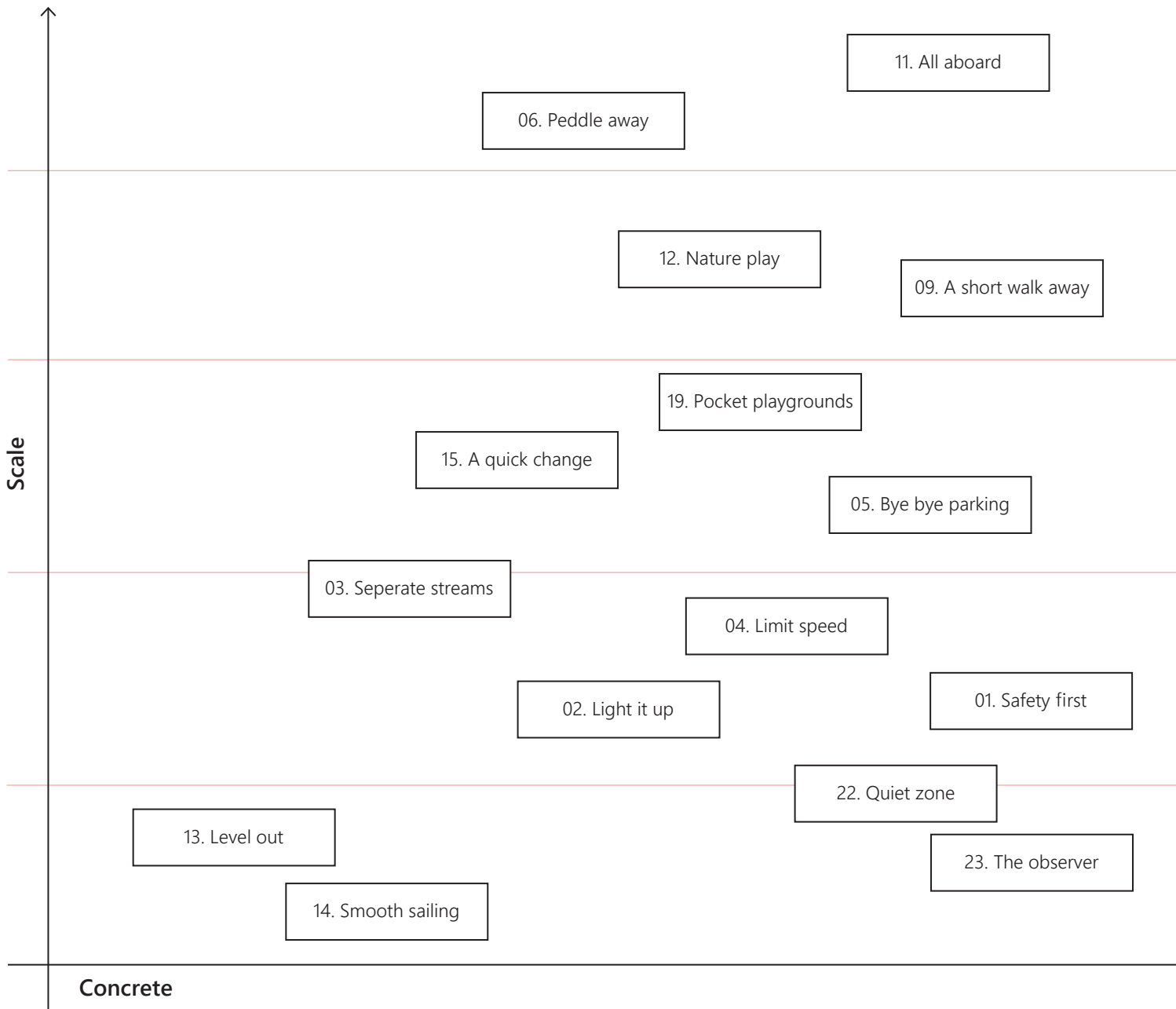
27. Come and see

20. Level up

08. Know your neighbour

10. Straight forward

16. Reclaim the street

21. At an impasse

18. Involve the parents

07. Spotless

28. My own boss

29. Eye candy

24. Pick it up

17. Multifunctionality is key

25. A pop of colour

30. Add texture

26. Be ambiguous

Abstract

PATTERN FIELD

11. All aboard

14. Smooth sailing

15. A quick change

13. Level out

09. A short walk away

01. Safety first

02. Light it up

28. My own boss

12. Nature play

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25. A pop of colour

26. Be ambiguous

22. Quiet zone

23. The observer

30. Add texture

08. Know your neighbour

Patterns

01. Safety first

Children are able to cross the street safely in their neighbourhood.

