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Appartementje, boompje, beestje

An architectural building experiment in social housing to accommodate families with young children in the inner city.

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Together with my girlfriend I like to watch the Dutch Television Programme Kopen zonder Kijken. In this TV Show Dutch families are looking for a new home and cannot find it because of different reasons. It is mostly caused by their huge wish-list despite of their small budget. A lot of these nominees are young families with already one child and most of the times there is also one baby on the way. Generally they are now living in an apartment in the city and looking for more space. The wishes of almost all of the candidates are: a house of the 1930s, at least 140(!) square meters, four bedrooms and a bathroom with a bath and separate shower. In particular the desire of a 1930s house frustrates me a lot. The best reason they can give is that they like the character of the building, but in my eyes this is only based on what others want or have. People can be so smallminded sometimes and therefore this frustration started a fire in me to do something with it in my own graduation project.

~ TOM KOEKKOEK ~



#Enjoy Reading!

CONTRIBUTORS



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Cities can only be human if they are also designed for children. If they are not meant for children they are not meant for citizens either. If they are not meant for citizens ourselves - they are not cities.

Keywords: children in urban environments, family life, apartment living, sense of neight modern families, collectiveness.

ABSTRACT

This descriptive research focuses on how architecture and the built environment can provide a childfriendly and future-proof childhood in the inner city. This could lead to a necessary cultural change from huisje, boompje, beestje to appartementje, boompje, beestje.

In the Netherlands we have got the phrase huisie, boompje, beestje. This symbolizes the phase of young couples who are going to settle and are having a nice, quiet and standard family life. For many of those the social success image includes a single-family home with a garden. Apartment living is widely seen as inappropriate for children and therefore they think that this is the best place to have their huisie, boompje, beestje. This research will show that this can be done differently and can change into a new culture: appartementje, boompje, beestje.

To get more understanding of the young urban families as a modern household, this research will first go in-depth into this target group. 'Who are they?' and 'What do they want?' are questions that will be answered in this first part. This will be done mainly by literature analysis. After that, the research continues with the urban children. The focus on this section will be on what they in particular want and need. Literature analysis and as an addition interviews with children living in the city will help to define their wishes. Besides this, there will be analysed different case studies about urban family housing. In the end all this rich data will lead to important recommendations for my graduation project.

urban bourhood,

PROBLEM STATEMENT

In the Netherlands we have got the phrase huisie, boompie, beestie. This symbolizes living a nice, quiet and standard family life. For many Dutch people (including myself) this is their goal after a young and wild student or travel lifestyle. They want to settle and have a nice house (huisie), a garden (*boompie*) and probably a pet (beestie). For many people in Holland a single-family home with a garden is part of this social success image. The dream is a detached house or a semi-detached house. Partly because of this, young families in the Netherlands are leaving the city to live in the suburbs or countryside. After this aim in life is achieved the next big wish for many people is to get children. Apartment living is widely seen as inappropriate for children and therefore they think that this is the best place to have their huisje, boompje, beestje.

The customer is always right and for this reason housing corporations keep on building single-family houses in the suburbs and countryside. If we look at the long term all these new dwellings will subsume more and more countryside and gobbling up more land and resources. We need this countryside with its beautiful nature and resources even more in the future, and therefore a culture change is necessary. The architects can have a big influence on this, because architecture is more than just the built environment. Architecture exists to create the physical environment in which people live, but it is also a part of our culture. It stands as a representation of how we see ourselves, as well as how we see the world. For this reason we, the architects, have a big responsibility to make people aware of this cultural change.





To convince people that they can have their *huisje*, *boompje*, *beestje* in the inner city, this research will be about designing dwellings for young urban families and in particular raising children in cities. The main research question therefore is:

How can architecture and the built environment provide a child-friendly and future-proof childhood in the city?

In order to answer this question, the research will first focus on the target group. It is very fortunate that there is already a trend going on of young Dutch families who want to live in the city. Some of them find their new homes in the city, but most of them do not. To learn more about this current situation of the target group, the first part will be answering the following questions: Why do families want to live in the city nowadays?,

How does this modern family look like? and What are their needs for a family home in the inner city? As an addition, the research will look in particular on what children want in their home. To learn more about this modern household it is also interesting to look at the history of families living in the city: How did young families live in the city in the past?

After we know more about the young urban families the research continues with the following questions: How can architecture and the built environment provide a child-friendly and future-proof neighbourhood? and What are the specific design tasks in providing dwellings for young urban families?

At last the research will be also looking at other countries and their culture of urban families: Where are young families living in other cultures and how do their dwellings look like?



RELEVANCE AND POSITION



The Netherlands is on the eve of a second wave of mass housing construction. It bears a resemblance to the post-Second World War reconstruction period. In that time there was also a high demand for dwellings and the emphasis was necessarily on building fast, cheap, and building as many as possible. Over the past half century, society has changed in many fundamental areas. There is a big cultural diversity; we are growing to forty percent single-person households; and the government, which used to be so patronizing, is taking a step back in more and more areas.

If we look forward to 2050, we need two million new homes. This current housing task, just as in 1968, is not just a matter of bulk. It is also a matter of quality. By building more and more single-family houses we are (once more) only gobbling up more land and more resources. The most essential question therefore is not so much the numbers and the speed at which buildings can be built, but it is again a demand for new dwelling types, new forms of housing and a new way of the living environment. This current situation therefore needs new architectural experiments just like fifty years ago.

This research will form the basis of my own experiment for the current housing task. New forms of young family housing in the inner city instead of the bulk, consisting of the single-family houses in the suburbs and countryside, can lead to the necessary cultural change.

SOURCE ANALYSIS



There is a lot to find about young families with children living in the city and the design of apartments for families. Most of the research about this modern household, the young urban family, is done by Lia Karsten. She is president of the Child in the City Scientific Committee and an associate professor of Urban Geographies at the University of Amsterdam and internationally recognized expert in the field of urban childhood, changing family life and the use of urban public space. This research therefore will be using her research including her book De Nieuwe Generatie Stadskinderen and several of her research papers.

Besides this, there are written different research studies that are focused on how to design apartments for young families. Examples of different study materials are: *Nestelen in de stad*, *Eengezinsappartement* and *De* leefwereld van het kind. This literature is an excellent way to start and to get understanding of the concept of designing an apartment for young families. Also several buildings have emerged from these studies and will be analysed in this research.

What this research wants to add to all these earlier done investigations is to look from the point of view of children. What do kids want in their apartment for example and how can we provide a child-friendly and future-proof living environment.

METHODOLOGY

With this descriptive research the aim is to systematically describe the characteristics of the young urban family. Through qualitative research, which includes collecting and analysing non-numerical data (mainly secondary sources), the idea is to get more understanding of the concept of designing a child-friendly and future-proof childhood in the inner city. It will be used to gather in-depth insights into this modern household type and to generate new ideas for the graduation project.

To gain a better insight into the possibilities for improvement of the situation around the dwellings for young urban families this research will focus mainly on existing data. There is a lot to find about young families with children living in the city, but almost all refer to Lia Karsten. Her work, which includes different books and papers, will be the foundation of my research. Besides this the focus will be on different case study materials such as: Nestelen in de stad. Eengezinsappartement and De leefwereld van het kind. These are all recent studies done by experienced architectural firms and corporations in the Netherlands. Several buildings have emerged from these studies and therefore will be also analysed in this research. The focus in analysing all these different case studies will be on how children use the building. Because these case studies are done by multiple Dutch firms it is assumed to give a good outline.

At last, to get more of the feeling of how children experience the city interviews will be conducted with children. These will be done with kids of different ages on a primary school in the city. With the help of my airlfriend who is their school teacher it is assumed that the questions will be at their specific age level and that they are feeling comfortable with the teacher. Structured questions that will be asked are 'How does your dream house look?' and 'Where do you love to play when you are at home?' After this questionnaire they will be asked to draw their dream house. As an addition to try to understand the children's view on the city even more, the book The City at Eye Level for Kids is used. This book contains nearly seventy research studies, city programs, case-studies, and personal stories from 30 countries across the alobe. This research collection will therefore be a good way to understanding the children in the citv.



DISCUSSION

In the following section you will find the discussion part of this research report. This chapter is the body of the research and includes: findings, arguments, the design approach, recommendations, etc. It starts with the modern household: the young urban family. In this first part the history, current situation and needs have been investigated and are described.

After that, the discussion continues with focussing on the most important part of the young urban family: the children. In this section the following questions will be answered: How can architecture and the built environment provide a child-friendly and future-proof neighbourhood? and What are the specific design tasks in providing dwellings for young urban families? This will be done by using interviews and looking at literature, other cultures and the plan analysis of four projects centred around the same modern household type. The focus within all these analysis will be on the children. What do they need and how do they live in the projects is what will be investigated.

