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How do children perceive the role of the built environment in promoting social sustainability?

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Abstract

Urban sustainable development is crucial for the coming decades, however, to plan for socially sustainable cities is still a puzzle according to research. This paper discusses the relevance of including children in the planning of sustainable urban spaces since they are deemed to be crucial indicators of sustainable development. The discussion is first based on highlighting the importance of social integration to promote social well-being and consequently social sustainability. It is examined how the implementation of built environment concepts such as mice use, integrated nature and circulation alternatives contribute to promote such social integration.

Through interviews held with children it was first analyzed how they perceived their built environment and spoted notions they deemed necessary. Secondly, through a research-by-design approach, the children expressed how they acknowledged the built form. Finally, the participants sketched their preferences to stimulate social integration through built-up concepts. The findings suggest that children do indeed value integrated nature and mixed use in the city structure to promote social interaction and integration, however, circulation alternatives are still disputed. Such findings support theories to promote social sustainability put forward by the existing literature and may guide future urban planners when designing cities to achieve more sustainable environments.

Key words: Social sustainability, social integration, circulation alternatives, int egrated nature, mixed use

Contents

Total word count: 6226 (not counting abstract, headings & subheadings)

1. Introduction

1.1. Components of a sustainable city and the relevance of children's inclusion

Urban sustainability has gained significant attention in recent years, particularly in light of rapid urbanization and its associated challenges. With more than half of the population (UN DESA, 2023), equating to 4.5 billion people (Trading Economics, 2024), now living in urban areas, the challenges to achieve environmental, social, and economic sustainability have become more evident and crucial to be tackled (Colantonio & Dixon, 2010). While the economic and environmental dimensions have received considerable focus, social sustainability remains relatively less explored (Washington et al., 2019). It is within the scope of this research to discuss how social sustainability can be achieved. Defined as the development that fosters harmonious cohabitation among diverse groups while enhancing the quality of life for all segments of the population (Stren and Polèse, 2000), social sustainability encompasses various aspects of social well-being, including social integration (Rogers et al., 2012; Stren and Polèse, 2000).

Social integration emerges as particularly significant within the built environment, influencing social cohesion and community dynamics (Koramaz, 2013). Social integration refers to the quality of an individual's relationship with society and their community, playing a pivotal role in fostering social well-being (Keyes, 1998). Rahman and Pujiyanti (2023) explain that planning approaches, such as circulation alternatives, integrated nature and mixed-use built environments, should be included in the urban framework to foster social well-being. In consequence, social integration is a fundamental aspect when designing inclusive communities, promoting social interactions, and enhancing the overall quality of life for all members of society within the built environment.

The principles of sustainable development advocate for balancing environmental, social, and economic goals to meet current needs without compromising the well-being of future generations (World Commission on Environment and Development, 1987). Children, as future architects, decision-makers, and members of society, hold a particular stake in these aspirations. Their well-being is a crucial indicator of sustainable development (Malone, 2001). Consequently, we need to understand what their social well-being entails and how it may be attained in the built environment following their own perception.

Engaging children in planning processes is essential for creating socially sustainable urban structures, as evidenced by research highlighting their valuable insights (Bringeland, 2017; Buss, 1994; Cele & van der Burgt, 2015; Derr, 2015; Derr & Tarantini, 2016; Hovind, 2014). By involving children, cities can develop solutions that enrich the wider community, promoting intergenerational connectivity and sustainable public spaces (Arup, 2017; Hanssen, 2019).

1.2. Research problem and motivation

This research aims to explore and analyze how children view the built environment and its social sustainability through interviews held with them and by following a research-by-design approach with their active participation sketching their ideal urban structure. The motivation behind this research question is rooted in the growing recognition of the importance of achieving social sustainability in urban planning. Children represent a significant yet often overlooked demographic in urban planning processes (Mansfield et al., 2021). Understanding their perspectives is essential due to their substantial use of public spaces and their role in shaping community dynamics. Involving children in urban planning aligns with the broader goal of creating more inclusive and equitable cities to cater for the needs of all residents

(Arup, 2017; Hovind, 2014). By exploring how children perceive the role of the built environment in promoting social sustainability, this research seeks to uncover valuable insights which may contribute to future urban planning strategies for the creation of more child-friendly, inclusive, and socially sustainable urban environments.

Research question:

How do children perceive the role of the built environment in promoting social sustainability?

Sub-questions:

How do children conceptualize their neighborhoods/their built environment?
How do they acknowledge social integration?
What are their preferences for the built environment to promote social integration?

2. Theoretical framework

While it is important to plan for sustainable development, planning for social sustainable development is still under discussion. Through the lens of social integration key planning concepts such as circulation alternatives, integrated nature and mixed use are proposed for designing socially sustainable cities.

2.1. Social aspects

Social sustainability has been defined as "development (and/or growth) that is compatible with harmonious evolution of civil society, fostering an environment conducive to the compatible cohabitation of culturally and socially diverse groups while at the same time encouraging social integration, with improvements in the quality of life for all segments of the population" (Stren and Polèse, 2000, p. 15_16). Thus, social well-being is recognized as a fundamental aspect of social sustainability, especially, as mentioned above, taking children into account as Malone (2001) expresses that children's well-being is a fundamental aspect of overall sustainable development.

Social well-being is multidimensional tackling different social aspects. Keyes (1998), recognizes five dimensions. The first dimension is social integration which is the quality of one's relationship to society and community. The second dimension is social acceptance, which entails the trust of individuals in others (society). The third dimension is social contribution, which consists in someone being a member of society and giving value to it. Social actualization is the fourth dimension which embodies the evaluation of the potential and the trajectory of society. The last dimension is social coherence: to achieve social coherence, someone needs to have a positive perception of the quality, organization and operation of the social world. In the urban fabric, social integration emerges as an especially important contributor, however, compared to the other dimensions it has been less discussed within the context of the built environment (Koramaz, 2013). Planning for social integration, particularly for children's integration, fosters social well-being and social sustainability (Schneider-Skalska, 2019).

The physical and social environment, characteristics of space, facilitate activities and thereby a large variety of relations among individuals (Koramaz, 2013). It is within the social environment that

opportunities for the development of social relationships arise. As societies evolve and grow more complex, social integration becomes increasingly crucial for fostering social well-being. Social integration and a sense of community are especially important for the most vulnerable members of society, such as elderly people and children (Koramaz, 2013). Urban dynamics and local factors, including socio-cultural life, the built environment, and urban public services, are closely linked to social integration and can enhance it (Koramaz, 2013).

In addition to these urban dynamic and local factors, social integration can be supported by a set of spatial planning concepts, such as circulation alternatives, mixed land use, and greening can support social integration (Eizenberg and Jabareen, 2017; Rahman and Pujiyanti, 2023; Yıldız et al., 2020). These factors contribute to a variety of social aspects, including a sense of community, place attachment, and healthy community of neighborhoods (Yıldız et al., 2020). Planning for these spatial concepts can make streets a place for social integration for all ages within the population, but also help children make more friends and increase the overall quality of life (Sauter and Huettenmoser, 2008).

2.2. Spatial aspects promoting social integration

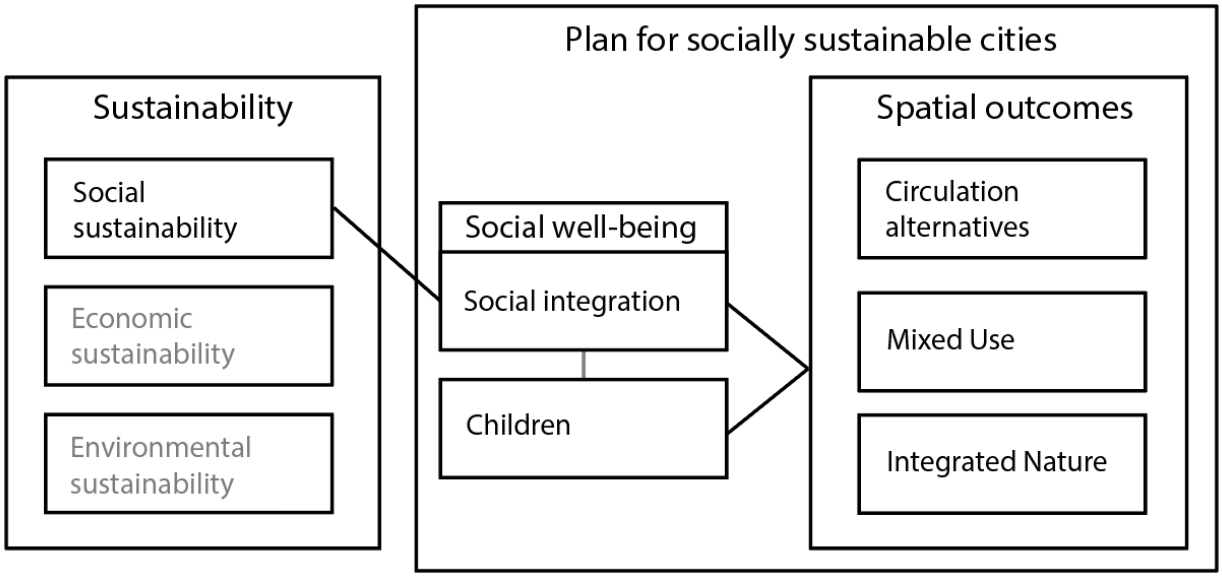
According to Rahman and Pujiyanti (2023), **circulation alternatives** are planning solutions which allow for increased pedestrian traffic, commercial nodes and multi-family properties designed with pedestrian walkways, medians and landscaping. The aim of circulation alternatives is the reduction of vehicle speed to make the surroundings safer and thus more integrative. Besides, as pointed out by Sauter and Huettenmoser (2008), there is a need for more car-free residential neighborhoods as children also need that space to play and create social bonds. To plan for both reduced speed vehicle traffic and to aim for car-free streets, the Swiss Federal roads office proposed the ‘encounter zones’. In these streets vehicles are not allowed to go over 20km/h, pedestrians have circulation priority and children have the chance to play more safely. According to Sauter and Huettenmoser (2008) these encounter zones have several positive impacts on social integration. For instance, children find themselves to have more friends compared to streets where traffic circulation is higher and faster. Sauter and Huettenmoser (2008) found that these delimited zones make a considerable difference to the social integration of people, especially children, and proved that if speed limit decreases, social integration increases.

Mixed use, a type of urban design that blends multiple uses in the same general area, is another urban structure that enhances social integration by addressing a wide range of social challenges (Gu et al., 2023). A wide variety of activities can be offered by mixed-use areas, drawing in people and contributing to a cohesive community identity (Passon, Leví & Del Rio, 2008). An illustrative example is the utilization of schoolyards by children both during school hours and at the weekends and during the holidays as a public space to host neighborhood events and summer activities. Thus, mixed-use areas can serve as meeting places for families with children, young adults, and other residents in the community, thereby strengthening social integration (Passon, Leví & Del Rio, 2008).

Integrated nature refers to including greenery in the urban structure which may range from urban parks, urban woodlands, green fields to wall creeper greens (Anguluri and Narayanan, 2017). These green spaces provide environments for recreation, thereby facilitating the inclusion of people with different backgrounds and cultures and promoting well-being, making green spaces a place for social encounters (Germann-Chiari & Seeland, 2004). Small interventions for green spaces within the urban environment help to promote its use and combat spatial segregation (Picascia and Mitchell, 2022). Embedding green

spaces in the urban fabric, which people can visit, is therefore a factor that significantly contributes to social integration (Ubani et al., 2023). Children's perspectives align with this idea, as they recognize nature as a contributor to overall well-being (Arola et al., 2023).

According to the literature, these three planning concepts are essential for creating a socially sustainable city. Consequently, achieving socially sustainable cities becomes more feasible, if these concepts are included in the design of urban spaces.



This conceptual model illustrates the three dimensions encompassed within sustainability, being social sustainability the focus of this research. Social integration is a fundamental pillar within social sustainability. The implementation of planning concepts such as circulation alternatives, mixed use and integrated nature are considered to pave the way for social integration by promoting social well-being. Children, constituting an important demographic within society, are deemed crucial for sustainable planning.

Through the children's participation in the interviews and the sketching stages, this study expects them to come up with and incorporate within their designs, the concepts for sustainable planning set out in the theoretical framework. It is presumed that the notions of circulation alternatives, mixed use and integrated nature are addressed and considered as crucial aspects. From a more design approach perspective the following design results are expected in their sketches: green spaces, circulation solutions which allow people to move more freely and safely, and more social spaces and varied facilities to their disposition.

3. Methodology

3.1. Research design

The research was conducted by a research-by-design method in line with what Roggema (2016) proposes: in a continuous interactive setting that encourages creativity, collaboration, and the generation of new knowledge among participants. Roggema (2016) outlines three stages in this approach: the current state

analysis, creative exploration, and future visioning. In this study, the first stage involved presenting the actual street near the school as it currently looks (Figure 1). In the second stage, participants were provided with a blank sketch of the street and asked to design their ideal scenario (Figure 2). In the final stage the children were presented with the same street incorporating more concepts the literature deems important for achieving urban social sustainability (Figure 3) for them to contrast with their own sketch.

Figure 1. Korreweg currently (Source: Author)

Figure 2. Korreweg sketch for children to design with

Figure 3. Proposed Korreweg according to literature (Source: Author and Images 1-6 in Reference list)

3.2. Participant recruitment

The data collected was primary qualitative data through the participation of children- between the age of 16 and 17- in a school in Groningen, The Netherlands. With the consent granted by the school, a class of seven students took part in this project following a lesson plan (see Appendix 5).

According to Mose (1994), six participants is already a sufficient number regarding interviews for a phenomenological study. This study exhibits elements of a phenomenological approach, particularly for its emphasis on understanding the perceptions and experiences of children within their built environment.

A street was chosen (Korreweg) within the neighborhood of the school to provide the children with a familiar environment, ensuring they felt confident and comfortable during the participation process.

Korreweg is a highly dense street with very few green spaces, mixed-use options, and circulation alternatives, making it an ideal scenario to contrast with existing concepts supporting social sustainability.