Theoretical back-up
Traffic accidents are one of the main reasons for serious injuries for young children, this can be while being a passenger or an active user (pedestrian or cyclist). In terms of pedestrian safety, research has found that it is unsafe for children up till 11 years old to travel independently through city traffic (van Vliet & Knasko, 1986; Ampofo-Boateng & Thomson, 1991).

Practical implication
Safe crossing can be approached two ways: On the traffic side, implement an appropriate speed limit and utilize speed bumps and other obstacles. On the sidewalk side, improve visibility by removing obstacles and using good lightning.

Related patterns
02. Light it up, 03. Separate streams, 04. Limit speed, 10. Straight forward, 13. Level out, 28. My own boss.
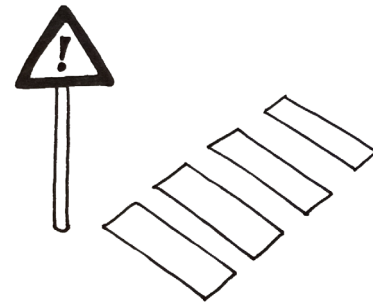
02. Light it up

Sufficient street lightning ensures a feeling of safety in the evening and at night.

Theoretical back-up
The parents' sense of safety greatly impacts the playing opportunity of the child. This has more to do with perceived safety, than actual crime rates (Cele, 2008; Collard, 2019). If mothers do not feel safe themselves in the public space, they will not let their children play around freely in it either.

Practical implication
Install sufficient and different types of street lightning throughout the public space.

Related patterns
01. Safety first, 10. Straight forward.

03. Separate streams

Separating different traffic streams in a legible way minimises accidents.
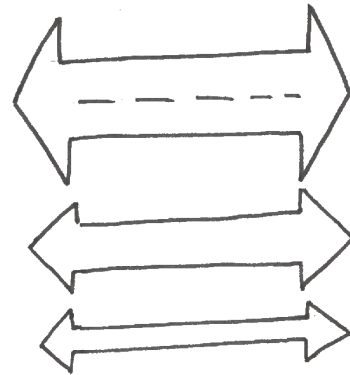
Theoretical back-up
Children benefit from independent mobility, which includes the freedom to walk, bike, and take public transportation (National Association of City Transport Officials, 2020). Children up to about 9 years often are at considerable risk as they do not have the ability to recognize a traffic situation as dangerous (Ampofo‑Boateng & Thomson, 1991). Clearly separating the traffic streams could help them choose safer routes.

Practical implication
The different streams of traffic (vehicles, bicycles, pedestrians) are separated and clearly delimitated by the use of different materials and markings. Preferably, the streams are even divided with a physical separation such as a height difference or vegetation.

Related patterns
01. Safety first, 04. Limit speed, 06. Peddle away, 10. Straight forward.

04. Limit speed

Appropriate speed limits in residential and commercial streets for safer roads.
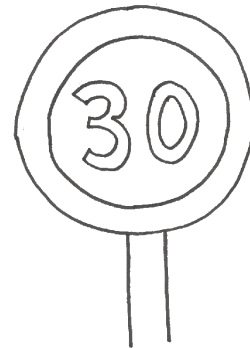
Theoretical back-up
One of the simplest ways to make the traffic of a street safer is by limiting the allowed speed. This way the driver has more time to react in case a child crosses unexpectedly and a better overview of other potential dangers in the street (Van Vliet & Knasko, 1986).

Practical implication
The street design has to enforce the speed limit through clear signage and obstacles. This pattern has to be created in collaboration with policy change.

Related patterns
01. Safety first, 03. Seperate streams, 28. My own boss.

P 15

RIVERAINS

23 m

VAN
DE 3-6 TOT 3-6
AU

VAN
DE 7 TOT 17
h A h

05. Bye bye parking

Cluster parking spaces in specific locations to free up the public space.