DISCUSSION

Graduation Report #15



Lia Karsten

President of the Child in the City Scientific Committee and an associate professor of Urban Geographies at the University of Amsterdam.

In her analysis Karsten or the countryside. Since (2013) states that families the start of this period, always lived in the city, but single people and young because of the massive small households without suburbanization from the children are in the majority 60s cities and families in the cities. Nevertheless, have been drifting apart. the proportion of families The big towns in the in the urban population Netherlands have been is increasing again since growing strongly in the the turn of the century post-war period but this (Karsten, 2013). started to slow down after 1960. The main reason for this were the families who moved away out of the city. They wanted to live outside in the suburbs

Families always lived in the city, but because of the massive suburbanization from the 60s cities and families have been drifting apar



Stadswoohuizen in Rotterdam

HISTORY

Karsten may claim that families always lived in the city, but in the Netherlands, there is not a specific tradition in building apartments and in particular apartments for families. Many large cities in Europe and America have a long tradition in this area, usually in the form of elegant apartments for the better classes. In Holland, this tradition nonetheless does not exist (Michel, 2013).

The so-called *stads-woonhuis* played the leading role for centuries. With the construction of the cities at the end of the nineteenth century this type was always the starting point. With a simple street pattern as the base for city planning *kavels* were sold on which small developing builders set up their buildings. These lots were five to six meters wide and about ten meters in depth. Each had one house per building plot in the expensive streets, and in the streets for the middle class often two houses per plot: the so-called beneden-bovenwoning. Each of these had two floors, but sometimes with one and a half or three floors. In the neighbourhoods for workers or members of the small middle class, the buildings had three or four storey houses. These were all semidetached stadswoonhuizen: separate buildings with their own access. The family was setting the base for the design of these dwellings. The multi-storey houses in the working-



class neighbourhoods used to be very small according to our current standards for large families. However, for many people living in the city was a big step forward compared to living in the countryside these days (Michel, 2013).

The first real versions of family apartments in the Netherlands appeared in the period before the Second World War. The Parklaanflat by W. van Tijen in Rotterdam was built in 1933 and is seen as the first gallery flat in the Netherlands. The building had seven floors with one luxury apartment on each level. One of the first penthouses in the Netherlands was realized on top of this building. This rooftop apartment was the home of Van Tijen himself. According to him, stacked housing was the future, and not only in social housing. Two other examples can be found in Amsterdam-Zuid: the luxurious Westhoven project by F.A. Warners from 1923 and Muzenhof van Berghoef from 1939 (Leupen &

Leupen, 2013).

After these first experiments building stacked dwellings really started during the reconstruction period of the Second World War. Everything was about building fast and as much as possible. Rational building systems were deployed on a large scale to solve the housing shortage. In all cities, medium-high apartmentstorev houses (portiekflats) and highrise apartments with lifts and galleries (galerijflats) appeared. These homes with well-thought-out floor plans were almost always intended for the 'standard family'. The collective spaces, such as the entrance hall, the stairs, and the galleries, were designed in a purely functional, sober, and efficient manner (Michel, 2013).

In the 1960s, the architects and residents became more and more critical of the typology of these standard flats. The main issue in their eyes was that the apartment building was missing the human dimension in the design. It turned



out to be difficult to combine social interaction and privacy in a flat. In the galleries, 'forced' encounters take place between close neighbours, but meanwhile the residents of other floors are never met before. Besides this, there is also a big distance to the around level where the children are playing. Architects therefore start to experiment with the middle and high-rise buildings. An interesting example in the field of collectiveness and families are the experimental flats in Utrecht-Overvecht. This experiment focused on solving three main issues of the standard flats: the one-sidedness of the usual apartment (which was designed for the average family), the lack of privacy with the gallery street and the lack of contact with neighbours in a high-rise flat. The most eve-catching element of this design is the large communal space. This is designed on each floor and was supposed to serve as a hobby or playing area for children (Barzilay, Ferwerda, & Blom, 2019)

In the 1970s and 1980s many families moved away from the post-war neighbourhoods full of gallery flats to live in the suburban low-rise environments. The reason behind this was that living in apartments turned out to be only an emergency solution for families. People with enough money would leave these 'crisis' dwellings and people who did not have the money would stay. This is when our Dutch negative image of apartment living is started. Especially for families, the poor qualities of many post-war apartment buildings formed the solid foundation of this negative judgment (Michel, 2013).

The city was for a while losing the game compared to the suburban residential environments, but they came back strong in the 1990s. In this period the redevelopment started of former industrial- and harbour sites. Many cities were therefore enriched with new residential environments. From this moment livina on. apartment became

CURRENT SITUATION

booming in the Netherlands. The new urban dweller was highly educated and bound to the city by his or her work and lifestyle. These new inhabitants gave a significant boost to the urban housing market. Apartment buildings were designed with their own identity and with strongly expressive architecture. The collective spaces, such as the entrance hall, showed character and comfort. Special housing types such as penthouses, lofts, or city studios were designed for specific target groups. In most cases these new city apartments were made and designed for the small urban households such as one persons or a couples. The urban family was not yet in the picture (Michel, 2013).

For more than twenty years now the proportion of families in the urban population is growing again. If we take a closer look at this urban family, we can divide them into four different aroups. The biggest group is still the lower socioeconomic class with on the one hand the migrant families and on the other hand the Dutch working-class families. They can be compared with the group who also stayed in the city because of their lower incomes in the 1970s and 1980s. The third and fourth group are part of the (upper) middle class. These families consist of the ones with a migrant background (expats) and the Dutch middle class families. This last group is the new kid on the block. They used to prefer the suburbs and countryside because this is where they find better and more spacious homes. Nowadays this is exactly the opposite: those who can afford it stay in the city. This is because the dwellings in the city have become more expensive compared to the houses in suburban municipalities. This applies especially to the larger houses in the better places. For that reason, you need a lot of money to find a suitable home for your family to live in the inner city. Many yuppies, who lived in the city before, have collected enough money and they want to remain in the city. They transform from childless yuppies to 'yupps': young urban professional parents (Karsten, 2013).

There are three main reasons behind this growing attraction of the city to families. The first important thing is the presence of social contacts. It is already known that families with a migrant background want to live in the city because of the presence of



their family. Social contacts are also important for the upcoming (upper) middle class families. For them it is often not the familiar contacts, but mainly the network of friends. For example, the yupp who still knows a lot of old fellow students living in the city (Karsten, 2013).

The second thing is living close to work and facilities. This research is looking for a cultural change concerning the housing problem. But living in the city can provide much more cultural changes. The Netherlands has been a leader in Europe for a long time in terms of gender division of labour: women are attending to the household works and men are working and earning the money. This is nevertheless changing since the 1990s. Since the start of this period there has been a spectacular growth in the working motherhood. The reason behind this is that in the urban areas women work more than elsewhere. At the same time,

men in the big cities appear to work more often part-time. This is becoming more and more a standard throughout the Netherlands. They are called the 4-4 households: both parents work four days and take care of the children together. For this reason designing family apartments in the city can not only change the housing culture, but can also provide changes in terms of gender division of labour (Karsten, 2013).

The third and last reason for families to live in the city is part of the global gentrification: the revaluation of the city. This trend includes the ambition of pursuing a career. The need to belong and to be accepted is also part of this desire to live in the city. Besides this, parents are now appreciating more and more the learning dimension of urban living for children. Growing up in a multicultural environment would prepare them in a better way for the future (Karsten, 2013).

ASSOCIATED DESIGNISSUES

The current problem is, as mentioned before, that the dwellings in the city have become more expensive compared to the houses in suburban municipalities. The reason for this is mainly the enormous old housing stock built in the post-war period which is not considered suitable anymore. The growth of the space consumption per person in the Netherlands has made the dwellings too small considering the small number of square meters and the presence of three or fewer rooms. In these dwellings it is mainly the middleand lower-class urban family who live there. At the same time also the house prices have increased enormously. The bigger houses with a good location in the city have become unaffordable for many people (Karsten, 2013). This results in people living in places where they do not want to live. On the one hand, there is a group that lives too small and stays living in

these unsuitable post-war dwellings. On the other hand, there is the group of people moving reluctantly to the suburbs. This group lives here because this is the most affordable and easy solution, but they miss the real city lifestyle. For this reason, the city apartment for families could be the solution for this group of families. They might still have the preference of a land-bound house with a garden, but with the upcoming interest of living in the inner city the family apartment could be an acceptable solution (Nio, 2013).

Within this new assignment for designers lies the problem of who the design is for. The type of the urban family can have major differences based on characteristics such as the income, the composition of the household and the age of children (Nio, 2013). The research of Karsten (2013) already showed us that they can be divided into four main groups.



This distribution was based on national origin and income.