3.3. Data collection procedure

After exploring the street on a brief field trip, the researcher handed out copies of three scenarios correlating with the three different stages proposed by Roggema (2016) and encouraged the children to sketch their ideal street. In the first scenario, the street was presented without any modifications (Figure 1), allowing participants to familiarize themselves with the street. In the second scenario, children were free to make changes to the street's design (Figure 2), encouraging creative thinking. The third scenario involved presenting the selected street with modifications based on concepts proposed by existing literature for sustainable cities, such as circulation alternatives, mixed use and integrated nature (Figure 3), enabling the participants to compare their designs with an example based on the literature. The participants were instructed to focus on social sustainability aspects, disregarding the economic and environmental dimensions of sustainability. In a consecutive stage, interviews- adapted from Ziaesaeidi and Cushing (2019) were conducted with the aim to understand how the participants perceived the built environment of the example street. Following Mandell (1998), the researcher engaged in joint action with the children to create mutual understanding, eliminating hierarchy to give the children full trust to explain and reason their decisions. Interview replies were recorded, translated from Dutch into English, and documented in writing. Sketches were collected for their analysis.

3.4. Data analysis

Each design was reviewed to understand the underlying intentions and motivations behind the suggested modifications. Concepts such as greenery enhancement, circulation measures, and social spaces were identified and documented. The content was analyzed to categorize the types of changes suggested by participants, such as the addition of green spaces, bike lanes, pedestrian crossings, more mixed-use public areas, and commercial facilities. Additionally, descriptive statistics, including the mean, were calculated for each survey statement/question to summarize the tendency, providing an overview of general attitudes towards different features in the neighborhood. In some cases, ideas deemed interesting for discussion put forward by a minority of participants were also mentioned. The feedback obtained from the children's sketches and interviews was jointly analyzed to determine what they found valuable in the urban structure and compared to the literature on how to create more socially sustainable cities.

3.5. Ethics

In terms of ethics, age and gender considerations were not taken into account. To interact with children effectively, the researcher followed Mandell (1998), engaging in joint action with the children to create mutual understanding. Privacy was maintained by anonymizing all names and information regarding the children and the teacher. Children were referred to as 'Child A, B, C,' and so on. Before conducting the interviews and sketching, all the participants gave their consent to have the interviews recorded and their sketches saved. All data, including the feedback from interviews and sketches, was stored until the finalization of the Bachelor Thesis, and subsequently deleted.

3.6. Limitations

Certain limitations to this approach need to be considered. The first possible limitations were the children's attitude towards getting engaged in the project, and how they might perceive the researcher's positioning, viewing him more as a leader than a collaborator and consequently, hindering their ability to express themselves freely.

It is also important to note the narrow scope of the present research as it has been conducted with a small group of seven children of the same age in the same area, who may have a localized view of the built environment. As a consequence, another limitation of this partly phenomenological study may arise as it focused primarily on the subjective experiences and perceptions of this small group of children, probably limiting the applicability of the findings to other settings and demographics.

Lastly, having only seven participants made it more challenging to identify general patterns, and as a result, the findings may not be representative of broader populations. Despite all the limitations mentioned above, the concepts explored can be applied to a wider audience with due discretion.

4. Results

The following results are based on interviews conducted with the children during the short fieldwork trip and back at school in the classroom prior to and while sketching. Participants had to rank questions and statements on a likert scale from 1-10 (see Appendix 2).

4.1. Results based on the interviews: conceptualization of the built environment

Social

Interviews were conducted to assess the participants' conceptualization of the built environment in the example street (Korreweg) (see Appendix 1 for questions , Appendix 2 for the Dutch and English answers and Appendix 3 for the ranking of the statements and questions). Both social and spatial dimensions were addressed in the interviews.

Regarding the social dimension, the participants felt the need for more social integration within the selected urban environment. The participants averagely ranked the 'need for public spaces which the neighborhood residents and children can use along with other children to increase the sense of sociability' as 6.57 out of 10. This shows that they valued spaces in which socialization can take place. The participants thought that playgrounds or places dedicated to children were important for socialization in the urban structure, however, they indicated that there is scarce space where children can play noisily. This space for leisure was ranked 4.50 out of 10 (1 no space for children, 10 plenty of space for children). One participant mentioned cafés to be places where people in general can socially integrate, however, they pointed out that there are already a number of cafés further up the current street which are not shown in the selected scenario.

Spatial

Within the spatial framework, the concepts of mixed use, circulation alternatives and integrated nature were addressed.

Mixed use. The first component within the spatial dimension discussed was mixed use. In relation to the general perception of the street, a majority of five out of the seven participants explained that there was little variety between the buildings. Participant C described the street as “a bit boring” and Participant A mentioned that they would not live in this type of built environment. This explains the just above average result of 5.86 out of 10 (1 not attractive, 10 very attractive) when ranking the ‘liveability and planting in the neighborhood’ with liveability being the variable of interest. Focusing on the range of the present available space, the participants emphasized the need for more and different mixed-use outdoor and indoor places where children can socially integrate. Participant C suggested that "it's nice for children to have other children living nearby". An exemplary reply concerning both social and spatial dimensions of places fostering mixed use mentioned were cafés, as they were considered to be a spot where people could meet and socialize according to Participant A. The need for space in general where children can engage with more children was also emphasized by Participant C. When asked if they had the opportunity to use such suggested spaces, some of them agreed that they would make use of them (Person B, D & E).

Integrated nature. In relation to integrated nature, five out of the seven participants felt the need for more space dedicated to greenery in general. When questioned to rank the need for green spaces in the street, participants averaged 6.07 out of 10 (1 no need for green space, 10 very high need for green space), suggesting that having more green spaces would be welcome. An exemplary reply was given by Participant E saying that “it would be nice if there was a bit more greenery”. Three out of the five mentioned parks specifically for children and suggested locating them next to schools, as they felt there was limited space for children to play loudly, scoring 4.50 out of 10 (1 no space for children, 10 plenty of space for children). Participant C argued that children need places where they can play because places such as parks are helpful to promote bonding. In that respect, participant E expressed that adding a park would be essential to foster social interactions, but according to them “it would be nice to have a playground” as well.

Circulation alternatives. The last spatial component participants dealt with was circulation alternatives. Looking at circulation alternatives in closer detail, all of them agreed on the relevance of having the infrastructure for cycling in the street. Besides, all participants except from Participant C emphasized the importance of walking and the ease of walking in the specific urban environment. According to their ranking, the highest scoring statement was for the ‘walking and biking options to the neighborhood-school’, which averaged 8.14 out of 10 (1 no options at all, 10 plenty of options). Commenting on the present state of the street, participants A & C expressed that biking was easy and well signposted, especially for children (Participant C). In relation to other forms of transport and connectivity, five participants pointed out the importance of public transport to move around. Three participants agreed that there were too many cars in the street, not only making it dangerous for children to play but also taking space away from them. Person B & C expressed that there is “a lot of traffic”, Person D simply described the situation as ‘too many cars'. In terms of general safety in the street, participants had, on average, a ranking of 4.29 out of 10 (1 no quiet places at all, 10 plenty of quiet places), for ‘safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood’, making evident that there were only few spaces where children could play safely and socialize. However, in contradiction to the idea of too many private cars in the street expressed by three of the participants, the need to reduce the total number of vehicles around the neighborhood-school was ranked very low 3.71 out of 10, meaning that they did not see much need in lowering the volume of transit. Another finding which

ranked very low was the ‘covered paths between buildings’, scoring a 1.14 out of 10 (1 not covered at all, 10 highly covered).

After describing in the interview how the built environment was perceived, the research moved on to the second stage where the participants were asked to sketch their ideal street scenario. The aim of the sketches (see Appendix 4) was twofold: to analyze first how the participants acknowledged social integration in the built environment, and secondly, how they stated their preferences to enhance social integration by redesigning the example street.

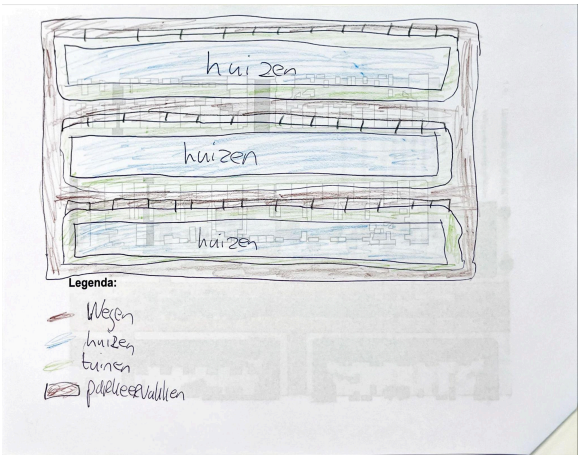
4.2. Results based on the sketches: preferences and changes acknowledging social integration

The need for **mixed-use** spaces was sketched by four out of the seven participants. They emphasized that more options of service facilities in Korreweg street were necessary. It is worth pointing out that all four participants who mentioned mixed use, also mentioned the importance of the presence of a (primary) school in the urban structure of the street (see Appendix 4, Participants B, C, D & E). Interestingly, two participants (D & E) who considered the school to be part of mixed use, allocated the facility next to green spaces suggesting that children from the school could use the green space during and after school hours. Participants C & D mentioned in their interviews that those green spaces would be the places where children could play noisily. As for services, three participants specifically mentioned (C, D & E) a supermarket, since, according to them, there is a lack in the neighborhood. Other services sketched included gastronomy places such as restaurants and cafés, as well as, shops, hairdressers, drug stores, dentistry and medical services, again making evident the lack of service offerings in the neighborhood. In contrast, there was one participant (A) who did not sketch any mixed-use places at all, but a housing complex surrounded by greenery. This participant deemed planning for housing more important than for mixed-use spaces.

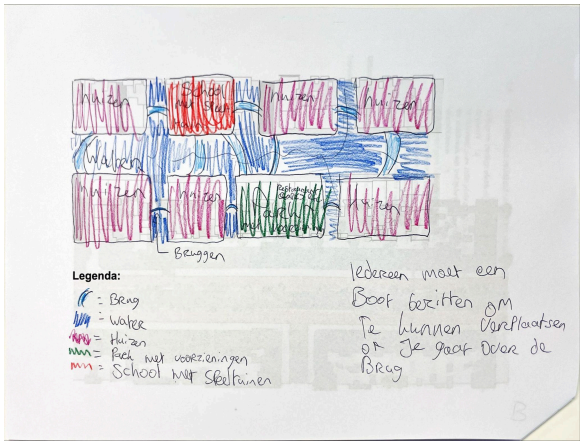
As for **integrated nature**, a majority of six out of the seven participants considered greenery necessary to have a more socially sustainable environment. The concept of integrated nature varied among the participants, however, the two most mentioned forms of nature were parks and green spaces between streets. Playgrounds with green spaces were deemed important in the urban fabric. Participants B, D & E even sketched a whole block for more green space within the neighborhood, emphasizing the need also mentioned by them when holding the interviews. Greenery was sketched in the middle of the street as well (Participants C & E) and when discussing it with the two participants who sketched this concept, they expressed the need for more greenery even within the street composition. Participant A illustrated grass around the housing complexes as sufficient greenery for the neighborhood.

The **circulation alternative** concept was touched upon 5 times. As it was the case for integrated nature, sketched solutions to circulation alternative implementations varied among participants as well. The two most important circulation alternative features mentioned were the presence of cycling paths (participants C, D, E, F & G) and the need for more pedestrian crossings to make both sides of the streets be more connected (participants C, D, F & G). A high demand for parking spaces was also acknowledged by three participants (Participant D, E & G) who mentioned the need for a parking space for residents and visitors to the street. These participants even ‘crossed out’ blocks of the neighborhood dedicating them

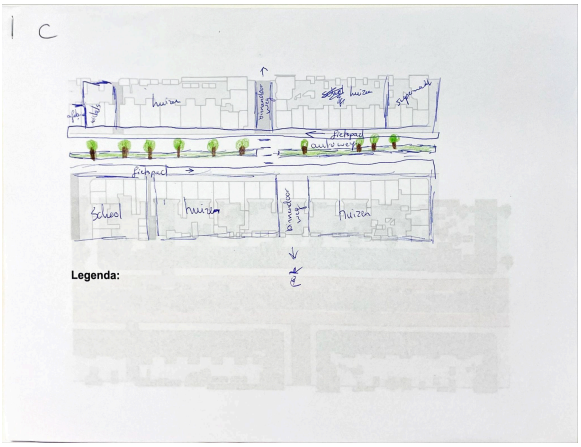
exclusively to parking space. They further commented that the parking spaces would be allocated within the street structure (see Participant D, E & G). As for the number of vehicles in the street, there was only one participant (Person G) who wanted to limit the traffic volume, especially for larger cars, explaining that the sketched ‘yellow cars’ (see sketch in Appendix 4, Person G) should not be circulating in the sample street. Additionally, this participant drew a bus stop on the street to enhance accessibility for residents and visitors. Another participant (B) outlined a clear way to get around, either by using one single type of transportation (boat) or by walking along the canals, potentially trying to show a complete reform of the street landscape.