Theoretical back-up
Street pavement and parking areas are favourite places to play for children but can also be dangerous (Van Andel, 1985). In this case of Outremeuse, parking spaces have taken the upper hand in the public space, hindering other uses.

Practical implication
Car parking for the street or block has been grouped together in a designated area. This area would ideally be located underground, but if this is not possible above ground parking garages can offer an opportunity. These have to be designed in a considerate way as not to add a blind wall in the street.

It is important to separate the visitor and the resident parking spots to create an effective plan.

Related patterns
03. Seperate streams, 16. Reclaim the street.
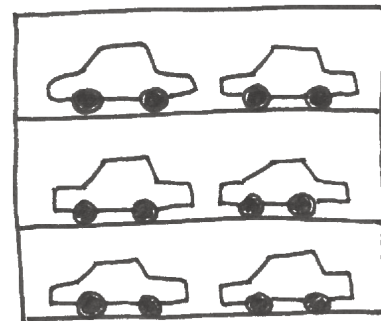
06. Peddle away

The cycling network of the city is safe enough for children to use.
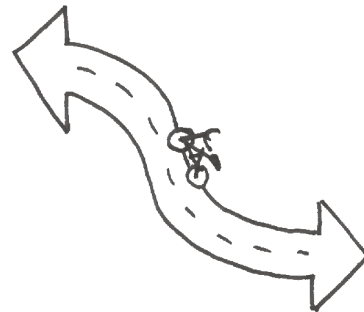
Theoretical back-up
Children only start to show good judgement in identifying dangerous crossing places from the age of 11 (Ampofo-Boateng & Thomson, 1991). This joins the idea of Van Vliet and Knasko (1986) that travelling independently through city traffic is unsafe for children up till 11 years old.

Practical implication
To ensure that the cycle paths are safe enough for children (and others as well) to use, they should be separate from other traffic streams. Where this is not possible, a clearly distinguishable colour should indicate the path.

Related patterns
03. Separate streams, 04. Limit speed.

07. Spotless

The public space is clean and well maintained.

Theoretical back-up
The physical and social conditions of the neighbourhood influence if children are allowed to play outside by themselves (Cele, 2008). A recurring physical aspect mentioned in litterature and interviews is the cleanliness of the area.

Practical implication
On the one hand, enough trashcans have to be places. But on the other, these also have to be emptied regularly and the public space well maintained. Depending on the space, this maintenance can be carried out by the municipality or a neighbourhoods association.

Related patterns
16. Reclaim the street.
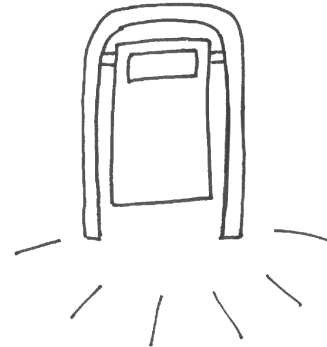
08. Know your neighbour

Building trust with other residents creates a feeling of safety and cohesion.

Theoretical back-up
One of the main reasons put forward in literature and fieldwork for children not playing outside as much anymore is the parents' fear of strangers (Karsten & Van Vliet, 2006). Building a network between inhabitants of a street could reduce this fear.

Practical implication
This pattern is harder to encourage directly through design. However, by creating a comfortable and enjoyable public space, people will use it more.

This pattern is more related to policies applied and activities encouraged in the neighbourhood.

Related patterns
18. Involve the parents, 27. Come and see.

BOUCHERIE

VOLAILLE - BOEUF - AGNEAUX - LAPIN

OUTREMEUSE
VIANDE DE QUALITÉ

TRAITEUR - ALIME
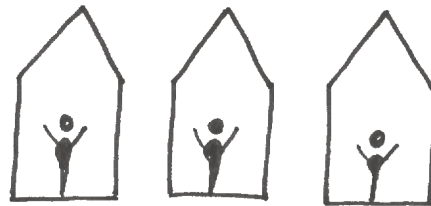
09. A short walk away

Everyday functions and programme are at a walkable distance.