Besides this, the second difference is based on the wide diversity of the household composition. Although we might think differently, family complexity in the Netherlands has always existed. The main reason behind it nevertheless is changing. At the end of the 19th century, almost a guarter of growing children lost one or two parents. Divorce was a marginal phenomenon and death of one of the parents was the cause of complexity. Nowadays three out of ten 15-year-old children do not live together with both parents. The most common reason for this now is a parental divorce. For this reason, more and more children have had to deal with complex family relationships in the Netherlands between 1997 and 2017. The research done by Van Gaalen and Van Roon (2020) shows that although relatively the same number of parents have

a new partner after their breakup, the new companion has more often also children. Children therefore are having nowadays more step siblings than twenty years ago. In 2017, 365 thousand households with parents with underage children are involved in complex family relationships (through step relationships, halfsiblings etcetera). This compared to 'only' 232 thousand in 1997 makes an increase of six percent (Van Gaalen & Van Roon, 2020).

The last thing that causes diversity for the family household is the age of the children. In the modern household the input of all family members is considered. Therefore, each phase in the family leads to different requirements for their homes. If children for example have passed the age of four, they want to play outside. Because of this, families start looking for homes with a bigger or better outside space. This outdoor space becomes less important when



the children pass the age of twelve, because they start to become more independent. After this phase, the children might go to college and leave their rooms. The parents are therefore now left with empty rooms (Nio, 2013). To summarize the previous section: the vound urban family is diverse and can have major differences. The design assignment for the city family apartment therefore is about making flexible family apartments that are lifestyle-proof and designing spaces that are essential for the way of life of certain groups (Nio, 2013). An apartment therefore needs a well thought out floor plan and many rooms (Karsten, 2013). Nevertheless, what they all have got in common is that they want to live in an urban environment But when the children come into the picture, they are preferring a bit more peace and space: urban but also a bit sheltered. Karsten (2013) calls this stedelijkheid in de luwte. Sheltered urbanity has both social and physical characteristics. An attractive neighbourhood therefore is a neighbourhood (and preferably a street) where more families live with children of a similar age. In that way children come together and can play with each other. Playmates for children are therefore important and cause collectiveness. This is because children bring parents together and they will subsequently exchange knowledge about education for example (Karsten, 2013).

Urban families have a need for privacy, but also a stronger orientation towards collectiveness. They are willing to give up their wish of a private garden, but an attractive collective outdoor space is therefore highly expected. A good access to this collective outdoor space is therefore essential (Karsten, 2013).

Playmates are important and so are the facilities for children. Schools, parks, playgrounds are examples of



important facilities and nowadays this list also includes attractive restaurants where you can eat with your children. The parents of the families also prefer a quiet and carfree street with wide pavements. They like to fill in this place by themselves with pots with plants, benches, and sandboxes. This is for many of them a typical quality of sheltered urbanity (Karsten, 2013).

At last, living in the city has for many people also a symbolic dimension. What is mentioned before is that they want to be part of something and want to be seen in a way. Therefore, there must be an interesting story to tell about the neighbourhood and architecture of your dwelling. By choosing for the urban district, one can distinguish oneself from the ones who choose for the easy and normal option of living in the suburbs (Nio, 2013).

DISCUSSION PART II

Urban Children

A quest to a child-friendly and future-proof childhood



Children must be able to play outside and move around freely without the involvement of adults. Urban children of today are missing that freedom. I believe that it is our responsibility, as a city, as a society and as a neighbourhood, to ensure that children can move around the city in a safer and more pleasant way. In the first part of the discussion it is shown that the urban family is looking for a sort of sheltered urbanity. They want to live in the inner city, but are looking for a child-friendly solution. In this second part the research continues in looking for a childfriendly and future-proof childhood in the inner city. As mentioned before one of the design issues is that the type of urban family can differ based on the age of the children. This is confirmed by the research done by Liesker and Atteveld (2010). Their analysis shows that each age stage has its own radius of action. The first phase of four years of a child's life will only need a radius of 30 meters. In this range they can develop their motor skills. The second phase from four to

eight years old the range increases to 150 meters. They need this range to develop social skills. At last the radius 500 meters for the children with an age of eight to 8 to 12 years old. This range will be necessary to develop independency.

In this way this second part of the discussion is also divided into three sections: the apartment, the building, and the neighbourhood. For each part there will be given design solutions in how architecture and the built environment can provide a child-friendly and future-proof living environment. This all from the point of view of the most important part of the family: the children.

According to research done by Liesker and Atteveld (2010) each age stage has its own radius of action



Graduation Report #27



#28 Graduation Report

APARTMENT

Apartment living is widely seen as inappropriate for children, the number of families living in flats is nevertheless rising. For this reason, more attention should be paid to children living those apartments.

New Dwelling Types

Living with a family in the city requires a new type of dwelling. Much is written before about the strong feelings for a ground-based singlefamily home on the outskirts of the city. History showed us this is partly because of the negative thoughts of apartment living. The bulk of the postwar flat buildings confirmed our image of unsuitability for children. The Netherlands are however only one of the few countries with this culture. Therefore this part starts with some examples of other countries.

Families living in apartments have not been researched a lot according to Karsten (2017). Even the research she did in a huge city as Hong Kong showed that hardly any research or investigation is done into housing practices and problems of families with young children (Karsten, 2015). Nevertheless this topic gets more and more attention, also in the Netherlands. In this way this part is based on four recent studies, each with a (non-)realized project. The first research is done by architectural 5 architecten firm Heren in association with BNA (Bond van Nederlandse Architecten). The

project which emerged from this research is called Het Kolenkithuis and is located in Amsterdam. The second research is a reference book called Eengezinsappartement of a competition between architectural firms for designing the family apartment in Rotterdam. The winner of this competition is the project called Toren van Babel of architect Laurens Boodt. At last two projects of a collaboration with bpd (Bouwfonds Property Development). They worked together with ANA Architecten on a family plan for designing homes for families in the city. A project of ANA which is often mentioned, because of this research is The Family in Delft. At last the project of van Bergen Kolpa Architecten in collaboration with bpd: Family Scraper de Maasbode in Rotterdam.

The last part shows some results of the interviews with children living in the city.

CULTURAL DIFFERENCES

The purpose of this small section is to show that families do live in cities in other cultures. These examples are collected by the architectural firm Heren 5 architecten. They asked their former international colleagues to show the home of their childhood. The results are from Barcelona (Spain), Genoa (Italy), Bucharest (Romania), and Porto (Portugal).

Ana from Spain lived together with four persons including herself on 118 square meters. She names in particular the positive side of the many rooms which are included and the possibility to walk in circles in your own apartment.

Francesca from Italy lived also together with four persons including herself. She had a bit more space: I30 square meters. The two small hallways were a perfect place to play in this apartment. She names the kitchen as the heart of their home and therefore it is intensively used in various ways.

Laura from Romania also lived together with four people but in a much smaller space: 70 square meters. She also names the usable central hall and the intensive use of the kitchen.

intensive use of the kitchen. Because of the small living space they used the living room also as a study room and bedroom.

At last Ricardo from Portugal. He lived together with four people on 125 square meters. The most important thing of his childhood was not the dwelling itself, but he calls his green neighbourhood as a most important factor.









01. Ana, Barcelona (Spain). Four people on 118 square meters. 02. Frances Four people or













ica, Genoa (Italy). n 130 square meters. 03 Laura, Bucharest (Romania). Four people on 70(!) square meters. 4. Ricardo, Porto (Portugal). Four people on 125 square meters.

DESIGN SOLUTIONS



Nestelen in de stad is a collective research on how to improve city apartments for the modern households. Experienced architects were asked to describe different design solutions to achieve this. These are dealing with: the storage space, the hallway, the space distribution with privacy separation, and flexibility. The results of this research are summarized below and most of the topics will be used as guidelines for the analysis of the projects.

Almost all of the modern families have a structural shortage of **storage space**. Portiekwoningen from the 1930s are perhaps the best in this field with deep fitted wardrobes. After this period, the built-in cupboard received less and less attention. For this reason people were forced to give up space for cupboards. The participating architects of Nestelen in de stad are advising the return of the fitted wardrobes for more storage space. In this way, there will be more space left to play, sit, eat or sleep. Design solutions they advise are: storage space just outside the house on balconies or at the front door, a shoe cabinet at the front door, and multifunctional cabinets.

The **hallway** is often too small for a decent wardrobe in many apartments; moreover, it is not even suitable to welcome guests. Jeroen Atteveld of Heren5 architecten advises to transform the hallway into a multifunctional living space. In this space the children could play for example.