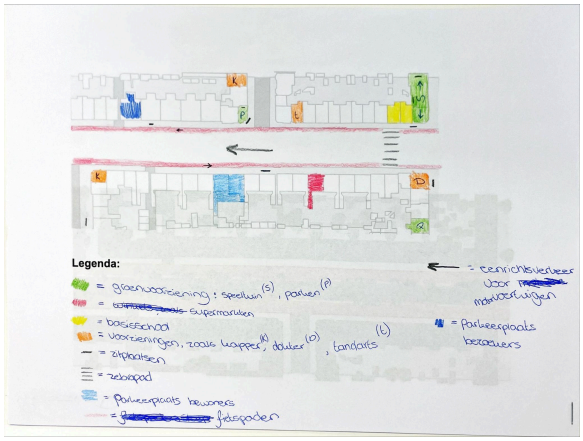
Person A



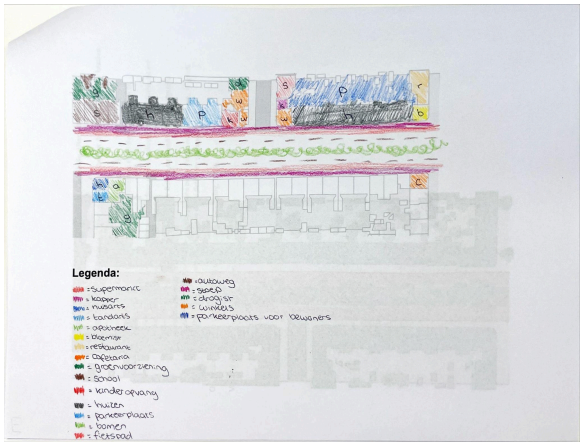
Person B



Person C



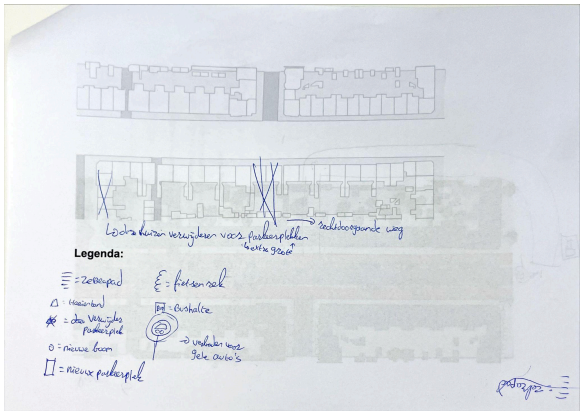
Person D



Person E

Person F

Person G



Person G (back)

4.3. Results based on the interviews and sketches: trends

In general, the interviews and sketches revealed a correlation in several key findings about social spaces and services for children and society as a whole, as well as about transportation and traffic concerns. First, the participants highlighted the need for playgrounds or dedicated areas where children can play noisily. In the interviews, they expressed that there was very little space for children to play in this manner. Their concern was reinforced in their sketches drawing playgrounds near (primary) schools as locations where children should have space to play loudly as well.

Parks, especially located near schools, were also frequently mentioned in both the interviews and sketches. The interviewees highlighted parks as essential places where children could play loudly and form bonds, with Participant C noting their role in fostering social interaction. The sketches underscored the importance of parks and playgrounds integrated with nature, particularly those located next to primary schools.

Regarding other types of mixed-use spaces, there was a notable connection between the interviews replies (participants A, B, D & G) and the sketches (participants D and E) highlighting the presence and thus importance of cafés as social interaction hubs. Cafés were mentioned by several participants in both the

interviews and sketches. According to the participants, these places played a crucial role in fostering social integration among children and residents as a whole.

When tackling circulation alternatives, there was a consensus on the importance of having the urban infrastructure for cycling. All interview participants agreed on the significance of cycling for getting around, and five out of seven sketches emphasized it by incorporating cycling paths in the street. However, there was a notable difference between the results obtained from the interviews and sketches regarding traffic volume. In the interviews, participants did not prioritize reducing traffic volume, ranking it very low in importance. Whereas, in the sketches, the need to reduce traffic was evident. For instance, participant A specifically limited the flow of 'yellow cars'.

5. Discussion

The results from this study provide valuable insights into how children perceive the built environment and its role in promoting social sustainability through examining three key concepts of the built environment.

Circulation alternatives are crucial for making streets pedestrian-friendly and providing spaces where children can create social bonds through play (Sauter & Huettenmoser, 2008). Participants consistently emphasized the importance of cycling infrastructure for social integration, supporting the notion that such alternatives are vital for social sustainability (Rahman & Pujiyanti, 2023). The inclusion of cycling paths in the children's sketches demonstrated their recognition of the benefits of safe and accessible transportation options. Additionally, several participants highlighted the need for more pedestrian crossings on the sample street (see Appendix 4, Participants C, D, F & G). Similarly, in a study conducted by Ziasaeidi & Cushing (2019), the participants also highlighted the need for a bridge or safe crossing to enhance safety for traveling to and from the neighborhood school. This underscores a common concern across different studies: the necessity of safe pedestrian infrastructure for children's independence and safety. These findings align with the proposed scenario of more pedestrian friendly streets within the urban framework. Specifically, they resonate with the concept of 'encounter zones' proposed by the Swiss Federal Roads Office, where pedestrians, especially children, have full priority in the street (Sauter & Huettenmoser, 2008).

Interestingly, both the sketches and interviews highlighted public transportation, transit volume, and the means of transit as significant factors. However, when the participants were asked to rank the need to reduce these components, they indicated a low priority for reducing the transit system. This suggests that while public transit is important, reducing it is not a major concern, which contrasts the literature emphasizing the negative impact of high traffic volumes on social integration (Sauter & Huettenmoser, 2008). Additionally, the participants ranked the importance of 'covered paths' very low, at 1.14 out of 10 (1 being not covered at all, 10 being highly covered), indicating that current pedestrian paths are too exposed to traffic and perceived as unsafe, especially for children. Participant A stood out by imagining a neighborhood interconnected by canal bridges, where boats served as the main mode of transportation and walking was facilitated by the bridges. Additionally, Participants D, E, and G emphasized the need for parking spaces in their sketches. These findings are in accordance with the findings of a similar study conducted by Ziaesaeid & Cushing (2019) which showed that implementing restrictions on car entry and heavy traffic on the routes to the neighborhood school was a crucial factor in promoting the independence

of children and youth and facilitating their activities. These findings taken together show that while participants did not prioritize reducing transit volume, they expressed a significant need for better-covered paths to increase pedestrian safety, highlighting an area for improvement in urban planning.

According to Passon, Leví & Del Rio (2008) **mixed-use** areas in the streets are meeting places for families with children, as well as for young adults and other residents where they can strengthen their social integration. In the present research four out of seven participants pointed out the need for mixed use in the street, highlighting its importance. Interestingly, all four mentioned a (primary) school to be an important component (see Appendix 4, Participants B, C, D & E). Two out of the four participants (Participants D & E) designed green spaces (illustrated as a park and a playground) where children can play during and after school hours which is in line with the suggestions of Krishnamurthy (2019) and Torres and Lessard (2007) that these spaces can be flexible, allowing children to use such spaces for different activities during different times. Ziaesaeid & Cushing (2019) found similar results, as participants requested more green spaces and playgrounds for being physically active and noisy. This is an important finding, as these areas are essential and required for improved planning aimed at socially sustainable development with a focus on children. The emphasis on playgrounds and parks as essential social spaces is consistent with Malone (2001), who emphasized the importance of children's well-being in sustainable development. Integrating these spaces, particularly near schools, aligns with the principles of social integration and sustainability outlined by Koramaz (2013). These areas not only provide recreational opportunities but also foster social interactions and community bonds, supporting Keyes' (1998) dimension of social integration. Thus, the findings underscore the role of playgrounds and parks in enhancing the quality of life for children, promoting social cohesion, and supporting the broader goal of socially sustainable urban environments.

Anguluri and Narayanan (2017) suggested that **integrated nature** can range from urban parks to green creepers. The research findings correlate with this assumption as integrated nature was addressed varying from solely adding more trees (see Appendix 4, Participants C & G) to implementing whole blocks of greenery- mainly parks (see Participants B, D & E) within the neighborhood. The participants expressed a lack of green spaces and wanted more green infrastructure in the example street. These findings are consistent with similar studies, which found a preference for more green spaces around the neighborhood-school as well (Ziaesaeid & Cushing, 2019; X) However, participants also expressed the need for more green space for children to play, as they were concerned that children did not have enough space in the street to play noisily. This finding recurs in different concepts of the study, as participants also mentioned the need for a place for children to play noisily in questions regarding mixed-use environments. The solutions to this, as expressed by Participants D & E, are parks and playgrounds specifically next to (primary) schools. One respondent (person C) emphasized the need for green spaces for increasing social integration and boosting the bond between parents and children. This participant also focused on the sufficient demand the park would have based on the density of the neighborhood, thus bringing everyone from the neighborhood together to a common place. This finding aligns with the assumption made by Germann-Chiari & Seeland (2004) & Picascia and Mitchell (2022) in which integrated nature and spaces for nature can be a solution to increase social integration and thus decrease social segregation. These findings are also closely related to the findings on mixed use, highlighting how these concepts are intertwined and crucial aspects of an urban environment that fosters social well-being.

6. Conclusion

The aim of this current study was to analyze how children perceive the role of the built environment in promoting social sustainability. To better understand how to plan for social sustainability and social integration fostering well-being, a scope of three physical planning concepts has been determined, including: circulation alternatives, integrated nature and mixed use, proposed by Rahman and Pujiyanti (2023).

Reflecting on the results and discussion of this research, several aspects regarding these three concepts are important to be considered by researchers and urban planners for future analysis and development.

Concerning the **mixed-use** street layout, a relevant finding is the great need for the children to have a wider range of places with different uses in the same area to enhance social integration. Such places range from playgrounds, parks, supermarkets, cafés, shops to other types of facilities. Equally noticeable, is the importance given to the presence of a school in mixed-use streets as it was consistently mentioned by the participants. The (primary) school was also designed next to parks or playgrounds where especially children could perform different activities at different times.

Integrated nature in mixed-use outdoor spaces seemed to be an important aspect in the built environment as it was mentioned by six out of the seven participants. Most of the children mentioned the need for green spaces to have the opportunity to play in a safe space. They affirmed the importance of these green spaces to promote social integration not only among children, but also among all residents. As explained by one participant, these green spaces give the opportunity to form bonds between parents and children, and residents from the neighborhood, highlighting the relevance of integrated nature in the form of parks to promote social integration in the urban environment.

Regarding **circulation alternatives**,'encounter zones' mentioned by Sauter and Huettenmoser (2008) is still more utopian, however as suggested by the children's input, signs to slow down speed and traffic flow are more feasible to implement. Having pedestrian crossing within the street increases the possibility of pedestrian flow and consequently social integration in the neighborhood. Another suggestion emphasized was increasing public transportation to reach more places, thereby reducing the amount of private traffic. A further observation has been to keep promoting cycling, which is already widely implemented in the Netherlands.

Moreover, in relation to circulation alternatives, further research may look deeper into the effectiveness of including more 'encounter zones' to create safer streets but at the same time to allow for necessary flow of transit in the area. As for public transportation it can be further assessed if an increase in its implementation would probably cause a decrease in private car traffic volume. In relation to mixed-use spaces, it could be further examined the necessity to include more facilities as well as to promote a more flexible use of space. As for integrated nature, upcoming research could analyze the extent to which green spaces nurture social integration among users, especially among children.

To conclude, this research demonstrates that the built environment is vital for social integration and consequently social sustainability from the children's perspective. Involving children in the planning

processes offers valuable insights for developing socially sustainable cities, as they prioritize key elements like circulation alternatives, integrated nature, and mixed-use spaces for social integration.

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Images

Image 1: Liefde voor Groningen. (2024) ‘Lunchen in Groningen’. [online image] Available at: https://www.google.es/url?sa=i&url=https%3A%2F%2Fliefdevoorgroningen.nl%2Flunchen-in-groningen%2F&psig=AOvVaw2UxV6ShVNR_dAjGGHnhVci&ust=1715673303953000&source=images&cd=vfe&opi=89978449&ved=0CBAQjRxqFwoTCMDCwaWTioYDFQAAAAAdAAAAABAE [Accessed 17 May 2024].

Image 2: Oogst Groningen. (2024) ‘Eat & Drink - Cafe’. [online image] Available at: https://www.google.es/url?sa=i&url=https%3A%2F%2Foogstgroningen.nl%2Feat-drink%2Fcafe%2F&psig=AOvVaw3aoYQe37GGx6BcJ565FFgD&ust=1715674897005000&source=images&cd=vfe&opi=89978449&ved=0CBAQjRxqFwoTCNi2wqGZioYDFQAAAAAdAAAAABAE [Accessed 17 May 2024].

Image 3: Right Side Placemaking. (2024) ‘Placemaking’. [image]. Available at: https://www.google.es/url?sa=i&url=https%3A%2F%2Fwww.rightside.net.au%2Fplacemaking&psig=AOvVaw1tgSAHdgX72XBr93wwqIZT&ust=1715676683969000&source=images&cd=vfe&opi=89978449&ved=0CBAQjRxqFwoTCND9oe-fioYDFQAAAAAdAAAAABAK [Accessed 26 May 2024].

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Appendix

Appendix 1- Questions to participants in English and Dutch

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)
- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)
- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)
- **High-density neighborhood**
  (1 very low density, 10 very high density)

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)
- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)
- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty of space for children)
- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)
- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)
- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)
- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)
- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)
- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

Based on Questions for youth participants from (Ziaesaeidi and Cushing, 2019) with the scope of Social Integration at all times.

The Dutch versions were translated with DeepL.com (free version).

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) (**gemengd gebruik**)

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)*
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk)
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
  (1 weinig variatie, 10 veel variatie)
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid)

1.2. Buitenruimtes (rang 1 tot 10) (**Geïntegreerde natuur/gemengd gebruik**)

- **De behoefte aan groene ruimtes in de straat**
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte)
- **De behoefte aan buitenruimte voor sociale interacties**
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties)
- **Ruimtes waar kinderen luidruchtig kunnen spelen**
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen)

- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
  (1 helemaal geen behoefte, 10 zeer grote behoefte)

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Overdekte paden tussen gebouwen (van de school) en de buurt**
  (1 helemaal niet overdekt, 10 zeer overdekt)
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden)
- **Loop- en fietsmogelijkheden naar de buurtschool**
  (1 helemaal geen opties, 10 veel opties)
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
  (1 helemaal geen autonome beweging, 10 veel autonome beweging)

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
  (1 helemaal geen stille plekken, 10 veel stille plekken)
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen**
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen**
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor jeugddeelnemers uit (Ziaesaeidi en Cushing, 2019) met de reikwijdte van Sociale Integratie te allen tijde.

Appendix 2- Transcript of the Interviews in English and Dutch (in italic)

Person A

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

I have given them a 7. I think they are big enough to live in, it is so small that it is a chicken coop or a student room. but they are also not the grandest houses I have seen.

Ik heb een 7 gegeven, ik denk dat ze groot genoeg zijn om in te wonen, het is danig klein dat het een kippenhok is of een studentenkamer is. maar het zijn ook niet het meest groote huizen die ik heb gezien.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

They are all a square block building, I wouldn't really want to live in it myself. By itself practical.

Ze zijn allemaal een vierkante blokbouw, ik zou het zelf niet echt in willen wonen. Zelf praktisch.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

All the same, 6 and a half.