Theoretical back-up
Because mobility can be such a struggle, proximity is an important factor to make life easier for mothers. The proximity of services such as a supermarket, a post office, a dentist etc to the home can make these tasks feel less daunting. The streets around the home can provide opportunities for outdoor play, inspiration, and personal development for children and caregivers (National Association of City Transport Officials, 2020).

Practical implication
Ensure a good mix of functions and programme through municipal policies. These functions are well accessible through their central location in the neighbourhood and pleasant sidewalks.

Related patterns
14. Smooth sailing, 15. A quick change, 19. Pocket playgrounds.

10. Straight forward

Clear street lay-outs and landmarks help children to orientate themselves.
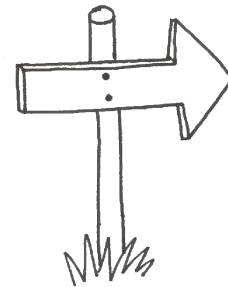
Theoretical back-up
Children benefit from and prefer locations that are easy to navigate (Cele, 2008). Street readability does not always entail straight streets; it can also imply gradual densification toward district centres, or it might be determined by the uses of buildings and the services supplied within them, or by the streets general architecture (Qvis, 2020).

Practical implication
Implement clear signs and signals that can help navigate the space without making it overwhelming. This also extends to a clear road lay-out.

Related patterns
01. Safety first, 03. Separate streams, 28. My own boss.

11. All aboard

The neighbourhood is well connected to the rest of the city through a public transport network.

Theoretical back-up
Most families in Liege travel through the city by car or by bus (own observation and experience). It is also possible to observe large families with a lot of kids taking these busses for school, groceries, meet ups and other appointments. Being able to take the bus smoothly improves the social life of the kids and also gives them more independence.

Practical implication
The bus lines go through the bigger streets of the neighbourhood at regular hours and connect to transportation nodes and train stations. The same card can be used to travel with different public transportation modes..

Related patterns
05. Bye bye parking, 09. A short walk away.

12. Nature play

Every child has access to a place where they can interact with nature.
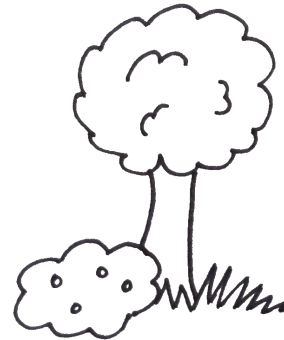
Theoretical back-up
It is important that children develop their environmental awareness through natural spaces (Moore & Cosco, 2000). These spaces can play a key role in teaching children about biology and understanding the world around them through trees, plant and animals (Herrington & Studtmann, 1998).

Practical implication
Create space for greenery on the bigger and the smaller scale. On the neighbourhood scale, a community garden can be introduced. On the smaller scale, adding private greenery can be encouraged.

Related patterns
19. Pocket playgrounds, 20. Level up, 30. Add texture.

14. Level out

Sidewalks have a slope at crosswalks to facilitate crossing with a stroller or kids on small bikes/scooters.

Theoretical back-up
Many sidewalks have high and sharp edges making it difficult to cross with a stroller. To expand the mobility of children and their mothers it is important to add a slope making it possible to cross with strollers, small bikes and scooters. Thereby, it will make the area more accessible to more target groups. (Colard, 2018, Kern, 2020).

Practical implication
Sidewalks have built-in slopes at crossing points

Related patterns
09. A short walk away, 14. Smooth sailing.

15. Smooth sailing

A path with smoother materials is added where the ground surface is too textured.
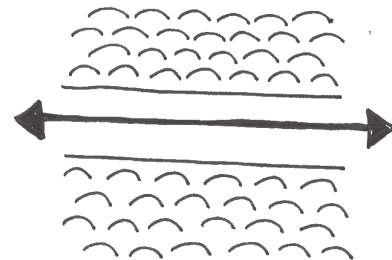
Theoretical back-up
Mothers with strollers and small children also fall under the concept of 'corps agrandi', literally meaning 'enlarged body'. So walking around with a stroller or young children can be considered as a reduction of mobility capacity (Colard, 2018). Moving around with children in the city can feel like a real challenge with obstacles such as stairs, revolving doors, and elevated borders (Kern, 2020).