Family members also need their privacy inside their homes. In the beginning small children are looking for protection from their parents, but since the age of seven or eight they will need more privacy. Children with that age are starting to get their own



little secrets and this is important for them to become independent. If they are looking for a little more privacy the bedrooms and bathroom are ideal. Condition for this is that they are not located too close to meeting places in the house, such as the living room. Also shared routes through your bedroom towards the balcony for example is not something you want as a child, but also not as a parent. This problem of privacy distribution is easily solved at single-family houses with a division between the first- and second floor. In apartments this is more difficult, but can be solved by, for example, a free strip which helps to separate functions such as sleeping and living.

With **flexibility** the participating architects of *Nestelen in de stad* mean variable use and adaptable housing. Often there is a lack of space for the children to play or to allow a guest to stay overnight in apartments. An extra room would help, but also quickly creating one by yourself through multi-functionality would offer a solution.

On the other hand, families are always evolving. Children are born and first they do not mind sharing their bedroom with a brother or sister. They also like to play in the hallway or living room close to their parents. After a while they need more privacy and in particular teenagers need a quiet private bedroom to do homework. The *meegroeiwoning* of Katja Heid and Beatrice Montesano offers an apartment which changes in the number of rooms within the same floor space.

Although this is an important aspect for the design of apartments, it will be hard to analyse. Therefore this topic will not be analysed, but it is something to hold on to for my own design. Het Kolenkithuis are 37 family apartments under one roof designed by Heren5 architecten and it used the results of the research Nestelen in de stad. It includes a selection of maisonettes, (raised) single - family houses and family-apartments in one closed building block. Therefore it is assumed that this building will show all the previously mentioned design solutions and will be a perfect example of how families, and in particular children, can live in apartments.

In the image below you can see which types of dwellings this building consists of. These are: eight ground-bounded single-family houses, nineteen maisonettes and ten apartments. This research will in particular focus on the non-landbased apartments.

These apartments will be analysed based on storage space, the dimensions of the hallway and the privacy within the apartment.



BUILDING









Graduation Report #35

ANALYSIS









01. **Storage**; in addition to the storage rooms on the ground floor, both apartments also have built-in storage spaces in their apartments. 02. **Hallway;** both apartme approximately two meters for childre




ents have wide corridors of s wide, making it possible en to play.





OS Privacy; the apartments have a clear privacy separation. This boundary is halfway down the hall at the entrance to the living room. De Toren van Babel will be a new residential tower with 24 family dwellings on the Kratonkade at the Lloydpier in Rotterdam. This residential building is designed by architect Laurens Boodt and is the winner of an architectural competition for the single-family apartment in the city of Rotterdam.

The Tower of Babel is inspired by the painting of the same name by Pieter Bruegel and includes 24 twostorey apartments (maisonettes). In his design a street runs up around the building and connects all the dwellings. This collective outdoor space is connected to a private terrace and is a great place for your children to play outside and socialize with the neighbours.

The maisonettes will be analysed based on storage space, the dimensions of the hallway and the privacy within the apartment.

BUILDING





#38 Graduation Report



A P A R T M E N T



ANALYSIS









01 **Storage**; what is noticeable is that some houses in this design have multiple storage rooms and others have none at all. 02 Hallway; the hallway is this design. In some cases t seem ver





kept as small as possible in this can make the entrance y narrow.



05. Privacy; if we focus on the privacy separation in this building the architect clearly has chosen for a ground- and top floor separation.

The Family is a residential complex at the Spoorzone in Delft and designed by ANA architecten. It will have different types of apartments especially for families. BPD has conducted a study in collaboration with ANA into good and smart family apartments. With the knowledge from this study this residential complex is designed.

The Family will consist of several apartments specially designed for families. The homes will have one or several floors and are easy to adapt to any family stage and for diverse family compositions.

The apartments and maisonettes will be analyzed based on storage space, the dimensions of the hallway and the privacy within the apartment.







APARTMENT



ANALYSIS







Storage; all the apartments have a storage space within the apartment of about three square meters.

02. **Hallway**; all the apartn entrance hallway. The hall the times long a







nents have relatively small way at the back is most of and a bit narrow.



05 **Privacy**; a remarkable thing happens at the one floor apartments. In these the toilet is at the end of the hallway in the back of the building. The Family Scraper de Maasbode is a residential tower at the Schiedamsevest in Rotterdam and designed by van Bergen Kolpa Architecten. The project is about the balance between living and working, families and urban professionals, cultural facilities and green space.

In the image below you can see how the tower consists of different layers with on the ground floor an espresso bar and other facilities, and some street studios. Above these first floors there are a series of terraced family houses with large, spacious outdoor space and city apartments. The three-storey family homes have their front doors on the inner streets. This inner place forms a meeting place for neighbours and a safe playground for children. On the top floors you can find the loft apartments.

The analysis will focus on the terraced family houses and the city apartments, because these are the ones designed in particular for the families. They will be analysed based on storage space, the dimensions of the hallway, privacy within the apartment, and a degree of flexibility.

BUILDING





#46 Graduation Report



APARTMENT



ANALYSIS



01. **Storage**; storage space in these dwellings is mainly compared with space under the stairs and the laundry room.

02. Hallway; what is rema entrance hallway. Neverth second floor





arkable is that there is no neless, the hallway on the r is spacious.





Privacy; again a ground- and top floor separation, what is remarkable is that sometimes only one floor is private.







01. Gijs, 12 years old, likes to	02. Sterre, 12 years old, wants	03. Twan, 11 y
have his own bedroom and a	a big but cosy house with a	invisible house
gamingroom.	big garden or balcony.	p
04: Stijn, 11 years old, wants a big garden with a lot of flowers.	05. Jai, 10 years old, prefers a luxury bed with his own playstation 5.	

#50 Graduation Report





ears old, wants an e, because he wants rivacy!!!



INTERVIEW

In this section you can see some results of the interviews which are done with children from a primary school in Breda. Although Jeroen Atteveld advised me not to expect too much of the results of the children, they did surprise me. Without any advice some of them have drawn their dream house in a perfect architectural floor plan. Besides that, also what they filled in in the questionnaire was surprising. Stijf, 11 years old, for example loves nature and desires a big garden with a lot of flowers. Twan. also 11 years old, on the other hand desires an invisible house, because he wants privacy. Other things that are remarkable for this century are the

many children who prefer their own gaming room. This once again underlines the digital age we are living in. Furthermore the questionnaire shows that children of 7 and 8 years old almost half want their own room. They also like to play there instead of the others who still like to play in the living room. Within the age category of 10, 11, and 12 years old most of the children want their own bedroom. Except for a few who would like to

share still, because then they will get a bunk bed and they can sleep in the top bunk.

To conclude are these five points given of how architecture and the built environment can provide a child-friendly and future-proof apartment.

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More storage space

More storage space just outside the house on balconies or at the front door and multifunctional built in cabinets provides more floor space to live and play for children.

A bigger and more functional hallway

Transform the hallways into multifunctional living spaces. In this way, the children have an extra room to play for example.

Privacy separation within the apartment

Separate bedrooms and bathroom from the meeting places such as the living room. Also avoid shared routes through your bedroom towards the balcony. This problem of privacy distribution can be solved by a free strip which helps to separate functions.

O

Multifunctional rooms

Create extra rooms through multi-functionality would offer a solution for many cases such as an extra playing room for children or a sleeping space for guests.



Adaptable housing

Families are always evolving, so the number of needed rooms can change by time. A *meegroeiwoning* offers a apartment which changes in the number of rooms within the same floor space.



BUILDING

Families and children living in apartments often have two front doors: besides their own front door, also the outside door of the building complex. This section is about the space between those doors.

The In-between Space

The in-between space may differ but residents of apartments often have to share stairs, elevators, portals and sometimes also corridors with storage rooms. This space functions most of the time only as a route to get as fast as possible from your own personal front door to the front door of the building complex. The owner of the building wants to keep this place as clean as possible and therefore it is designed purely functional and not as a living space. Children may not or do not want to play in this area and teenagers cannot hang around here. The design question therefore is how to come up with a compromise between the owner and the children (Keesom, 2013).

This is maybe one of the biggest problems of living in apartments: young children do not have a place to play. Unless of course there is something like a large and sheltered balcony, loggia, veranda or roof terrace available. But when there does not exist a place like this, parents are forced to go downstairs with the children to the communal garden or playground. This is okay for the younger ones, but children from the age of six can already play outside independently. A condition for this is that parents can keep an eye on them from their apartment. This is possible for the first few floors, but above the third floor it is already a problem. Playing in the gallery or in the stairwell often causes nuisance and trouble with the neighbours. Everyone wants children to play and to go outside more, but the question is where this is possible (Keesom, 2013).