Allemaal hetzelfde, 6 en half.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

It is a city of course so there are more people walking than a normal village. And since that it is all houses on top of each other I think there is a high density so I gave an 8 for it.

Het is een stad natuurlijk dus er lopen meer mensen dan een normale dorp. En aangezien dat het allemaal woningen boven elkaar zijn denk ik dat er een grote dichtheid is dus ik heb een 8 voor gegeven.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

I entered a 5 because you do have just a few bits of grass or trees, there is definitely some of greenery, it could maybe be a bit better but there is limited space and you have to think very practically what can be achieved.

Ik heb een 5 ingevuld omdat je hebt wel gewoon een paar stukjes gras of bomen hebt, er is zeker wel wat van groen, het zou misschien wat beter kunnen maar er is beperkte ruimte en je moet heel praktisch denken wat er te bereiken is.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

A 4 because I think further up in the neighborhood there is already a pub, a cafeteria, no because there is also a park so it is not really necessary I think.

Een 4 want volgens mij zitten er verder op in de wijk al een kroegje, een cafetaria, nee want er zit ook een parkje dus het is niet echt nodig denk ik.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

No, there is a very big playground near this school here near the Plus, I gave it a 7 and I think there is quite a lot of space for children.

Nee er zit bij deze school hier een heel grote speeltuin vlak bij de Plus, ik heb daar een 7 voor gegeven en ik denk dat er wel aardig veel ruimte is voor kinderen.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

A 6 for completed maybe a bench or so somewhere in the street would be useful to sit on it

Een 6 voor ingevuld misschien een bankje of zo ergens in de straat handig zou zijn om erop te zitten

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

I don't think so, but if it rains you will get wet.

Volgens mij niet, maar als het regent word je wel nat.

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

Yes the signs are reasonably clear.

Ja, de borden zijn redelijk duidelijk.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

On both sides of the road there is a cycle path and a pavement, I think it's an 8. (Do you cycle to school?) Yes but from the other side I come from a village. 20 minutes. Bike lane is just super easy

Aan beide kanten van de weg is er een fietspad en een stoep, ik vind het een 8. (Fiets jij naar school) Ja maar dan wel van de andere kant ik kom uit een dorp. 20 minuutjes. Fietspad is gewoon super makkelijk

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

2 completed there were a lot of cars parked but a lot of cars drove by and that for in town might be a bit low but I understand you want a car close to your home but it could be less.

2 ingevuld er stonden heel veel auto's geparkeerd maar er rijden veel auto's langs en dat voor in de stad zou misschien wat laag kunnen zijn maar ik snap dat je auto dicht bij je huis wilt maar het kan wel minder zijn.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

I think that's fairly disappointing so I filled in a 4 I couldn't see them very quickly so just streets with houses around them I didn't really go further into the side streets so maybe that's where it's at I know there's the occasional full chord (court) or something but I think it's fairly not that bad.

Ik denk dat dat redelijk tegenvalt dus ik heb een 4 ingevuld ik kon ze niet heel snel zien dus gewoon straten met huizen omheen ik heb niet echt verder de zijstraten ingegegaan dus misschien dat het daar zit ik weet dat er af en toe dat er volle koortje (court) zit of zo maar ik denk dat het redelijk meevalt

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

I have filled in a 4 there because I think public transport in the city center is very important especially if you live outside the city then your transport should actually improve.

Ik heb daar een 4 ingevuld omdat ik denk dat openbaar vervoer in de binnenstad heel belangrijk is helemaal als je buiten de stad woont dan moet je vervoer juist verbeteren.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

Maybe be renewed once but it is present there are enough pavements, bike lanes so it is not necessarily needed.

Misschien een keer vernieuwd worden maar het is wel aanwezig er zijn genoeg stoepen, fietspaden dus het is niet percé nodig.

Person B

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

I don't know, I no opinion there whether they are too big or too small. A 7

Ik weet het niet, ik daar geen mening over of ze te groot of te klein zijn. Een 7.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

I don't know if those buildings don't look so cheerful but there are some trees and such and that makes it more attractive.

Ik weet het niet die gebouwen zien niet zo vrolijk uit maar er is wel wat bomen en zo en dat maakt het meer aantrekkelijk.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

There is no real variety all about as high.

Er is niet echt variété allemaal ongeveer net zo hoog.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

I do think there is a lot of density because it's all these piles of houses on top of each other, so that does create a lot of density. A lot of cars as well. (Would you like a lower density?) I don't know exactly, I think it's very hard to make it different.

Ik denk wel dat er een grote dichtheid is omdat het allemaal van die stapel woningen boven op elkaar is, dus dat zorgt wel voor een grote dichtheid. Heel veel auto's ook. (Zou je een lager dichtheid willen hebben?) Dat weet ik niet precies, ik denk dat het heel moeilijk anders te maken is.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

I think there are a lot of houses though, they have some trees here and there but not necessarily a park or anything. I gave it a 6 and a half.

Ik denk dat er wel heel veel huizen zijn, ze hebben wat bomen hier en daar maar niet perse een park of zo. Ik gaf het een 6 en een half.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

There are some cafés and cafeterias and such for the rest there is not much to speak of anywhere.

Er zijn wel wat cafés en cafetaria's en zo voor de rest is er niet zoveel om ergens om te spreken.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

That's too little though there is a school with a playground but for the rest there are just autos and highways and houses mostly.

Dat is wel te weinig, er is wel een school met een speeltuin maar voor de rest zijn er gewoon auto's en autowegen en huizen vooral.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

I don't think there are enough, you might need that. (Would you make use of it?) I think so.

Ik denk dat er niet genoeg zijn, dat zou je wel behoefte aan kunnen hebben. (Zou je gebruik van maken) Ik denk het wel.

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

Yep

Jawel

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

Yep, I think so it's very clear if you have a little sense of direction then you'll get there.

Jawel, ik denk het wel het is heel duidelijk als je een beetje richtingsgevoel heb dan kom je er wel uit.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

Yes, there are lots of bike lanes and pavements. (Do you cycle to school or walk?) Bike (How long does it take?) 10 minutes or so. (So you find it quite easy to cycle to school) Yes.

Ja, er zijn heel veel fietspaden en stoepen. (Fiets jij naar school of loop je?) Fiets (Hoe lang duurt dat?) 10 minuten of zo. (Dus je vindt het best makkelijk om naar school te fietsen) Ja.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

There are lots of autos and buses, though, lots of traffic.

Er zijn wel veel auto's en bussen, wel veel verkeer.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

I don't really think so. There aren't really any parks or anything, you just have that playground and the school itself. Other than that, I haven't seen anything.

Denk ik niet echt. Er zijn niet echt parken of zo, je hebt alleen die speeltuin en de school zelf. Verder heb ik niks gezien.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

I don't think too much. I think some people use that bus to go to school. (Do you use the bus?) No I don't, if people live further away then yes.

Ik denk niet te veel. Ik denk dat sommige mensen gebruikmaken van die bus om naar school te gaan. (Gebruik jij de bus?) Nee ik niet, als mensen verder weg wonen dan wel.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

I think there is enough, you have pavements and so on.

Ik denk dat er genoeg is, je hebt stoepen en zo.

Person C

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

I had an 8 there because there were not very many but they had a school and shops and so on. So I thought it was good enough.

Ik had daar een 8 omdat er waren niet heel veel maar ze hadden wel een school en winkels en zo. Dus ik vond het wel goed genoeg.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

It was a bit boring, there wasn't that much green so I filled in a 6.

Het was een beetje saai, er was niet zo veel groen dus ik heb een 6 ingevuld.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

Yes, in terms of height, there was little variety because they were all the same height. Because they are just residential houses so usually they are the same height.

Ja, qua hoogte was er wel weinig variété omdat ze allemaal dezelfde hoogte hadden. Omdat het gewoon woonhuizen zijn dus meestal zijn ze dezelfde hoogte.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

I think there is a pretty high density because I saw a lot of cars and bikes and stuff, so that means there are quite a lot of people living here. (Would you like that to have a high density?) I think it's nice for children to have other children living nearby but it's not so practical with how big those houses are.

Ik denk dat er wel een aardig hoge dichtheid is, omdat ik heel veel auto's en fietsen en zo zag, dus dat betekent dat er best veel mensen hier wonen. (Zou je dat leuk vinden om een hoge dichtheid te hebben?) Ik denk dat het voor kinderen leuk is dat er andere kinderen in de buurt wonen maar het is niet zo praktisch met hoe groot die huizen zijn.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

I think it would be convenient that there are now very many houses and a lot of people. It would be nice for people to be able to walk in a park. (What grade did you give it?) I gave it a 7. (What are you going to do with those green spaces?) Yes you can do different things so make a park where people can sit or where people can play football.

Ik denk het wel, het zou wel handig zijn dat er nu heel huizen staan en heel veel mensen zou het fijn zijn dat mensen in een park kunnen lopen. (Wat voor cijfer heb je daarvoor gegeven) Ik heb een 7 gegeven. (Wat ga je met die groene ruimtes doen?) Ja je kan verschillende dingen doen dus een park maken waar mensen kunnen zitten of waar mensen voetbal kunnen spelen.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

Yes I entered a 5.5 there because there was a football field nearby and schoolyard where you can play but it wasn't really much so that's why I gave a 5.5 because they need it.

Ja ik heb daar een 5.5 ingevuld omdat er was wel een voetbalveld in de buurt en schoolplein waar je kan spelen maar het was niet echt heel veel dus daarom heb ik een 5.5 gegeven omdat ze hebben het nodig.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

I gave a 4 there because they actually only have that school nearby where they can do that and not that much else. (Would you add another playground?) Yes, it would be handy.

Ik heb daar een 4 gegeven omdat ze hebben eigenlijk alleen die school in de buurt waar ze dat kunnen doen en voor de rest niet zo veel. (Zou je nog een speelplaats er bij doen?) Ja zou wel handig zijn.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

Yes I think so it would be helpful especially with the bonding you can do that with your children if you have a park you can go to.

Ja ik denk het wel het zou wel handig zijn vooral met de band die je met je kinderen kan opbouwen als je een park hebt waar je heen kan.

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

I don't know. I filled in a 2 myself but I don't think there are that many covered paths. It's not too bad, there is very little grass on the paths.

Ik weet niet. Ik heb zelf een 2 ingevuld maar volgens mij zijn er niet zo veel bedekte paden. Het valt wel mee, er is weinig gras te vinden op de paden.

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

In itself, they are clear especially with the closed roads. I gave it an 8.

Opzich zijn die wel duidelijk vooral met de afgesloten wegen. Ik heb daar een 8 voorgegeven.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

Yes, those roads are very clearly marked, so it is very easy for children. (Do you cycle to school?) Yes I cycle to school, it takes about 10 minutes.

Ja, die wegen zijn heel duidelijk aangegeven, dus het is heel makkelijk voor kinderen. (Fiets jij naar school?) Ja, ik fiets wel naar school, het duurt ongeveer 10 minuten.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

I do think it can be reduced because children sometimes want to cross very quickly so it can be very dangerous if they walk without their parents so it can be reduced.

Ik vind wel dat het wel verminderd kan worden omdat kinderen willen soms heel snel oversteken dus het kan heel gevaarlijk zijn als ze zonder hun ouders lopen dus het kan wel verminderd worden.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

Yes but there is a lot of traffic so it can be dangerous for small children but for older children it is just safe.

Ja maar er is wel veel verkeer dus het kan wel gevaarlijk zijn voor kleine kinderen maar voor oudere kinderen is het gewoon veilig.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

More is useful in itself because if children live very far away then they can very easily go to school for the OV so I don't think it should be reduced.

Meer is opzich wel handig omdat als kinderen heel ver weg wonen dan kunnen ze heel makkelijk voor de OV naar school te gaan dus ik vind niet dat het verminderd moet worden.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

I thought it was a useful thing to do because then people can do physical things with each other and they don't have to sit inside all day.

Ik dacht dat het wel handig vond om te doen want dan kunnen mensen fysieke dingen met elkaar doen en hoeven zij niet de hele dag binnen te zitten.

Person D

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

I thought it was fine so I gave it a 5. Not very big, not very small.

Ik vond het wel prima dus ik heb een 5 gegeven. Niet heel groot niet heel klein.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

I thought it was a 7 as there was some greenery, a little park, some shops, a cafeteria so I thought it was enough. (Were the buildings attractive?) Those were a bit dull and grayish.

Ik vond het wel een 7 aangezien er wat groenvoorziening was een parkje, wat winkels, een cafetaria dus ik vond het wel genoeg. (Waren de gebouwen aantrekkelijk?) Die waren een beetje saai en grijzig.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

I gave a 2 there because it was basically the same building after building after building so in terms of height variety, there wasn't that much.

Ik heb daar een 2 gegeven want het was eigenlijk hetzelfde gebouw na gebouw na gebouw dus qua hoogte variété was er niet zo veel.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

On the street it does get crowded with cyclists and so the houses are close together so that's why I think there is a high density. I gave an 8 for that.

Op straat is het wel druk met fietsers en zo de woningen zijn wel dicht bij elkaar dus daarom denk ik dat er een grote dichtheid is. Ik heb daarvoor een 8 gegeven.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

I had given a 5 there because I think it is important but it is important to have enough houses for people to live in. (Would you use those rooms to play with friends, for example?) Yes definitely.

Ik had daar een 5 gegeven omdat ik denk dat het wel belangrijk is maar het is wel belangrijk om genoeg huizen te hebben waar mensen in kunnen wonen. (Zou je die ruimtes gebruiken om met vrienden te spelen bijvoorbeeld?) Ja zeker.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

I do have a need for that. I had given a 6 now but I think I would put higher now.

Daar heb ik wel een behoefte aan. Ik had nu een 6 gegeven maar ik denk dat ik nu hoger zou zetten.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

I thought it was enough in that street now with schools as well. You also had a few places with parks and so on, so I thought that was enough.

Ik vond het opzich nu in die straat wel genoeg ook met scholen je had ook een paar plekken met parken en zo dus dat vond ik opzich wel genoeg.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

Yes that does seem like a good point to stick to that I do think is important.

Ja dat lijkt me wel een goed punt om zo aan te houden dat vind ik wel belangrijk.

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

No, I did not see those at all. I may have looked wrong but I did not see anything.