Practical implication
Incorporate different materials when designing the surface of sidewalks or squares. Cobblestones look very nice but are hard to navigate with wheels of any kind. Incorporating some smoother tiles can help prevent a lot of struggle or people flat out avoiding the place.

Related patterns
09. A short walk away, 13. Level out.

45

16. A quick change

Diaper changing stations are accessible to all caregivers.

Theoretical back-up
When out and about caregivers should be independent when moving, especially with young children (National Association of City Transport Officials, 2020). This applies to mobility but, of course, also to available services.

Practical implication
Accessible diaper changing stations in buildings open to the public. These stations are not only located in the womens restroom, making it also possible for fathers to change the diaper.

Related patterns
09. A short walk away

17. Reclaim the street

Residential streets become a safe playing environment for children.

Theoretical back-up
Children play in a radius of around 250m around their house (van Andel, 1986) and some of their favourite places to play are special street parts such as broadened pavement, corners and alley entrances. This calls for a need to integrate these traffic and play areas in an optimal way when possible (Danenberg, 2018).

Practical implication
This means rethinking the traditional street design in a more inclusive and flexible way. For this objective, broader pavement, speed limits, greenery and public furniture could be used. The design of the street should also be adapted to the specific wishes of the residents.

Related patterns
04. Limit speed, 05. Bye bye parking, 08. Know your neighbours, 21. At an impasse.

18. Multifunctionality is key

Spaces and furniture are multifunctional to stimulate alternative and creative uses.
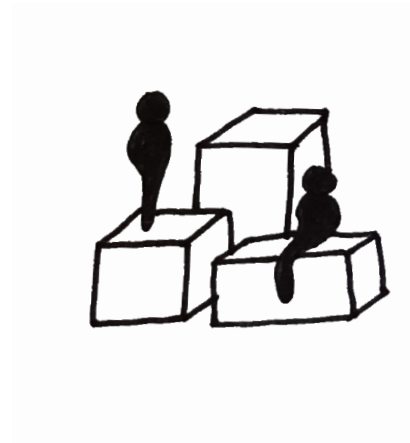
Theoretical back-up
Children prefer places that are diverse and accessible (Talen & Coffindaffer, 1999). Thereby, children do not always like to play in playgrounds, but also like to be able to play in the 'grown-up world' (van Andel, 1986). By making an area that can be used by different ages and groups, it becomes an interesting place to socialise and play for kids.

Practical implication
Create areas that can be used for different activities and by different ages. Adding things like multiple levels or seating spaces can augment the experience. A big park area can be multifunctional but so can a movable piece of furniture, scale does not matter

Related patterns
19. Pocket playgrounds, 26. Be ambiguous.

13. Involve the parents

Caregivers are encouraged to be involved in their children's play.

Theoretical back-up
It is important for a child's development to explore creative playing options and also to create a bond with trusted adults (Danenberg, 2018). Streets can provide possibilities for outdoor play, inspiration, personal development, and interactions for children and their parents (National Association of City Transport Officials, 2020).

Practical implication
Design areas and playground furniture that can accommodate more people or need several people to activate.

Related patterns
08. Know your neighbours, 27. Come and see, 28. My own boss.

19. Pocket playgrounds

Small leftover areas are converted into inviting playing spaces.
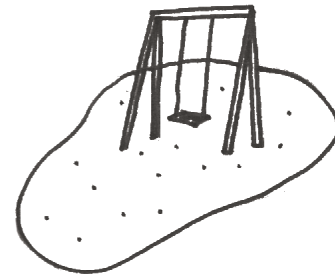
Theoretical back-up
Children in the street view are importance in keeping a public space lively (Cele, 2008). Children's space is frequently restricted to the playground, with the majority of the urban fabric and infrastructure being overlooked as a regular hangout for young people. Children can make friends, resolve issues, and spend non-screen time in public spaces, which is a valuable aspect in the digital age (Danenberg et al., 2018).

Practical implication
Small areas in the street network are equiped with a simple object inviting play such as monkey bars, steps, turning objects, or a game painted on the floor.

Related patterns
09. A short walk away, 16. Reclaim the street, 20. Level up, 22. Quiet zone, 23. The observer, 24. Pick it up.