This section will start with some design topics and solutions in the field of the in-between space. After that the previously analysed buildings will be researched again, but now with the focus on the outdoor space in the building complex and where it is possible to play for the children. At last, some more results of the interviews with children living in the city are shown. # A SOFT TRANSITION



In apartment buildings there is often an abrupt transition from the inside of the apartment to the outside of the building complex. Behind the personal front door everything feels soft and warm, but on the way out hard materials dominate and make it feel unpleasant for children to play. And after that, when you open the front door of the complex, the traffic adds only more to these hard and unpleasant feelings. For this reason it is not attractive for children to go outside and play with other kids (Keesom, 2013).

Herman Hertzberger calls this space the in-between or in Dutch the *drempel.* According to Hertzberger this area provides the key to the transition and connection between different places of ownership and for meeting and conversations between different areas. This concept comes forward the most at the front door space of the apartment. What is important for this place is that it combines the contradiction between the public street on the one hand and the private apartment on the other. The possibility for privacy and the possibility for making social contacts are both essential. Porches, awnings, landings, terraces, sidewalks and many other forms of in-between spaces help to prevent a too hard and too abrupt separation between in- and outside. Therefore Herman Hertzberger states that thick walls are just as important for privacy as the in-between for making social contacts (Hertzberger, 1996).

PLAYING OUTSIDE

Young families would love to have a house with a garden. Therefore the garden is seen as the main reason behind the suburbanisation of families. However, this garden is only attractive for the young children under the age of 4. After that, most urban gardens and balconies are becoming too small for them. They need more space to play football for example or meet with other kids. Playing close to home therefore comes in second place after the parks and playgrounds (Karsten & Felder, 2016).

In particular after school or in the early evening are the moments when playing close to home happens. Most of these times they play with brothers and sisters, and with friends from the same street or neighbourhood (Karsten & Felder, 2016).

The advantage of playing close to home in comparison with parks and others is that it can happen without the supervision of parents. It gives the children more freedom and it relieves the parents so that they can do other work like preparing dinner. Besides that, the participation of parents and their continuous guidance does not benefit the development of creativity of the children (Karsten & Felder, 2016).

The most important condition to let children play close to home is that it has to be safe. Reasons that parents find the public space unsafe to allow their child to play independently are on the one hand forms of social safety, such as fear for vagrants or junkies for example and also children bullying each other. On the other hand, road safety is also an important factor. The number of cars has increased enormously and therefore cities are designed for them. The streets function now as a solution for the parking problem at the expense of the pedestrian and therefore the children's playing area. The solution for this problem is simple: give the city back to the pedestrian (and therefore the children) and make wider pavements for instance. More about the street you will read in the next section about the neighbourhood (Karsten & Felder, 2016).

Of course a courtyard building provides a safe inner space for children to play, but in apartment buildings there are other places to design attractive playing areas for children to play on before entering the street. For example, Jeroen Atteveld (Heren5 architecten) desianed the portiek-veranda. a specially designed zone in the stairwell near the front door of the apartment where children can play and residents can meet each other. In that way stairwells can function as playing areas. Also transforming the galerij into a wider playing area can offer a solution. At last, the galerij en *portiek* can be connected to a common garden on the ground floor (Keesom, 2013).

Heren 5 architecten wanted to design a building with different places to play for children. When they grow older, they will also expand their playing area. To start off with the common gallery. This gallery is shown in the image below and it has been visibly widened. In this way, children up to four years old can play here in a safe way.

When children get older with an age of four to eight years old they will outgrow this area. In this age stage they have the possibility to play in a safe way in the common courtyard. If we look critical to this playing area, it does not look attractive to play at all. Both images show how this section is paved and filled in with parking lots. Of course children can play soccer for example, but it does not really challenge the children to come outside and play.

After this age stage they get older and will outgrow this area again. Therefore the architects designed a playing area near the building plot (see page 35). This area looks far more attractive for children to play.

Coming back to the gallery the image

IN-BETWEEN SPACE



below shows that the architects did not really pay attention to the important in-between space. When people living on this street get out of their own front door, they will enter directly into the common gallery. On the other hand, the building shuts out the busy city.



#58 Graduation Report



PLAYING AREAS





Laurens Boodt Architect has chosen for a collective living street around the whole tower of Babel. From the public street at the ground floor this living street goes around the building up to the top of the building. In this way all the buildings are connected and also slightly divided by different floor heights. This street is a place where children can run and play around safely with the supervision of the different parents.

To give every dwelling a private peace of outdoor space, most of the apartments have a little niche. But some of the dwellings do not have a place like this. In the scheme these are the upper purple and blue dwellings for example. They do not have a clear separation between private and collective. This is also shown in the right impression.

You could say that this outdoor space functions as the in-between space. Nevertheless, the people enter their apartments from the inside of the building, because this is where we find the entrance hallway. The collective inner corridor is designed as small as possible and does not really provide a well designed inbetween space.

Also the in-between space of the outdoor area does not pass all over the first floor. In this way neighbours will walk closely next to your windows.



IN-BETWEEN SPACE



#60 Graduation Report



PLAYING AREAS





ANA Architecten makes use of different streets in the air on top of each other. The gallery is therefore not only an access point but also serves as a playground and collective place for the children. The first floor has a raised deck and this area is completely free to use for children. Here they can play safe under the supervision of the parents living in the stacked dwellings.

To separate the dwellings from this collective space the architects of ANA designed a in-between space in different ways. For example by placing different planters that separate the different private front door spaces and also visually limits this area. In the upper corridors the architects also made use of different light shafts to not only separate different areas, but it also provides more light into the building.







#62 Graduation Report



PLAYING AREAS



Van Bergen Kolpa Architecten designed little neighbourhoods on each level. These areas are connected by one central space. This living street in the air provides a safe place for children to play and on top of that it is also dry and protected from weather circumstances. The children also have the possibility to play outside and walk around the whole block. This outside passage goes around all the dwellings and is connected with the inner-street.

In this way the dwellings are connected on both sides with common spaces. In the inner-street the space is not divided from the private area with an in-between space. When you walk from the inside of the building to the common space, you are directly confronted with this area. If we look at the outside of the building, every dwelling has its own private terrace. This terrace separates the common outdoor space is limited by different planters with trees and greenery in them.

IN-BETWEEN SPACE



#64 Graduation Report



PLAYING AREAS











01. Roel, 7 years old, underlines the need for extra toilets in case one is occupied.

04. Ties, 7 years old, prefers to play outside in a tree with his friends. 02. Aureley, 7 years old, would love a colorful house with hearts and stars.

05. Koen, 7 years olds, loves his pets and wants a bunk bed on the top floor. 03. Wies, 7 yea in her own roo







rs old, wants to play om on the top floor.

INTERVIEW

In this section you can see more results of the interviews which are done with children from a primary school in Breda. 22 out of the 36 children, so 2 in 3, indicate that they would rather play indoors than outside. The rainy weather of the moment while interviewing could of course have an influence on this. Yet it once again indicates that children are playing more and more indoors and playing online video games. Fortunately, there is also a considerable part of them who prefer to play outside (9 out of the 36). And a last part of five smart children who prefer only to play outside when the weather is okay enough for them. Most of the children prefer to play outside in a

playground or on a football field. Aafke, 12 years old, loves to play in the park, but NEVER alone! More of these interviews with the questionnaire and the drawings of their dream house you can find in the appendixes.

To conclude are these five points given of how architecture and the built environment can provide a child-friendly and future-proof building complex.

Make living streets

Streets to stay and play is the key principle for making a child friendly urban environment.

A soft transition

Design a soft transition by making an in-between zone it will be more attractive for children to go outside and play with other kids.

D

Transform stairwells into play areas

By transforming stairwells into playing areas children can play close to home without the supervision of the parents.

Transform corridors/galleries into play areas

By transforming the common corridors and galleries into playing areas children can play close to home without the supervision of the parents.

Make wider sidewalks

By making wider sidewalks children can play more safe in the streets.



NEIGHBOURHOOD

A battle has started in the field of the public space in the city: the children vs. the adult. They compete about the use of space and it seems to develop in a situation where the law of the fittest applies.

The Overloaded City

After years of suburbanisation there are now in the world more children living in than outside cities. The rise of the number of residents causes an increasing pressure on public space. The area now consists of cars, bicycles, terraces, waste bins, charging stations and many more. In other words, the outdoor space is becoming increasingly crowded and more and more people (and in particular the children) are feeling lost in the city. The rise of the car in the city is seen as the main cause of this. The ratio of children to cars in the city has changed dramatically over the past 70 years. For example, there are now twice as many cars in Amsterdam than children in the city (Karsten & Felder, 2016).

It is weird that it still gets so little attention, because do not we all want children to play outside rather than growing up behind their computer screen? In particular in these times controlled by the COVID-19 pandemic the importance of playing outside has once again been confirmed. Exercising, meeting other children, playing outside, cycling, playing football, skateboarding and doing mischief is part of growing up healthy. Urban living can also add different educational experiences for children: they become streetwise. Exploring your own neighbourhood contributes to informal learning, experiencing diversity and building self-confidence. If we want children to achieve all of this, action must be taken (Karsten & Felder, 2016).