Nee, die heb ik totaal niet gezien, ik heb misschien verkeerd gekeken maar ik heb niks gezien.

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

Yes I thought so, also good signs everything was visible, it was not covered by other things.

Ja dat vond ik wel, ook wel goede borden alles was zichtbaar, het werd niet bedekt door andere dingen.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

I do think there are enough options, there are plenty of bike lanes and also plenty of pavement. (How long does it take to cycle to school?) It takes 20-25 minutes to cycle to school. I find it very easy actually it's just follow a path and then you're there.

Ik vind wel dat er genoeg opties zijn, er zijn genoeg fietspaden en ook genoeg stoep. (Hoe lang duurt het om naar school te fietsen?) Het duurt 20-25 minuten om naar school te fietsen. Ik vind het heel makkelijk eigenlijk is het gewoon een pad volgen en dan ben je er.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

That's not so bad in itself, but I do think it's important that it's congested and that it's still clear and that you can see traffic coming and that it doesn't cause blockages, so I do think it's important to avoid that.

Dat valt opzich wel mee maar ik vind het wel belangrijk dat het overvol staat en dat nog steeds overzichtelijk is en dat je wel verkeer aan kan zien komen en dat het niet voor ontstoppingen zorgt dus ik vind wel belangrijk dat dat wordt vermijd.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

Still, it's a bit too many cars so you can't just cross the street or anything.

Het is alsnog wel een beetje te veel auto's dus je kan niet zomaar de straat opsteken of zo.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

I gave a 5 there, I think it's okay now. I do think OV is important to improve accessibility. (Do you use the OV?) Yes very occasionally with bad weather.

Ik heb daar een 5 gegeven, ik denk dat het nu wel goed is. Ik denk dat OV wel belangrijk is om bereikbaarheid te verbeteren. (Gebruik jij de OV?) Ja, heel af en toe met slecht weer.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

Yes I think that is very good, promoting human health anyway.

Ja dat vind ik heel goed, sowieso de gezondheid van de mens te bevorderen.

Person E

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

No, I think it's okay. For a city, they are not that big.

Nee, ik denk dat het wel goed is. Voor een stad zijn ze niet zo groot.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

A little dated perhaps, but that makes it quite unique. For some they are nice, for others a bit less so.

Een beetje gedateerd misschien, maar dat maakt het best uniek. Voor sommige zijn ze wel mooi, voor andere wat minder.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

Not that much variety, pretty much the same.

Niet zo heel veel variété, ongeveer hetzelfde.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

I think so because there are lots of students and in the neighborhood there are also schools with lots of children. (Do you mind?) No I'm used to it in itself, you live in the city center so that means there must be more people.

Ik denk het wel want er zijn heel veel studenten en in de buurt zijn er ook scholen dus veel kinderen. (vind je dat erg?) Nee ik ben er opzich aan gewend, je woont in de binnenstad dus dat betekent dat er meer mensen moet zijn.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

It would be nice if there was a bit more greenery but in itself there are some trees now.

Het zou wel mooi zijn als er wat meer groen was maar op zich zijn er nu wel wat bomen.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

A park does but it would be nice to have a playground or other places.

Een parkje wel maar het zou wel leuk zijn om een speeltuin te hebben of andere plekken.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

I haven't seen a playground. (Would you like that?) Yes, it seems nice to have a playground outside school too.

Ik heb geen speeltuin gezien. (Zou je dat leuk vinden?) Het lijkt me wel leuk om buiten school ook een speeltuin te hebben.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

Yes, I think one or two is enough. I think there are also a lot of young people living there so maybe the need for that is a bit smaller.

Ja, ik denk dat een of twee wel genoeg is. Ik denk dat er ook veel jongeren daar wonen dus misschien de behoefte daar aan wat kleiner is.

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

In my opinion, they are not really covered I think.

Volgens mij zijn ze niet echt bedekt denk ik.

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

There were a lot of borders though, if they were working on something it was clear. (So it is clear to know where you are going?) Yes in itself.

Er waren wel veel border, als ze bezig met iets waren dan was het wel duidelijk. (Dus het is duidelijk om te weten waar je heen gaat) Ja opzich wel.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

I think there are plenty of options, bike paths, cars and also pavements. (Do you cycle to school?) Yes it takes around 15 minutes and it is quite easy.

Ik denk dat er genoeg opties zijn, fiets pad, auto en ook stoepen. (Fiets jij naar school) Ja het duurt rond een kwartier en het is best makkelijk.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

Not really, it's not too bad.

Niet echt, het valt wel mee.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

I think there could be a bit more for me but I think it's also fine.

Ik denk dat er wat meer voor mij kan maar ik denk dat het ook wel prima is.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

No, there are enough buses though, don't need less.

Nee, er zijn wel genoeg bussen, hoef niet minder.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

I think so, yes.

Ik denk het wel ja.

Person F

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

Yes, just in the middle. I don't think it's too big or too small, it fits well I think.

Ja, gewoon in het midden. Ik denk niet te groot of te klein, past wel goed denk ik bij elkaar.

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

Not very attractive, a bit dirty, old.

Niet heel aantrekkelijk, een beetje vies, oud.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

No.

Nee.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

Yep, too many maybe not, but there are many. (Would you prefer lower density?) Not really.

Jawel, te veel misschien niet, maar er zijn wel veel. (Zou je het beter vinden om een lager dichtheid te hebben?) Niet percé.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

Yep, I gave an 8 for that.

Jawel, ik heb een 8 daarvoor gegeven.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

A 4.

Een 4.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty space for children)

Yes that does matter. I would have more though.

Ja, dat is wel belangrijk. Ik zou wel meer hebben.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

Yes it could.

Ja, dat zou wel kunnen.

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

Yep.

Jawel.

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

Yes I think so.

Ja volgens mij wel.

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

Many options. (Do you cycle to school?) Yes, it takes half an hour. (Is it easy to cycle there?) Yes.

Veel opties. (Fiets jij naar school?) Ja, dat duurt een half uurtje. (Is het makkelijk om daar heen te fietsen) Jawel.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

Falls because so many people live here but I don't mind because most people just have a car.

Valt mee omdat er zo veel mensen hier wonen maar ik vind het niet erg omdat de meeste mensen hebben gewoon een auto.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

In my opinion, I think so.

Volgens mij wel denk ik.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

Falls but not really directly for the school. Maybe it could be a bit more. (Do you use public transport?) No. (Not even when the weather is bad?) No, that's actually impossible because then you have to take the bus for an hour or go short by bus and then walk for 30 minutes.

Valt wel mee maar niet echt direct voor de school. Misschien dat het wel wat meer kan. (Gebruik jij de OV?) Nee (Ook niet als het slecht weer is?) Nee dat is eigenlijk onmogelijk omdat dan moet je een uur lang met de bus of ga je kort met de bus en dan 30 minuten lopen zeg maar.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

Yes it could.

Ja, dat zou wel kunnen.

Person G

1. Questions to participants

1.1. Physical Appearance and Visual Representation (rank 1 to 10) (**Mixed Use**)

- **Scale of neighboring buildings for children**
  (too big (1); too small (10) and how do you feel about it?)

7. A lot of buildings are close together

- **Plantings and attractive architecture for liveability**
  (1 not attractive, 10 very attractive)

There are not enough.

- **Variety of the neighborhood facilities for comfort and intimacy**
  (1 low variety, 10 high variety)

There are enough buildings.

- **High-density neighborhood**
  (1 very low density, 10 very high density)

There are too many homes.

1.2. Outside spaces (rank 1 to 10) (**Integrated Nature/Mixed Use**)

- **The need for green spaces in the street and what green spaces are?**
  (1 no need for green space, 10 very high need for green space)

There are enough spaces.

- **The need for exterior space for social interactions**
  (1 very low need for social interactions, 10 very high need for social interactions)

There are cafés/bars and places to sit outside in general.

- **Spaces where children can play noisily**
  (1 no space for children, 10 plenty of space for children)

There are not enough playing areas.

- **The need for public spaces which the neighborhood residents can use along with children to increase the sense of sociability**
  (1 no need at all, 10 very high need)

-

1.3. Pedestrian and Vehicles Paths (rank 1 to 10) (**Circulation alternatives**)

- **Covered paths between buildings (of the school) and neighborhood**
  (1 not covered at all, 10 highly covered)

Covered? (misunderstood the concept of covered)

- **The visible route signs for internal wayfinding and commuting**
  (1 non visible route sign, 10 very visible route signs)

There are clear signs

- **Walking and biking options to the neighborhood-school**
  (1 no options at all, 10 plenty of options)

Bike and walking paths are good.

- **Avoiding entering cars and heavy traffic along paths that lead to the school which decrease the autonomous movement of children in the neighborhood**
  (1 no autonomous movement at all, 10 plenty of autonomous movement)

There is enough space in between.

1.4. Health and Safety (rank 1 to 10) (**Circulation alternatives**)

- **Safe and quiet places for children inside and outside of the neighborhood-school and within the neighborhood**
  (1 no quiet places at all, 10 plenty of quiet places)

There is a lot of traffic.

- **The need to reduce the use of transit systems around the neighborhood-school**
  (1 no need to reduce transit at all, 10 high need to reduce transit)

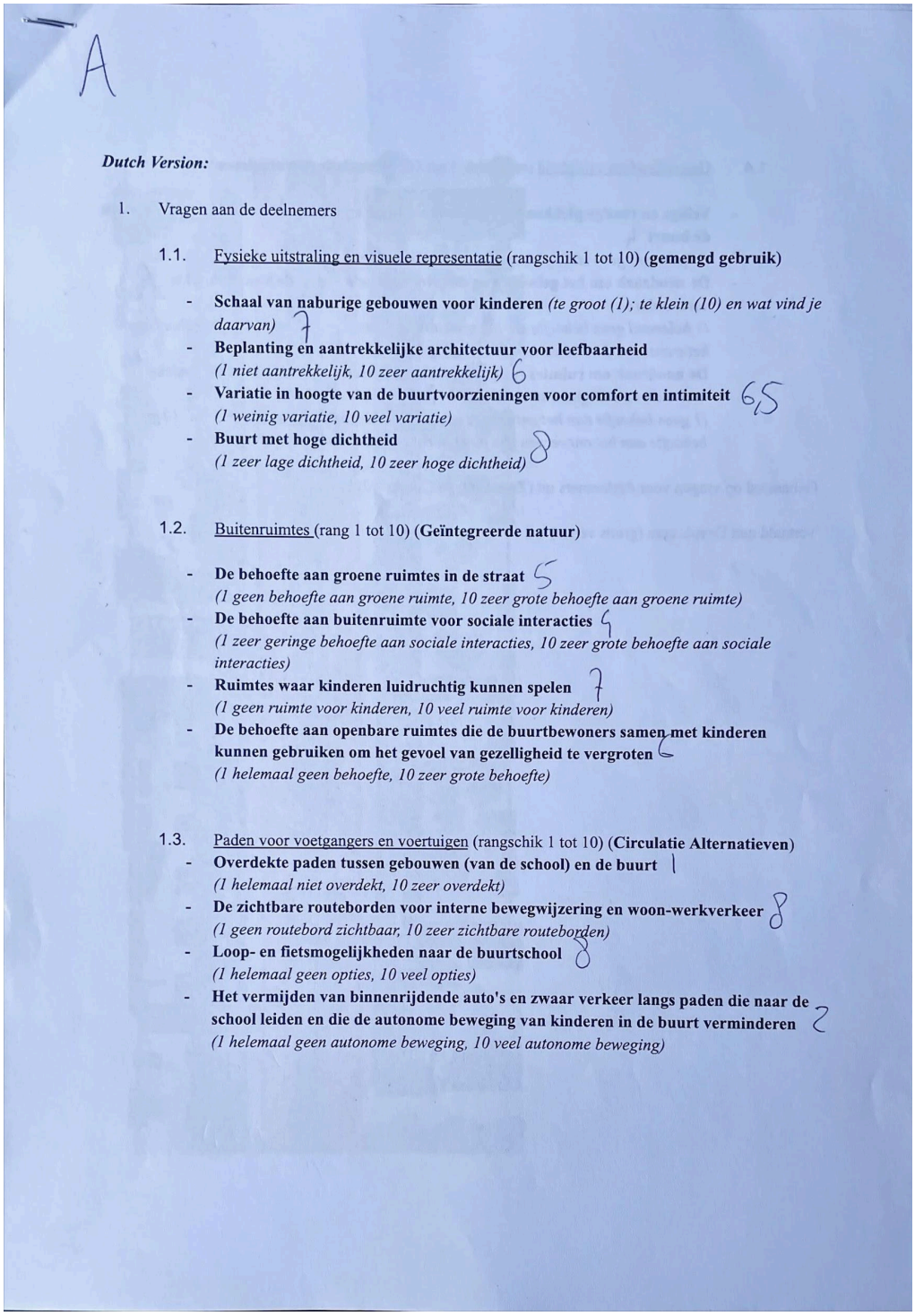
There is no need for buses.

- **The need to design spaces for biking and walking to increase physical activity and safety**
  (1 no need to design places for biking and walking, 10 high need to design for biking and walking)

There is enough space for recreation.