20. Level up

Provide adapted outside playing opportunities for all ages.
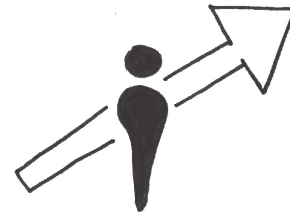
Theoretical back-up
Children from the age of 11 are still in primary school but start to express interest for more. As a consequence, playgrounds are used less by this age group and they start moving towards grass and sports fields (Helleman, 2021). The other way around, toddlers can have difficulty playing in a traditional playground as they can not yet reach everything.

Practical implication
Acomodate crawling toddlers up to teenagers when designing for children in the city.
Seperated areas are nice for the children and the personal attention, but in proximity to each other makes it attractive to mothers of multiple children.

Related patterns
18. Involve the parents, 19. Pocket playgrounds.

21. At an impasse

Small residential alleys (impasses) are a safe way for children to explore and feel adventurous in their own neighbourhood.
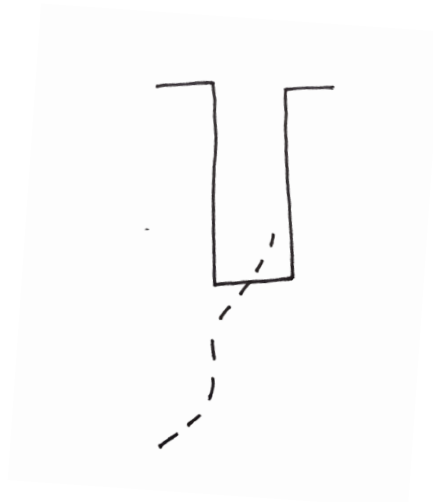
Theoretical back-up

Children like to play on special street parts such as broadened pavement, corners and alley entrances (van Andel, 1986). However, these locations can be dangerous because of the traffic flows passing by (van Vliet & Knasko, 1986). This calls for a need to integrate these traffic and play areas in an optimal way when possible (Danenberg, 2018).

Practical implication

Liege has a lot of impasses, sometimes connected to each other. They go inwards into the building blocks, away from the traffic, making them an exciting and safe playing space. However, it would be beneficial to work towards cleaner and better lit impasses. Therefore, more street lights and trash cans have to be incorporated in their design.

Related patterns

04. Limit speed, 05. Bye bye parking, 16. Reclaim the street.

22. Quiet zone

Provide a safe place for quiet play (sitting, talking, socialising and watching).
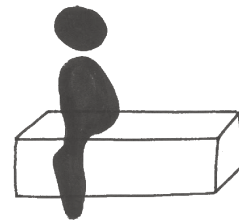
Theoretical back-up
Playing can also take the form of sitting, talking and socialising; or simply looking at other children playing. This is an important aspect of play, especially for girls (Helleman, 2021).

Practical implication
Provide safe spaces for children to sit, watch and socialise when designing a place for them. Next to the regular slides and swings for active play, incorporate a tree house that overlooks the play area, blocks that can also be used as seating or even swings for multiple people.

Related patterns
17. Multifunctionality is key, 19. Pocket playgrounds, 23. The observer.

23. The observer

Provide a comfortable place for the mother to oversee her child(ren) play.
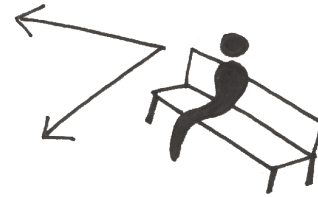
Theoretical back-up
Playgrounds are important social gathering spaces for children (Cele, 2008). However, this is also true for their parents. They can watch over their child(ren) while sitting in the sun, having a chat or playing with the smaller children.

Practical implication
Always include a pleasant seating arangement close to or next to playing areas. Make them face the sun or in the shadow depending on the place and use, out of the wind.

Related patterns
19. Pocket playgrounds, 22. Quiet zone.

24. Pick it up

*Areas designed for playing should include some moveable objects.*

Theoretical back-up

Children explore the world around them by climbing, touching, pushing, swinging and all the other things the body can do. They are discovering how the world around them works. The manipulation of places through actions, even small very small actions, can make a place more valuable for a child (Cele, 2008). Loose objects invite constructive play (Maxwell et al., 2008).