Although this is an architectural research, living (and in particular living in the city) is not only about the dwelling itself, but it is also about the neighbourhood and the city where children live in. As an urban dweller vou are confronted in all activities outside your home with your own neighbourhood. Each city is divided into those districts, which are usually spatially separated from each other by physical boundaries such as waterways and busy traffic roads. This part is about how to fill in this space in the best way for children. Which facilities are important for example and what other things are needed for an attractive neighbourhood.

WHAT MAKES THE NEIGHBOURHOOD

The neighbourhood is a verv important resource for children which they can use and design by themselves. Besides family and school it can be seen as a third place of a socialization environment. The size of the neighbourhood can differ between parents and their children. For parents the average is a radius of something around 450 meters around their home. Although the neighbourhood size increases during the aging of the children, for them it is normally only half of this. Children are seeing their neighbourhood from the point of view of the walking distance, while parents are seeing it more from a cycling point of view. The neighbourhood is therefore more a big living space. When they leave this space, it is already a kind of excursion. The elements which are included in this area, are the ones which are regularly used. These are for example the social contacts and facilities such as the supermarket. the park and the school (Karsten & Felder, 2016).

The social contacts are of major importance for children to get a neighbourhood feeling. The compact city with a relatively high residential density is therefore a positive development according to Karsten and Felder (2016). More children in the neighbourhood are logically a bigger chance for friends. Besides this, it also means more eves of parents on the streets and therefore more safe for children to play on. And third, more people in less space causes more encounters and therefore more collectiveness. Of great importance to this is that families with children of the same age stage live together in

the same neighbourhood (Karsten & Felder, 2016).

A few shops are important for dwellers in a neighbourhood and especially the supermarket. Young families like to do the weekly grocery shoppina toaether with their children. In some cases the parents even let their children do some quick shopping on their own. This is only when the parents can see the kids walking towards the store and if they go with a friend. The park is in particular a must for the parents according to Karsten and Felder (2016). The greater the distance to the park, the greater the neighbourhood itself becomes for many parents. This underlines the need for a green and peaceful environment for them (Karsten & Felder, 2016).

Childrengettoknowtheirfriendsfrom their own street and neighbourhood as well as from the school. If these two scale levels come together, it usually means that children know a relatively large number of children in the neighbourhood. Although the lowest scale level of the street is very important for children, it turns out that most children start to know their friends mainly from school. But if the friends from school also live in the same street, contact is often highly intensive. For this reason it is very important that schools are included in the neighbourhoods. For example in Rotterdam it is shown that when children live far away from their school, the social radius of their neighbourhood becomes smaller. They do not know many nearby living children and therefore are playing less outside (Karsten & Felder, 2016).
PLAYING OUTSIDE

As mentioned before. plaving outside is seen as an essential part of growing up healthy for children. It includes running, climbing, cycling and many more and on that way it is about getting to know the limits and strength of the body. It also learns children to be aware of dangerous situations and makes them more careful in comparison with children who do not play outside very often. For this reason plaving outside is important for the physical development of children. Besides this it also contributes to the development of knowledge. spatial insight, creativity and socialemotional growth. Children learn to deal with the available playing equipment and therefore they inventive. become more Thev also learn to handle differences of opinions with other children and come up with solutions for this matter (Karsten & Felder, 2016).

All this is shown by many researches, but nevertheless more and more children are staying indoors (even before the corona pandemic). Although you might think that this is caused by developments such as online gaming, there are however also other reasons.

Parents are for example struggling with the importance of letting their children play outside independently on the one hand and the need to constantly protect them on the other. While parents used to admire the development of resilience, it is now changed to a fear of vulnerability. Parents therefore do not dare to let their children play outside without surveillance. This results in children not only playing outside less often, but also when they do go outside it is with the supervision of parents. In fact, it is done under supervision more than half of the time. The age of the children is of importance in this level of supervision. It decreases



logically as children get older. Around the age of ten, parents start to realize that children need to be prepared for secondary school and are therefore giving them more freedom. This declining independent freedom of children is an international development. Playing without this supervision is nevertheless important for the development of children. If there are no parents around, they have to solve problems by themselves. Children learn therefore to be empathic and to deal with disappointments (Karsten & Felder, 2016).

If children do play outside most of them prefer to go to parks, schoolyards and playgrounds outside of their own street. Parents of course often accompany them while playing outside. This belongs to the framework of daily and weekly excursions just like doing grocery shopping. Besides the park, the school-yard in particular plays an important role in these daily social interactions. This applies to both children who live far away from school and close by. For the ones who live far away it is mainly playing in the yard after school. Parents often stay watching and talk to other parents when they come to pick up the children. For children living nearby the school, the playground also functions as a part of the neighbourhood. Parents are seeing this as a safe place for children to play and are therefore letting them play there sometimes on their own. The kids are on that way not only using the space after school, but also later that day (Karsten & Felder, 2016).

Although the school-yard can have a

real nice neighbourhood function, it does not happen very often. Different elements to make this place more attractive can be deployed according to Karsten and Felder (2016). These are for example to make a free access to the school-yard, even outside school hours. Secondly the social safety of it can be improved by building dwellings around it. Also the school-yard could be more spacious in many cases and some facilities as well for the parents such as benches with a shelter are improvements (Karsten & Felder, 2016).

At last, most of the playgrounds are often too boring for children to play on. The standard swings for example are only interesting for the younger children, but the older ones find it not challenging enough. Playgrounds therefore should offer different kinds of play, alone or with other children. They like to use their own imagination and love that freedom of how and what to play (Danenberg, Doumpa, & Karssenberg, 2019)

FACILITIES & SAFE ROUTES

Besides school and plaving outside the lives of children also consists of other things like different clubs and going to after-school care. These time uses have been on the rise since the 1970s. In particular the children of working (higher-ranking) parents make use of this care. Also the range of different clubs has been growing and therefore children can learn different skills at an increasingly younger age nowadays. This has become a new and important part of raising children: stimulating the development of the talents of children

Problem within these time uses is that children are only meeting other children from the same social class. This is because of the parents who choose only the best club and afterschool care even if these are further away. Of course this applies especially to the parents with higher incomes. The lower- and middle class choose more often for the ones nearby. But in both cases it is important to have these facilities nearby, because of the same reason as for the schools: it provides more nearby living friends and therefore for children to play outside more (Karsten & Felder, 2016).

Safe routes to these different facilities are very important for the children. As mentioned before, the amount of cars in the city has grown very fast in recent decades. Partly because of that, parents choose to bring and transport their children to every facility they need to go. Lia Karsten calls this generation of children the *achterbank generatie*. On top of that parents choose driving and even walking above cycling. Although the Netherlands is a cycling country and children would love to ao cyclina, this is not considered safe enough by the parents. Therefore there should be more attention to the safety on the road for children by bike, but also as a pedestrian (Karsten & Felder, 2016). Improvements to start with are making better cycle lanes and pedestrian routes in particular on the routes that children use often like between school and home. Make the car secondary on these routes, or even better; make them car-free. Speed reduction also helps for more safe routes, just as road signs with kids are playing here! More about how to design the street in a child friendly way you can read in the following pages (Danenberg, Doumpa, & Karssenberg, 2019).

THE STREET



To conclude this section is about something that is coming back in every book or research: the power of the street. Hertzberger states that houses and streets are complementary and he would love to see the reclaiming of the street as it should be. In this way it can function as a common living room where social relationships can be made between residents. Not only as a living space for daily activities, but also for special occasions so that people can celebrate them together. Although it seems weird, Hertzberger advises to design the street if all the residents could join dinner all together in this common

space. It should at least be possible in his eyes to do this (Hertzberger, 1996).

This demand for the living-street is not something new. Bleeker and Mulderij already saw that the children were out of the game and they started looking for a childfriendly living environment. The most important design solutions they gave was creating *woonerven* (living-streets). Characteristics of a residential area like this where: lots of greenery, benches, varied paving, different play areas for children and as few cars as possible. Research already claimed the advantages of such a residential area: parents keep less control and also there are more social activities between children. But also in their design example the car has still a major influence with a lot of parking lots on the livingstreet (Bleeker & Mulderij, 1978). Hertzberger had seen this positive development of the *woonerven*, but still also sees this major influence of the car. In particular the size and quantity of the cars ensures that there is still a lot of space lost for children to play (Hertzberger, 1996).