Appendix 3- Grading from the participants based on the questions and statements

Participant A



A

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) **(gemengd gebruik)**

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)* 7
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk) 6
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit** 6,5
  (1 weinig variatie, 10 veel variatie)
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid) 8

1.2. Buitenruimtes (rang 1 tot 10) **(Geïntegreerde natuur)**

- **De behoefte aan groene ruimtes in de straat** 5
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte)
- **De behoefte aan buitenruimte voor sociale interacties** 4
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties)
- **Ruimtes waar kinderen luidruchtig kunnen spelen** 7
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen)
- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten** 6
  (1 helemaal geen behoefte, 10 zeer grote behoefte)

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) **(Circulatie Alternatieven)**

- **Overdekte paden tussen gebouwen (van de school) en de buurt** 1
  (1 helemaal niet overdekt, 10 zeer overdekt)
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer** 8
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden)
- **Loop- en fietsmogelijkheden naar de buurtschool** 8
  (1 helemaal geen opties, 10 veel opties)
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen** 2
  (1 helemaal geen autonome beweging, 10 veel autonome beweging)

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt** 4
  (1 helemaal geen stille plekken, 10 veel stille plekken)
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen** 5
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen** 3
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

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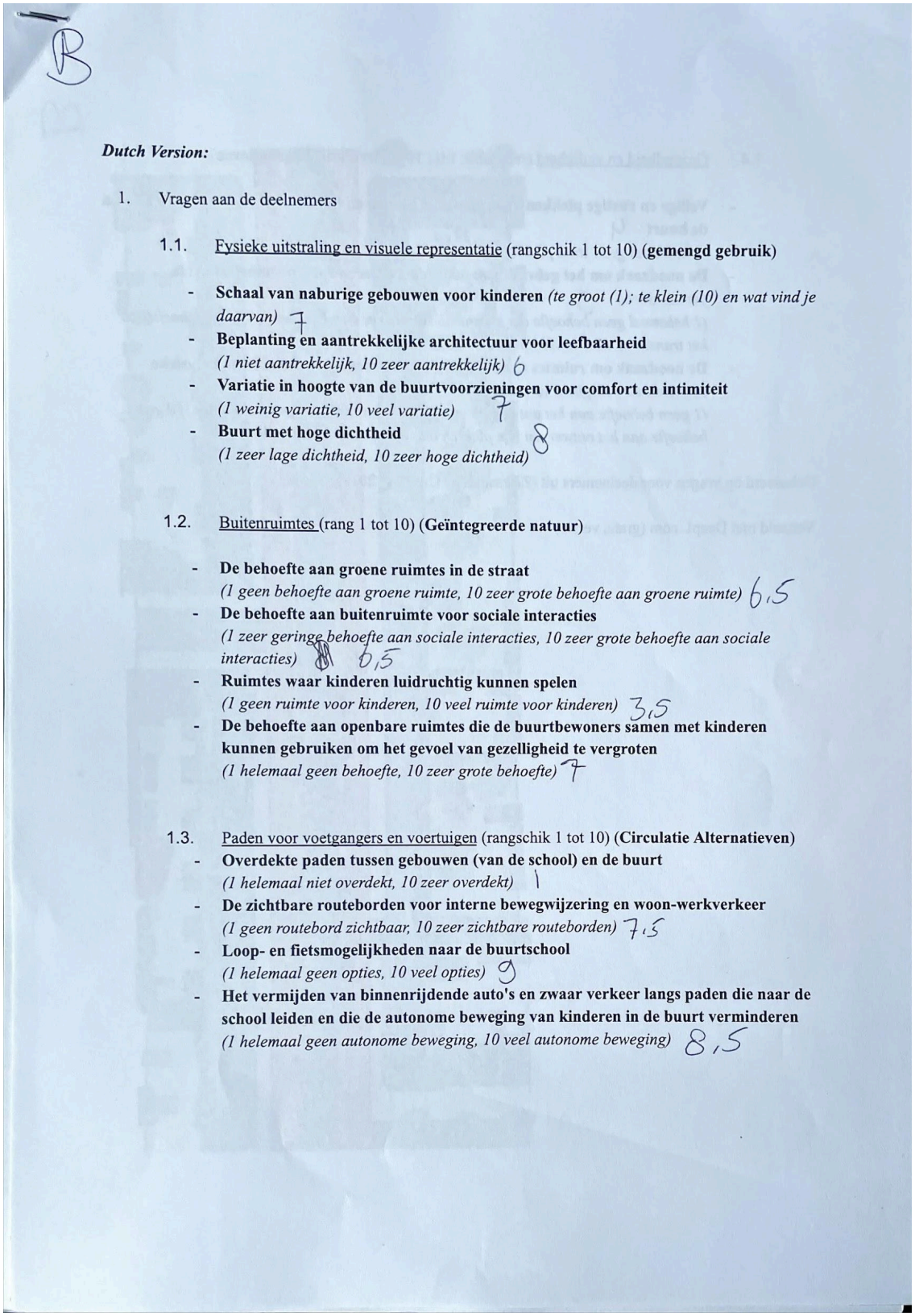
Participant B



B

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) (**gemengd gebruik**)

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)* 7
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk) 6
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
  (1 weinig variatie, 10 veel variatie) 7
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid) 8

1.2. Buitenruimtes (rang 1 tot 10) (**Geïntegreerde natuur**)

- **De behoefte aan groene ruimtes in de straat**
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte) 6,5
- **De behoefte aan buitenruimte voor sociale interacties**
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties) 6,5
- **Ruimtes waar kinderen luidruchtig kunnen spelen**
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen) 3,5
- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
  (1 helemaal geen behoefte, 10 zeer grote behoefte) 7

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Overdekte paden tussen gebouwen (van de school) en de buurt**
  (1 helemaal niet overdekt, 10 zeer overdekt) 1
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden) 7,5
- **Loop- en fietsmogelijkheden naar de buurtschool**
  (1 helemaal geen opties, 10 veel opties) 9
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
  (1 helemaal geen autonome beweging, 10 veel autonome beweging) 8,5

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt** 4
  (1 helemaal geen stille plekken, 10 veel stille plekken)
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen** 3
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen** 5
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

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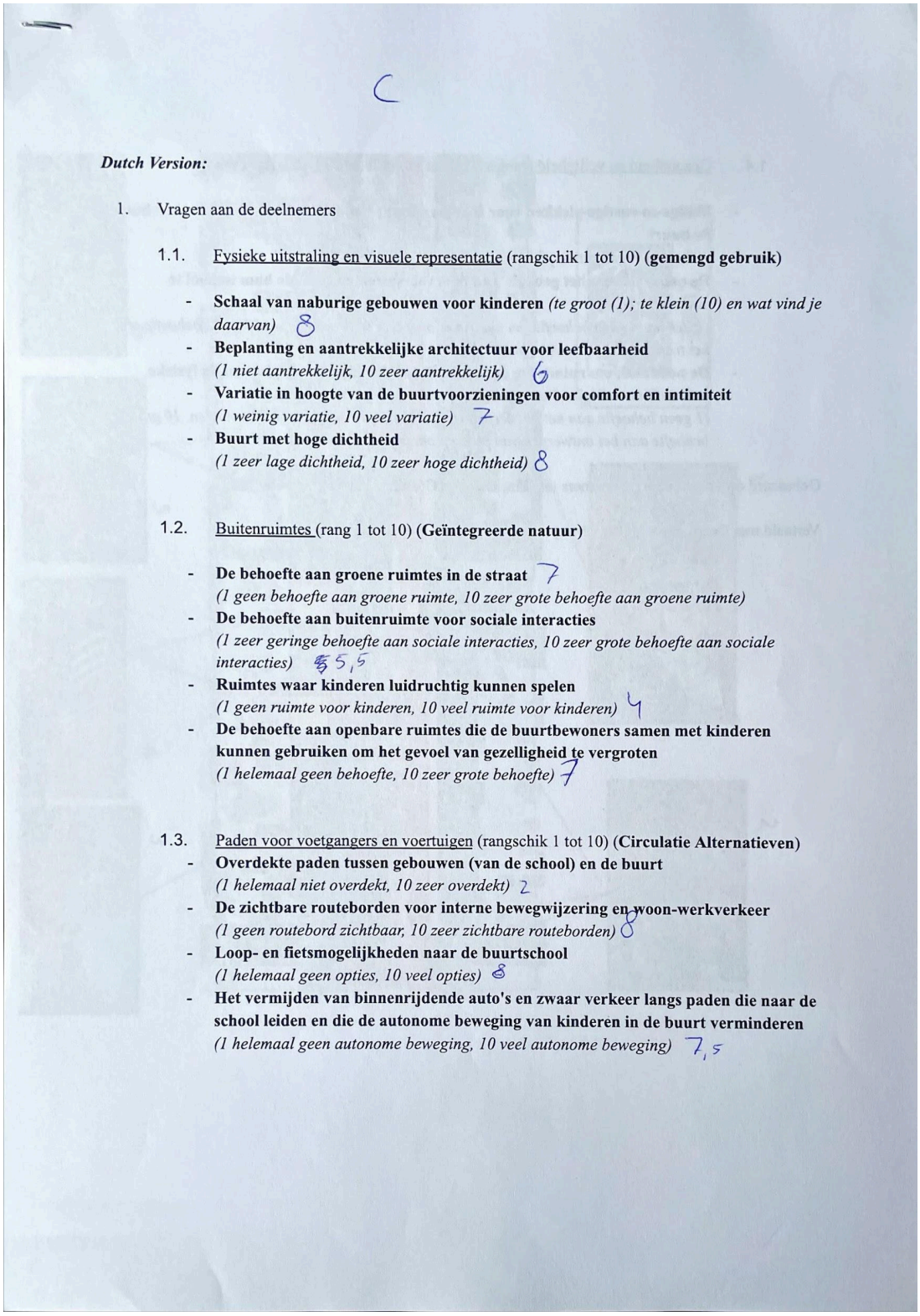
Participant C



C

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) **(gemengd gebruik)**

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)* 8
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk) 6
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
  (1 weinig variatie, 10 veel variatie) 7
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid) 8

1.2. Buitenruimtes (rang 1 tot 10) **(Geïntegreerde natuur)**

- **De behoefte aan groene ruimtes in de straat** 7
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte)
- **De behoefte aan buitenruimte voor sociale interacties**
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties) 5,5
- **Ruimtes waar kinderen luidruchtig kunnen spelen**
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen) 4
- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
  (1 helemaal geen behoefte, 10 zeer grote behoefte) 7

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) **(Circulatie Alternatieven)**

- **Overdekte paden tussen gebouwen (van de school) en de buurt**
  (1 helemaal niet overdekt, 10 zeer overdekt) 2
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden) 8
- **Loop- en fietsmogelijkheden naar de buurtschool**
  (1 helemaal geen opties, 10 veel opties) 8
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
  (1 helemaal geen autonome beweging, 10 veel autonome beweging) 7,5

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) **(Circulatie Alternatieven)**

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
  (1 helemaal geen stille plekken, 10 veel stille plekken) 4
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen** 2
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen** 6
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

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Participant D

Persoon D

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) **(gemengd gebruik)**

5 - **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)*

7 - **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
(1 niet aantrekkelijk, 10 zeer aantrekkelijk)

2 - **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
(1 weinig variatie, 10 veel variatie)

8 - **Buurt met hoge dichtheid**
(1 zeer lage dichtheid, 10 zeer hoge dichtheid)

1.2. Buitenruimtes (rang 1 tot 10) **(Geïntegreerde natuur)**

5 - **De behoefte aan groene ruimtes in de straat**
(1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte)

6 - **De behoefte aan buitenruimte voor sociale interacties**
(1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties)

3 - **Ruimtes waar kinderen luidruchtig kunnen spelen**
(1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen)

7 - **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
(1 helemaal geen behoefte, 10 zeer grote behoefte)

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) **(Circulatie Alternatieven)**

1 - **Overdekte paden tussen gebouwen (van de school) en de buurt**
(1 helemaal niet overdekt, 10 zeer overdekt)

9 - **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
(1 geen routebord zichtbaar, 10 zeer zichtbare routeborden)

8 - **Loop- en fietsmogelijkheden naar de buurtschool**
(1 helemaal geen opties, 10 veel opties)

8 - **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
(1 helemaal geen autonome beweging, 10 veel autonome beweging)

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

4 - **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
(1 helemaal geen stille plekken, 10 veel stille plekken)

5 - **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen**
(1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)

7 - **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen**
(1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

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Participant E

Persoon E

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) (**gemengd gebruik**)

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)* 5
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk) 7
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
  (1 weinig variatie, 10 veel variatie) 3
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid) 7

1.2. Buitenruimtes (rang 1 tot 10) (**Geïntegreerde natuur**)

- **De behoefte aan groene ruimtes in de straat**
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte) 4
- **De behoefte aan buitenruimte voor sociale interacties**
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties) 5
- **Ruimtes waar kinderen luidruchtig kunnen spelen**
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen) 2
- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
  (1 helemaal geen behoefte, 10 zeer grote behoefte) 6

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Overdekte paden tussen gebouwen (van de school) en de buurt**
  (1 helemaal niet overdekt, 10 zeer overdekt) 1
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden) 8
- **Loop- en fietsmogelijkheden naar de buurtschool**
  (1 helemaal geen opties, 10 veel opties) 9
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
  (1 helemaal geen autonome beweging, 10 veel autonome beweging) 8

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
  (1 helemaal geen stille plekken, 10 veel stille plekken) 5
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen**
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen) 1
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen**
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen) 7