Practical implication

Include moveable or modular objects in playing area designs. This can be types of furnitures, but also blocks or toys they can handle and move.

Related patterns

12. Nature play, 19. Pocket playgrounds, 20. Level up.
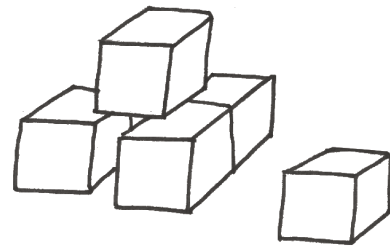
25. A pop of colour

The city should be a fun and colourful environment.

Theoretical back-up
Children's experience of a place is heightened by the use of colours, patterns and textures (Danenberg, 2018).

Practical implication
Colours should be an integral part of the design without taking over the whole image. The colours can be added through the use of different materials, public space furniture, facades, art installations, murals,... It also offers a possibility to design with children directly in their neighbourhood on a small scale.

Related patterns
16. Reclaim the street, 29. Eye candy, 30. Add texture.

26. Be ambiguous

Some objects are ambiguous to stimulate curiosity and creativity.

Theoretical back-up
Children prefer places that are diverse and accessible (Talen & Coffindaffer, 1999). Thereby, children are very curious by nature, they constantly want to explore (van Vliet & Knasko, 1986). It is essential that children find enough stimuli in their neighbourhood to develop their creativity and wonder (Danenberg, 2018).

Practical implication
Things can be ambiguous in form, function, or material. The object however should also be appealing to adults and could have a function such as separating different areas, create seating spaces, offer shading,..

Related patterns
17. Multifunctionality is key, 29. Eye candy.

27. Come and see

Activities and short-term installations keep the neighbourhood interesting for children and their parents.

Theoretical back-up
Children want to have new experiences while still being in a recognisable space (Danenberg, 2018). It is beneficial for a child's development to learn and experience new things in a safe environment. Additionally, it offers the possibility to create a stronger local community.

Practical implication
Utilise public spaces for activities open to the public to engage residents and visitors alike.

Related patterns
08. Know your neighbours, 09. A short walk away, 18. Involve the parents.

28. My own boss

Children can explore and navigate the area where they live by themselves.

Theoretical back-up

It is important for children to develop a sense of self and autonomy in their living environment (Danenberg, 2018). The autonomy children require increases when they become older. To allow them to explore and experience independence, it is important that their outdoor environment offers this possibility (Stevenson, 2007).

Practical implication

Implement street furniture that children can reach (e.g. seating, trash cans, ramps,...). Use clearly understandable signs and guides in the public space.

Related patterns

01. Safety first, 03. Separate streams, 09. A short walk away, 10. Straight forward, 19. Pocket playgrounds.

29. Eye candy

The plints are dynamic and diverse to encourage curiosity.
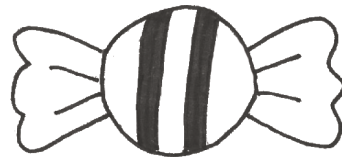
Theoretical back-up
People from various cultural backgrounds prefer different types of businesses using outdoor shop displays (Qvis, 2020). This also makes the eye-level view for children more interesting.

Practical implication
Stores are encouraged to have displays outside, but without hindering the walking path.
The use of different colours, textures and even greenery can make the plint appear more dynamic.

Related patterns
16. Reclaim the street, 25. A pop of colour, 30. Add texture.

30. Add texture

Using different textures and materials in the public space creates more versatility.

Theoretical back-up
Children's experience of a place is heightened by the use of colours, patterns and textures (Danenberg, 2018).

Practical implication
Facades become more interesting when they comprise different layers. This can take the form of different materials, depth and the use of vegetation.

The public space design should use a variety of materials and incorporate greenery of different heights.

Related patterns
12. Nature play, 25. A pop of colour, 29. Eye candy.
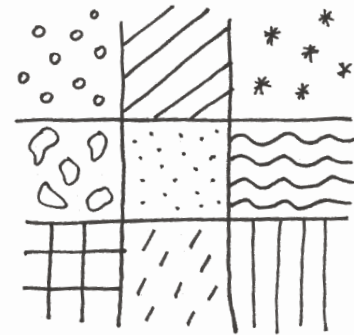
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