Streets to stay and play is the key principle for making a child friendly urban environment. Car roads therefore should be downsized to a minimum of a single one direction road. Pavements should instead control the street with a minimum of four meter. This allows children to play and meanwhile pedestrians can still pass. Just as forty years ago in the research of Bleeker and Mulder vegetation is still important. It should have different colours, different sizes and maybe even consist of different fruit trees (Danenberg, Doumpa, & Karssenberg, 2019). Trees on the middle of the pavement will provoke playing possibilities. They can become a target to walk or cycle around. In this way street equipment can be used in different ways. Children can and will play everywhere with their use of imagination. Designers should use this imagination and make play material out of street furniture. A traffic sign could function for example as a swing or doing head rolls around it. At last the plinths are also important. Dwellings should be connected with the street by designing better in-between zones as mentioned earlier (Karsten &

Felder, 2016). Plinths are also really important for children. Make them also attractive for them with different materials and colours. Internal and external space should be merged together in a way that is playful and fun for children but not disturbing for the parents (Danenberg, Doumpa, & Karssenberg, 2019).

To conclude are these six points given of how architecture and the built environment can provide a child-friendly and future-proof neighbourhood.

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Compacting the city

More residents means more eyes on the street and also more opportunities for children to make friends in the neighbourhood. Besides that, more users of less public space stimulates encounters and therefore provokes collectiveness.

Nearby facilities

Nearby facilities are important to know more children within their own neighbourhood. They will therefore playing more outside, because they have more friends to play with.

The school yard as a square for the neighbourhood

Make it easily accessible and also outside school hours. In this way the neighbourhood can meet each other, children as well as adults.

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Better playgrounds

Most of the playgrounds are often too boring for children to play on. Playgrounds therefore should offer different kinds of playing and children should use their own imagination.

●

Prioritize pedestrians over cyclists and cyclists over cars

Create safe mobility through differentiation in street typology at neighbourhood level. In this way the traffic participation of young children is stimulated.

Streets to stay and play

Streets to stay and play is the key principle for making a child friendly urban environment.



CONCLUSIONS& RECOMMENDATIONS

History showed the reason behind our negative image of families living in apartments. In the Netherlands there has never been an specific apartment culture except the *galerij*and *portiekflats* of the postwar period. These two dwelling types are the reason behind our negative image. They are outdated, small and all the same and therefore this bulk forced young families to live in the suburbs.

The current situation is nevertheless that there still are families who want to live in the city but the current housing stock is not suitable enough. In particular the social middle class cannot find their new home in the inner city. The type of this urban family can have major differences based on characteristics such as the income, the composition of the household and the age of children. However, they all are looking for the same thing: sheltered urbanity.

Children are the most important part of the urban family and therefore living in the inner city has to be made suitable for them. Each age stage has its own radius of action. It starts with the apartment, followed by the building complex and after that comes the neighbourhood.

Designing child friendly apartments is an almost new design assignment and not much has not been researched. Nevertheless, there have been some studies in recent years and some projects have also been developed. They showed that the following things are important: storage space, functional hallways, privacy separation, multifunctional rooms and adaptability.

However, it is not just an apartment

that is important for children of an urban family life. It is also about the interaction between the private-, collective- and public domain. They need a safe outdoor space to play close to home without the danger of traffic or dark figures. This does not necessarily have to be a communal courtyard, but can also be designed in the stairwells or galleries. Besides that, the neighbourhood has to have different functions as a school, a park and other facilities. A condition for this is that there are safe routes created for children.

Within this all lies the power of the street as a common living space for the neighbourhood. The street should be a collective place to stay and play for children (and parents).



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WHAT IS NEXT?

A house is not only a place, but also a set of actions including sleeping, eating, playing, studying, washing, storing things and many more.

An apartment in the city has to fulfil all the necessary things for these different actions according to Heren5 architecten (2013). However, normal daily routines are not only harmonious, there is always some friction within a family because they share the same space. Furthermore, daily routines are always changing and therefore there is no one-sizefits-all solution to all the desires. That is why the design assignment for the city apartment for the young urban family involves an exploration of the spatial consequences of the changing lifestyles and relationships within the modern urban family (Nio, 2013).

From this moment the main focus will be on the design part, but the research never stops. For this reason, I want to meet the urban family in person and want to observe how they live and what their daily routines are. Books as The City at Eye Level for Kids and The Design of Childhood really opened my eves for looking at the world from the children point of view. I would love to experience a day of an urban kid, but the next six months will probably still be in control of Covid-19 and it will therefore be hard to find the opportunity for this. Therefore, if even this is possible, I want to visit my uncle and aunt who are living with their children in the Bijlmer. Also I ordered the book Stadsmensen: levenswijze en woonambities van

stedelijke middengroepen. This is another research done by Lia Karsten and is focussing in particular on the urban families living in Rotterdam. Besides that, I hope to do some more short interviews along the way with some professionals. The interviews I did with the children gave me great satisfaction and I really enjoyed doing it, but (and Jeroen Atteveld of Heren5 architecten did warn me about it) did not give me a lot of design assumptions. Therefore I hope to talk with Atteveld once more and at the end of this research I finally had contact with Lia Karsten. Her advice will be very welcome as well.



In the following section you will find the urban master plan and the conceptual design of the chosen building complex.

The total urban master plan is made by a group of 16 students. Divided into groups of four each designed one quadrant. In the end we combined the four quadrants together and afterwards we all selected one building complex to develop.

The final design of this building complex will be based on the previous results of the research.



Research Report #85

The current Graduation Studio of Advanced Housing Design this year is focusing on creating an urban master plan in the Rotterdam harbour for the area of M4H. Since the industrial hub of M4H is located between the harbour and the city it is a perfect place to create a place where both these aspects can come together. The way in which Rotterdam has envisioned this is in a combination with both work and living, focusing on attracting the new makers, a creative group of people that innovate and make.

Due to the scale of the M4H site the studio is focusing specifically on the area of Keilekwartier, an area envisioned to house both industry and residential dwellings. The goal being to develop a new urban master plan for this specific part of the M4H that is in accordance with the already established ideas for this site. To fit our studio approach better Keilekwartier was divided into four guarters and split between four groups of four students. The north east quarter was marked as "QA" or "quarter A", south east QB, south west QC and north west as QD.





In order to come up with a successful master plan each of the groups had to partake in a typology transfer where they looked into different urban plans to see how these could be amalgamated onto their respective quarters. These projects being;

"Strijp S" in Eindhoven for QA, "Binckhorst" in Den Haag for QB, "Kop van Zuid" in Rotterdam for QC "Katendrecht" in Rotterdam for QD.



#86 Graduation Report



4 QUADRANTS

adrant D

ndrecht lered and -defined plots, brating courtyard castellated built n typology, much rmed by the misation of natural light

onnecting idge for bike pedestrian

> Landmark at the tip of harbour

Quadrant A

Strip S Mix scale architecture, with a less defined, sprawling configuration, scattered within a soft boundary gradually dissipating towards the park

Quadrant C

Kop Van Zuid Plinth as a unifying clement to root high-rises of various form, configured within a staggered grids, feed with generous plot area and open pocket spaces Park as collective open space

Quadrant B

Binckhorst

16-11

Gradual transition from a more fragmented composition of Quadrant A to a more defined, ordered plot, consist sof architectures configured by intersecting multiple built forms into a single entity

REGULATIONS

The master-plan is defined by a set of urban regulations. First of all, extending the axis of Keilehaven as a public open space. New plots have mixed-use functions with publicly accessible ground floors. Some streets are given new hierarchy and importance. For example, part of the frontage of Keilestraat and Vierhavensstraat must be built-up with mandatory façades. Same for Benjamin Franklinstraat and a part of Keileweg.



#88 Graduation Report

Crossroads of Vierhavensstraat and Keilestraat is highlighted by the 77 meters high tower as an entry point to Keilekwartier. Most of the other plots allow for tower placement, although not higher than 75 meters.

LEGEND











01. FSI of Quadrants: 3.2 for QA, 2.4 for QB, 2.5 for QC and 2.9 for QD.

04. Privacy: most of the ground floors will be dedicated to commercial functions. 02. Circulation: the masterplan follows the existing infrastructure.

05. Building typologies: most of the plots consist of high courtyard blocks. 03. History: k possible of th iconi







eeping as much as e monumental and c buildings

ANALYSIS

(1) The four quadrants differ from each other based on the FSI: 3.2 for QA, 2.4 for QB, 2.5 for QC and 2.9 for QD. (2) As for the circulation, the master-plan follows the existing infrastructure hierarchy and we've tried to keep motorized traffic to a minimum while still allowing each block to remain accessible by car. (3) Within the master-plan. we have tried to respect the history of the location as much as possible and preserved many monumental and iconic buildings, which takes up about 20% of the entire built footprint. (4) Most of the ground floors will be dedicated to commercial functions, workshop space and office space in order to

ensure the level of privacy necessary for dwellings facing the public streets. (5) When it comes to building typologies, adjusting to the existing infrastructure and plot widths plays a big role. Another important aspect is densifying the area to maximize its potential. Since keeping the existing buildings makes a big impact on the density, it must be compensated by relatively condensed new structures. That's why most of the plots consist of courtyard blocks with a possibility to build relatively high.