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

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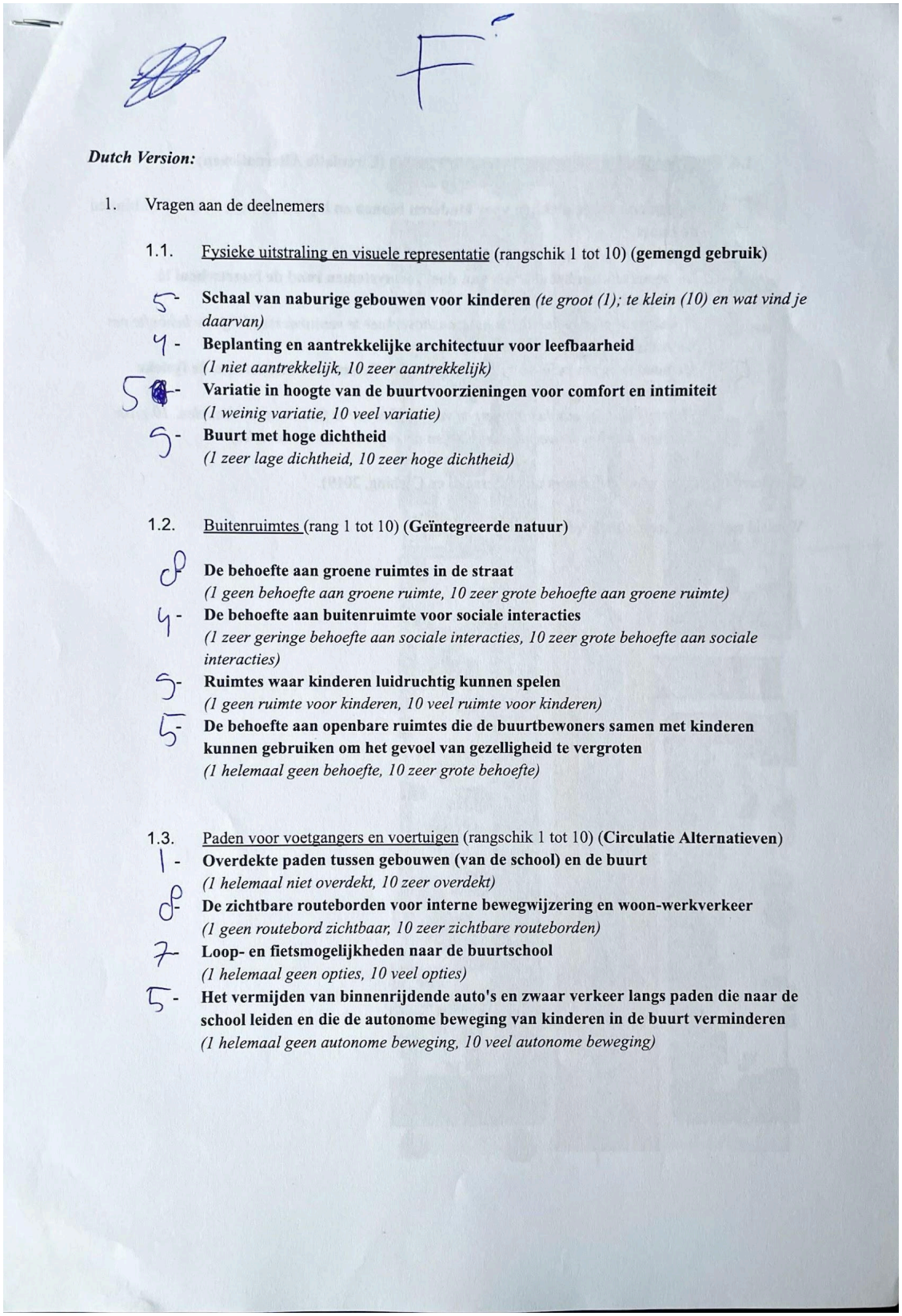
Participant F



F

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) **(gemengd gebruik)**

5- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)*

4- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
(1 niet aantrekkelijk, 10 zeer aantrekkelijk)

5- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
(1 weinig variatie, 10 veel variatie)

5- **Buurt met hoge dichtheid**
(1 zeer lage dichtheid, 10 zeer hoge dichtheid)

1.2. Buitenruimtes (rang 1 tot 10) **(Geïntegreerde natuur)**

8 **De behoefte aan groene ruimtes in de straat**
(1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte)

4- **De behoefte aan buitenruimte voor sociale interacties**
(1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties)

5- **Ruimtes waar kinderen luidruchtig kunnen spelen**
(1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen)

5- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
(1 helemaal geen behoefte, 10 zeer grote behoefte)

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) **(Circulatie Alternatieven)**

1- **Overdekte paden tussen gebouwen (van de school) en de buurt**
(1 helemaal niet overdekt, 10 zeer overdekt)

8- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
(1 geen routebord zichtbaar, 10 zeer zichtbare routeborden)

7- **Loop- en fietsmogelijkheden naar de buurtschool**
(1 helemaal geen opties, 10 veel opties)

5- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
(1 helemaal geen autonome beweging, 10 veel autonome beweging)

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

5 - **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
(1 helemaal geen stille plekken, 10 veel stille plekken)

5 - **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen**
(1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen)

5 - **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen**
(1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen)

Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

Vertaald met DeepL.com (gratis versie)

Participant G

Persoon G

Dutch Version:

1. Vragen aan de deelnemers

1.1. Fysieke uitstraling en visuele representatie (rangschik 1 tot 10) **(gemengd gebruik)**

- **Schaal van naburige gebouwen voor kinderen** *(te groot (1); te klein (10) en wat vind je daarvan)* 7, redelijk veel gebouwen die dicht op elkaar zijn
- **Beplanting en aantrekkelijke architectuur voor leefbaarheid**
  (1 niet aantrekkelijk, 10 zeer aantrekkelijk) ~~6~~ 5 te weinig
- **Variatie in hoogte van de buurtvoorzieningen voor comfort en intimiteit**
  (1 weinig variatie, 10 veel variatie) 7 Genoeg gebouwen
- **Buurt met hoge dichtheid**
  (1 zeer lage dichtheid, 10 zeer hoge dichtheid) Te veel huizen
  9

1.2. Buitenruimtes (rang 1 tot 10) **(Geïntegreerde natuur)**

- **De behoefte aan groene ruimtes in de straat** Genoeg
  (1 geen behoefte aan groene ruimte, 10 zeer grote behoefte aan groene ruimte) 7
- **De behoefte aan buitenruimte voor sociale interacties** Veel & terrassen
  (1 zeer geringe behoefte aan sociale interacties, 10 zeer grote behoefte aan sociale interacties) 5
- **Ruimtes waar kinderen luidruchtig kunnen spelen**
  (1 geen ruimte voor kinderen, 10 veel ruimte voor kinderen) 3 weinig speeltuinen
- **De behoefte aan openbare ruimtes die de buurtbewoners samen met kinderen kunnen gebruiken om het gevoel van gezelligheid te vergroten**
  (1 helemaal geen behoefte, 10 zeer grote behoefte) 8 —

1.3. Paden voor voetgangers en voertuigen (rangschik 1 tot 10) **(Circulatie Alternatieven)**

- **Overdekte paden tussen gebouwen (van de school) en de buurt** 1 7 overdekt?
  (1 helemaal niet overdekt, 10 zeer overdekt) -
- **De zichtbare routeborden voor interne bewegwijzering en woon-werkverkeer**
  (1 geen routebord zichtbaar, 10 zeer zichtbare routeborden) duidelijke 8 borden
- **Loop- en fietsmogelijkheden naar de buurtschool**
  (1 helemaal geen opties, 10 veel opties) 8 Fietspad en stoep goed
- **Het vermijden van binnenrijdende auto's en zwaar verkeer langs paden die naar de school leiden en die de autonome beweging van kinderen in de buurt verminderen**
  (1 helemaal geen autonome beweging, 10 veel autonome beweging) 6 Ruimte ertussen

1.4. Gezondheid en veiligheid (rangschik 1 tot 10) (**Circulatie Alternatieven**)

- **Veilige en rustige plekken voor kinderen binnen en buiten de buurt-school en binnen de buurt**
  (1 helemaal geen stille plekken, 10 veel stille plekken) 4 Veel verkeer
- **De noodzaak om het gebruik van doorvoersystemen rond de buurtschool te verminderen**
  (1 helemaal geen behoefte om het transitoverkeer te verminderen, 10 grote behoefte om het transitoverkeer te verminderen) geen bussen nodig 1
- **De noodzaak om ruimtes te ontwerpen voor fietsen en wandelen om de fysieke activiteit en veiligheid te verhogen**
  (1 geen behoefte aan het ontwerpen van plekken om te fietsen en te wandelen, 10 grote behoefte aan het ontwerpen van plekken om te fietsen en te wandelen) 5

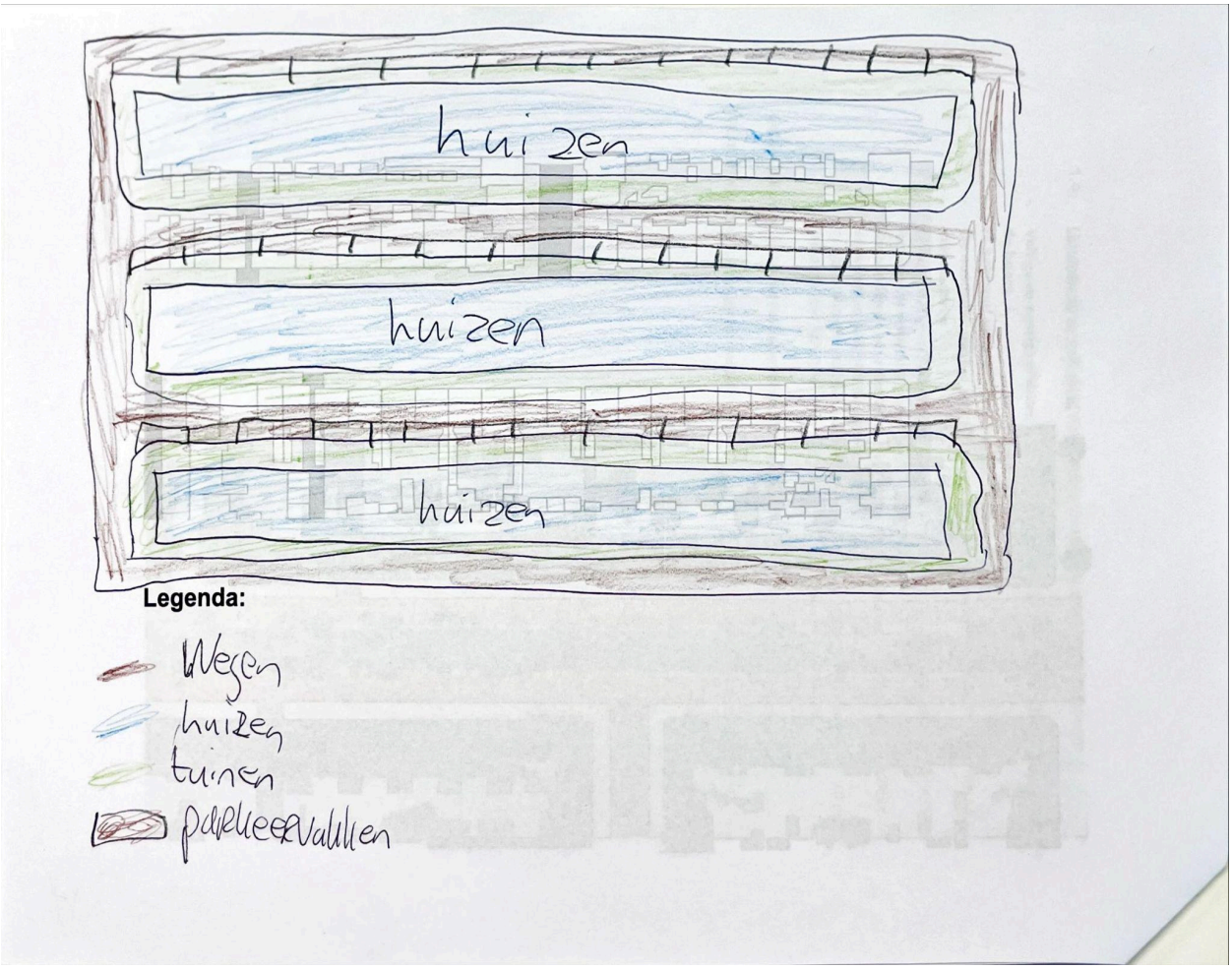
Gebaseerd op vragen voor deelnemers uit (Ziaesaeidi en Cushing, 2019).

Vertaald met DeepL.com (gratis versie)

Al genoeg ruimte voor recreatie

Appendix 4- Sketches of the participants

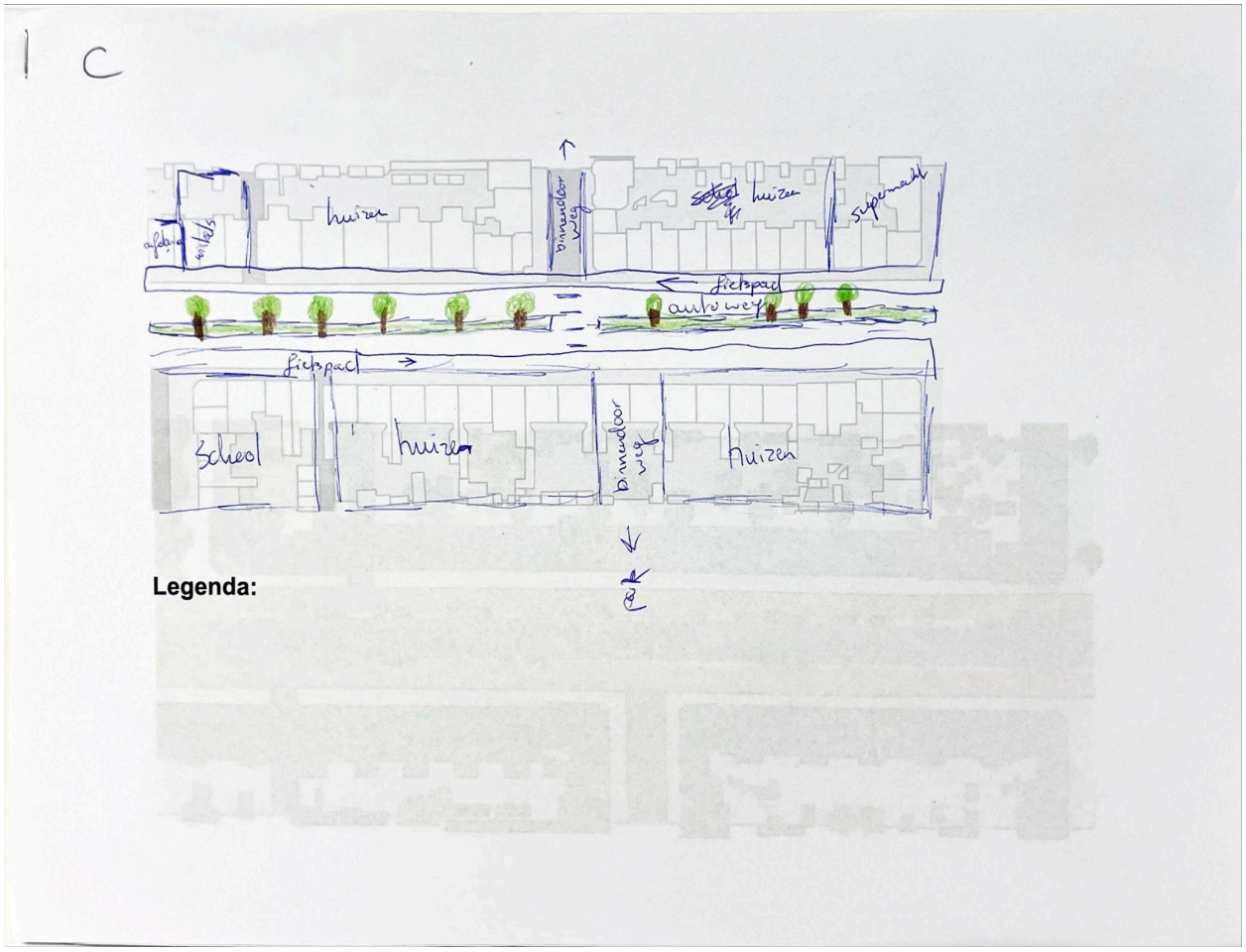
Person A



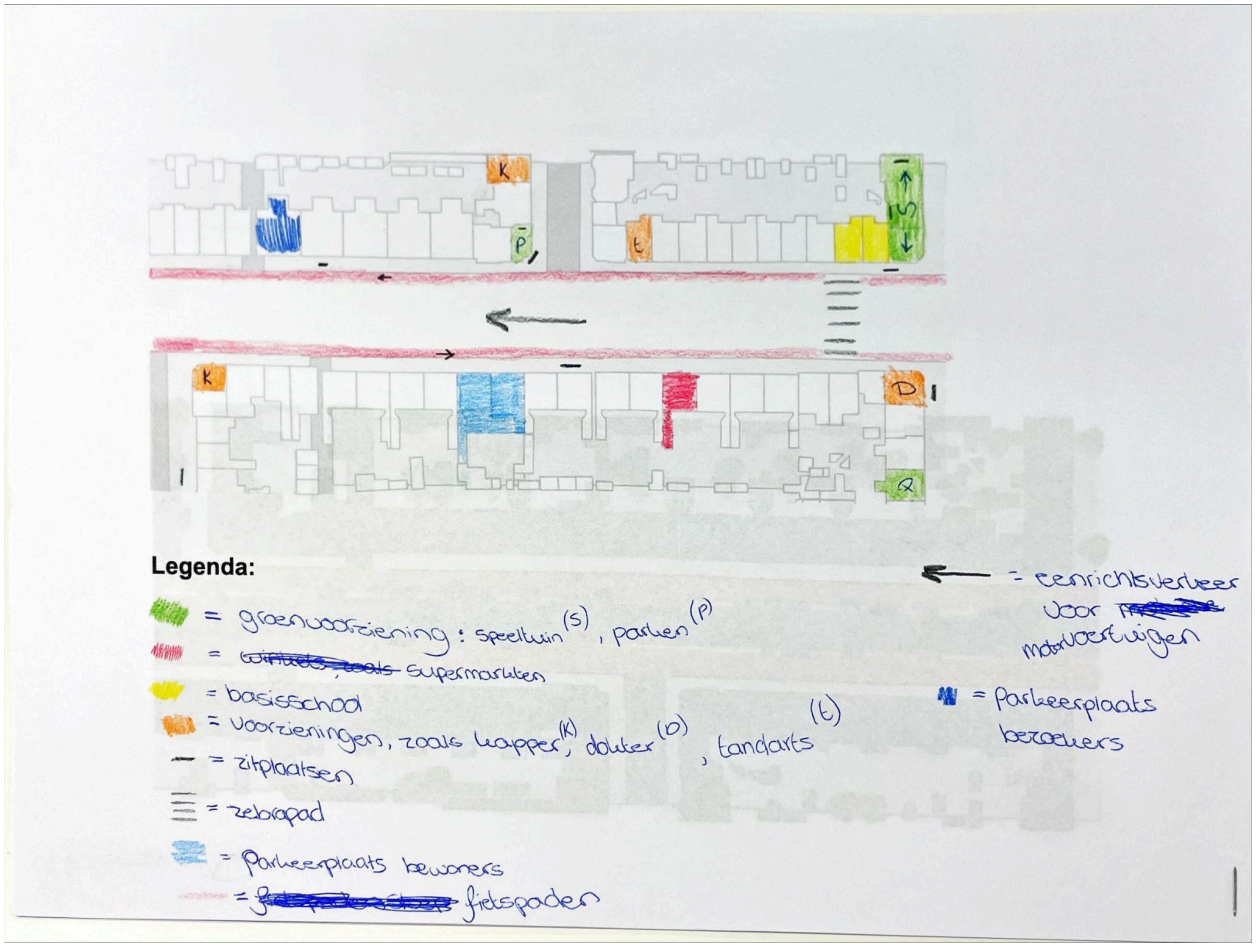
Person B


huizen
School met speelplaats
huizen
huizen
Water
huizen
huizen
Restaurant
Park met voorzieningen
huizen
Bruggen
Legenda:
= Brug
= Water
= Huizen
= Park met voorzieningen
= School met speelplaatsen
Iedereen moet een Boot bezitten om te kunnen verplaatsen of je gaat over de Brug

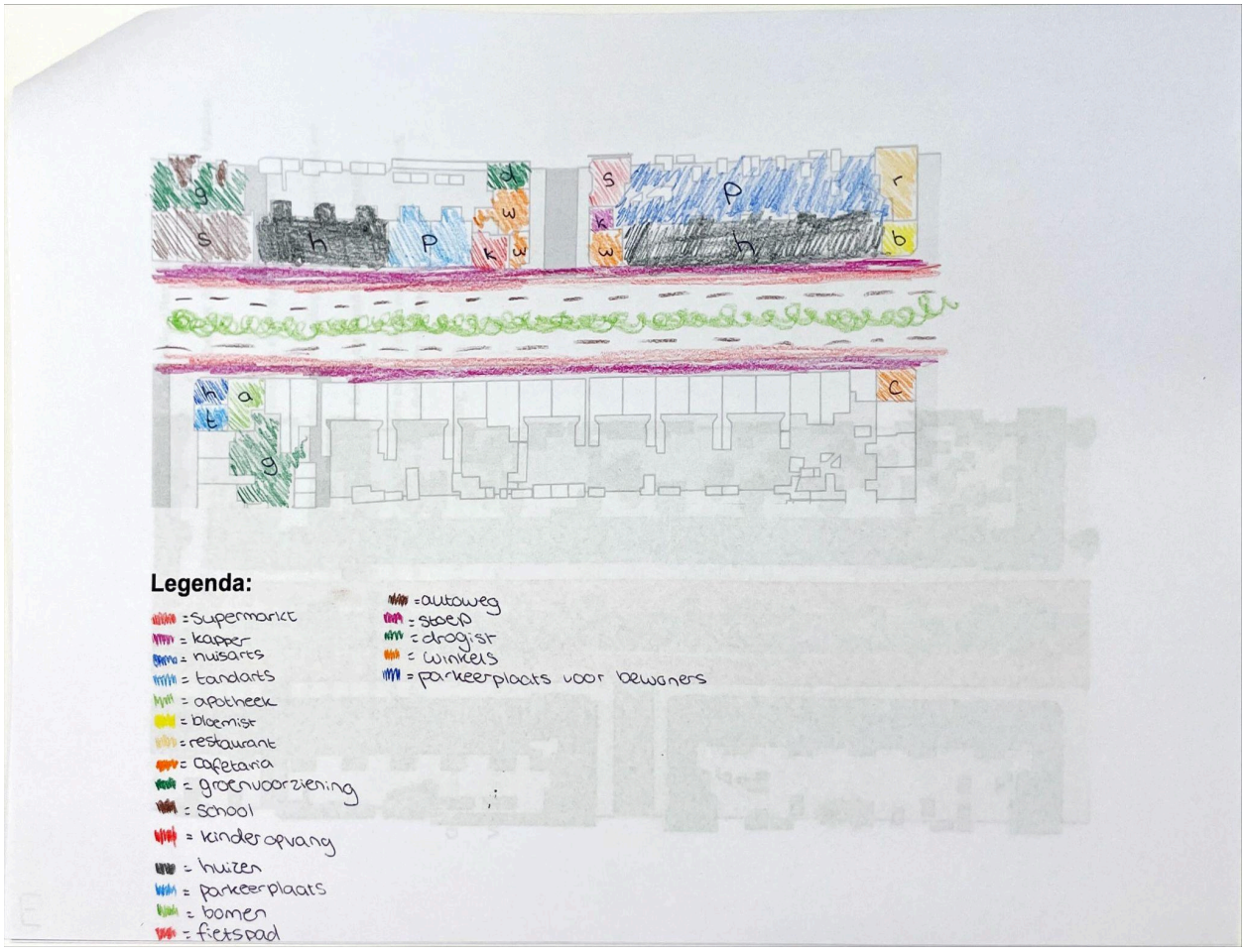
Person C


1 C
huizen
binnendoor weg
huizen
supermarkt
fietspad
autoweg
fietspad
School
huizen
binnendoor weg
huizen
Legenda:

Person D


K
P
t
K
D
Q
Legenda:
= groenvoorziening : speeltuin (S), parken (P)
= ~~winkels, zoals~~ supermarkten
= basisschool
= voorzieningen, zoals kapper (K), doktor (D), tandarts (t)
= zitplaatsen
= zebrapad
= parkeerplaats bewoners
= ~~fiets~~ fietspaden
= eenrichtsverkeer voor ~~fiets~~ motorvoertuigen
= parkeerplaats bezoekers

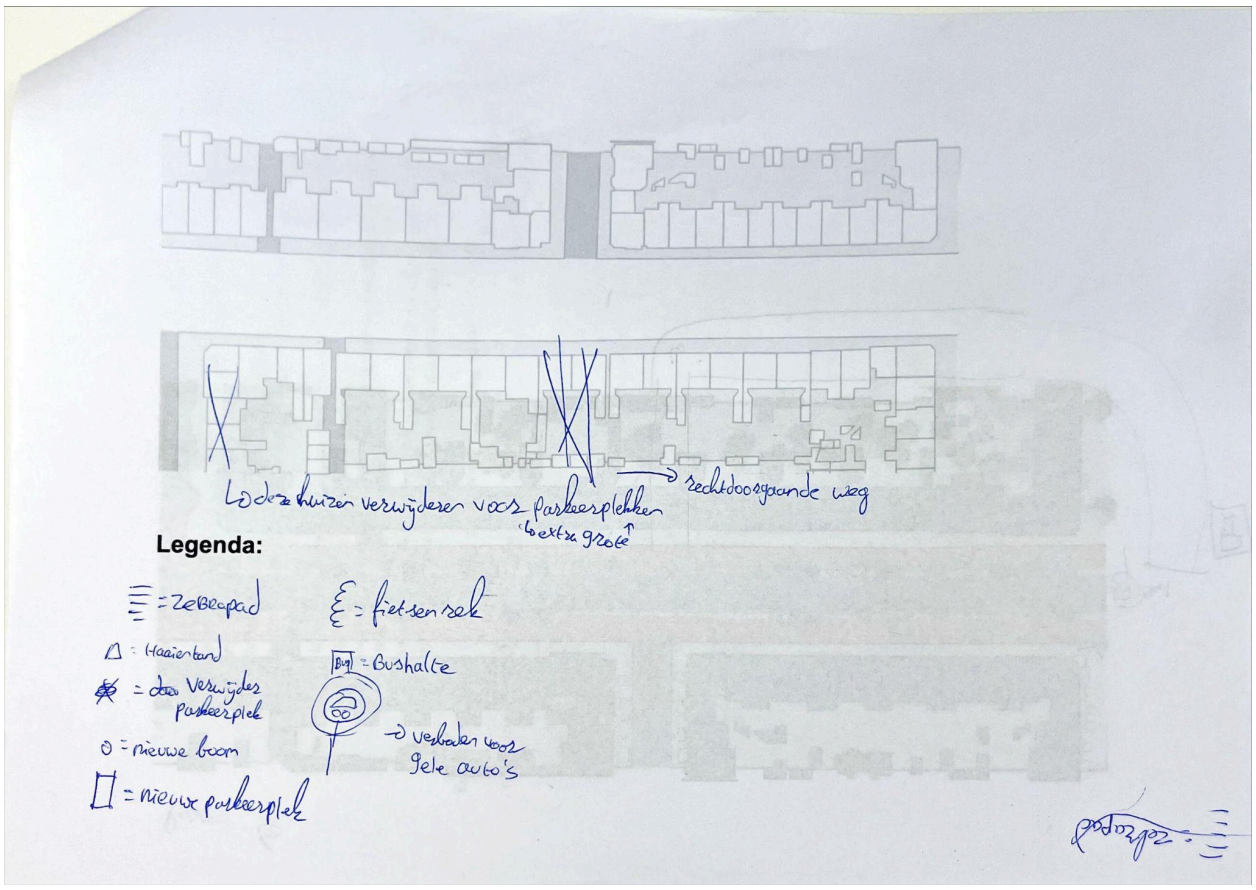
Person E


Legenda:
= supermarkt
= kapper
= huisarts
= tandarts
= apotheek
= bloemist
= restaurant
= cafetaria
= groenvoorziening
= school
= kinderopvang
= huizen
= parkeerplaats
= bomen
= fietspad
= autoweg
= stoep
= drogist
= winkels
= parkeerplaats voor bewoners

Person F

Person G


Person 6


Legenda:
= zebrapad
= fietsenrek
= Haaientand
= Bushalte
= nieuwe boom
= nieuw parkeerplek

Appendix 5- Lesson plan for the data collection

Stages	Teaching and Learning Activities	Materials	Time allocation
Introduction	1. Introduction of researchers by teacher 2. Introduction of topic a. Talk about us and the programme b. Talk about Sustainability and link to children 3. Communicate expectations a. Discuss our expectations from the participants		5 min
Getting ready/buffer	Wait for all students to be ready to go to the selected street (Korreweg)		5 min
Walking to the site	Walk to Korreweg street		10 min
Site exploration	1. Let students explore the site a. Go from one end to the other of the selected street 2. Present scenarios a. Show students the scenarios with the proposed changes 3. Let students explore the site with the focus on the scenarios a. Once again, the students go from one end to another focusing on the new scenarios 4. Ask for reflection	Scenario Visualisations (A4)	15 min
Walking back	Walk back to school		10 min
Break			15 min
Explanation	Explain purpose of interviews		5 min
Sketching, Discussion & Survey	1. Participants were given freedom to sketch their ideal street 2. Interview about the specific survey questions	Scenario Visualisations (A4) Coloured pencils	35 min 5 min per person (x7)
			1h 45min