QUADRANT D

Quadrant D is as mentioned before based on the Katendrecht district in Rotterdam. This quadrant has one historical building at the beginning where art company *Kunst & Complex* is located. This building will, of course, be preserved. The rest of the area is a new design by four students and consists of closed building blocks which are separating public and private life.

Through green structures spread around the site, inside as well as outside the courtyards, give residents a pleasant place to stay.

The façades in the main axes are designed in a continuous way. This makes an easy to understand grid of blocks.

A single car road connects all the buildings in Cluster D. In this way the rest of the area is kept clear for pedestrians and bikes. Pedestrians and bikes have the right of way in Cluster D, for this reason most streets are car free, and open for residents to explore freely. Due to the single car road, each building can solve their parking needs internally.







#92 Graduation Report



REGULATIONS & ANALYSIS





Sun study: streets and inner urtyards will have a lot of shadow













#96 Graduation Report



Design Fina



Building plot with the proposed courtyard buliding block

MASSING SEQUENCE



Dividing the mass into three blocks opens it towards the city. Placing those block on a deck makes it 'sheltered'.

MASSING SEQUENCE



Shaping the volumes towards the sun and adding the final architectural elements.

#100 Graduation Report

FUNCTIONS



Dwelling types and functions

CIRCULATION



Entrances and circulation



FLOORPLANS




















UNITS

























ELEVATIONS





Graduation Report #127





Graduation Report #129

SECTIONS





FRAGMENTS





DETAILS

















REFLECTION

The value of research for the design of a new building experiment for the young urban family.

In this reflection the value of research for the design of my own graduation project will be discussed. During my educational path I have learned a lot of ass. Prof. Elise van Dooren and her generic elements in the design process]. This conceptual framework consists of the following five elements: experimenting, guiding theme, domains, laboratory, and frame of reference. The last one can be seen as the source of information and inspiration to be used in the experiments. in other words: research. Figure 1 shows how this literally holds everything together. Without the research, it will all fall apart like loose sand. According to Groat and Wang the research activity will grow and become more important during the bachelors and masters2. Figure 2 suggests that there should be a balance between research and design at the end of the masters. On this moment, at the end of my academic career, I want to look back on how this balance counts for my own graduation project and how well founded my own design choices are

For the Advanced Housing Design Graduation Studio of the chair Architecture & Dwelling, the assignment is to design housing in an old harbour area in Rotterdam called the Merwe-Vierhavens. This area connects perfectly to my own ambition for the 1 million homes task: creating new experimental social housing for the young urban family. In my opinion, building more rowhouses at the edge of the

city will not be the solution for this gargantuan task. According to former Rijksbouwmeester Floris Alkemade this is the time for reinventing the dwellings, the dwelling types, and the living environment: in other words: new experiments3. With my graduation project I wanted to answer to this demand and come up with my own experiment. To extend my own frame of reference and to form a solid foundation for this project, different types of research have been done: anthropological-, case study- and literature research. In the following part the value of these three types will be discussed. And in the last section there will be investigated the balance between research and design and how wellfounded the findings are.

Anthropological research

For the anthropological research we, a group of sixteen students, have analysed six housing projects. With a specific focus on the notion of collectiveness the approach was to learn more about the relationship between architecture and its residents. The investigation forms a correlation between marrying idea with form, allowing us to be critical in analysing if these ideals have been successfully achieved or not. Collectiveness in this report is loosely defined as several persons considered as one group or whole marked by similarity, such as being neighbours, that value acts of community over individualism. Before going into this research, we had to read several pieces of



literature. For me personally the book Lessons for students in Architecture by Herman Hertzberger was the starting point for this research. In this book Hertzberger emphasizes the importance of an in-between zone. By designing conditions for a greater sense of responsibility, an architect can make dwellers out of users. The way to do this is partly by designing the borders of the in-between zone. This public space can then be filled in by private claims of the dwellers. In that way a greater involvement in the arrangement and furnishing of an area can be created. This is also seen in the design of the Justus van Effencomplex. The project showed me how well this concept works in practice and how it can improve the feeling of collectiveness. By first reading about it and after that seeing it work, I was totally convinced to use this for my own design. Similarly, some of my fellow students also analysed the private claims on public space. But in these projects the borders of the in-between zone were not designed clearly by the architect

and therefore it was not working that well in comparison with the Justus van Effencomplex. This only made it more clear for me that a wellfunctioning in-between zone is a must and not something additional. This qualitive research is а combination of ethnographic research and a sort of reversed grounded theory approach. With this last school of thought Groat and Wang underline that the theory must evolve out of the collected data4. In my personal part of the collectiveness research the theory is found previously and after that confirmed by a few projects. In this way the results cannot be seen as totally trustworthy. Besides that, this theory led me to look only on this specific aspect and I forgot to look at the bigger picture. Moreover, I should have paid more attention to our general conclusions and use them for my own design experiment to accomplish the desired level of collectiveness.

Case study research

For this type of research four

different buildings are analysed on four different themes. The social housing projects were carefully chosen based on their characteristic target group: the young urban family. Just as the anthropological research, the foundations have been made earlier while reading specific literature about this target group. The topics that were analysed are: the element of the street in the air, the in-between zone, privacyseparation, and storage. Besides reading about the importance of these themes in different pieces of literature, they were also coming forward by comparing and looking closely to the projects. Even though the projects differ from each other in terms of architectural firm, the building location, or the size; they all did something with these four themes.

This research part set the foundation for my own building experiment. According to Groat and Wang the essence of the case study strategy is its focus on studying a setting or phenomenon embedded in its reallife context5. If I look critical on my way of analysing, this does not guite apply to me. What I did was only pointing out its presence, however I should analyse the embeddedness in a more detailed way. For example, not only pointing out where in the floor plans the street in the air is positioned. But also look closer on its measurements or materiality. Of course, I did use these a while later, but it could have saved me a lot of time doing it previously. Nevertheless, this is also one of the weaknesses of the case study strategy as specified by Groat and Wang. With case studies there is always a richness of multiple data sources, the challenge is therefore to integrate this many data in a coherent wav5.

Literature research

The purpose of this research approach is to identify and analyse

the young urban family by focusing on their history, needs, associated design issues and other topics. For this investigation I used different books and research papers written by various experts on the field of architecture and dwelling. I found out that the young urban family has become a popular topic in the Netherlands in recent years. Nevertheless. useful information for my own design project turned out to be rare. In the end I mainly got my information out of two books (Nestelen in de Stad and De nieuwe generatie stadskinderen) and a few research papers (De Leefwereld van het kind and Het Eengezinsappartment).

In my opinion, the number of used sources for this literature approach is too little. Of course, the given time is not limitless, but still with some more expertise in finding the useful resources it could be improved. It is important in the beginning of this type of research to identify the field you wish to study. This was something which should be reconsidered during the process. In the beginning for example, I specifically looked for literature about the young urban family in the Netherlands. According to Ray Lucas, research does not occur in a vacuum; it is always strengthened by paying attention to the larger debates that frame your work6. In that way, I should for example zoom out more and look more into the young urban family living in other countries, because they do have this living culture. I did touch this topic a little bit, but I could have done more with it. Another way to find more relevant literature about it, could be by zooming in and looking specific on architecture for children. This is what I did more towards the end of the design process because the children became more and more important for the design. Conclusion
In summary, the different approaches of research have provided a good basis for the design of a new building experiment for the young urban family. Nevertheless, the ways of using the different approaches and the final information what is been used could be improved. The difficulty of the design is the ambition to design something new, an experiment. Designing an experiment keeps you from having clear information or literature. Therefore, the information has to come from other, sometimes unexpected. angles. This is something I should have foreseen. After this research set the basis for the design, the extension of my own frame of reference was not stopped. During the design process the research continued by reading different other books and articles and analysing other architectural projects. It is partly because of my perfectionism that I want to fact check everything before designing it. As a result of that, the balance between research and design suggested by Groat and Wang in my own design was okay2. Nevertheless, I want to point out that the research done as described above is not the only form of research which is been used. Although Groat and Wang underline that design and research are relatively distinct domains, they do admit that they share similar qualities7. Similarly, Lucas notions that drawing, diagramming and other forms of graphic representation are a part of design and can also an important aspect of architectural research8. As pointed out earlier, the frame of reference should be used as a source of information and inspiration to be

This last discussion about what is architectural research and the collaboration between research and design is something architecture, as a discipline, often struggles with. In my opinion the research part of this

used in the experiments].

design makes it academic. But how strongly this research led to my final design is debatable. I think this is because I have found myself guilty of cherry-picking. As a designer you are following your intuition, but as an amateur this gut instincts are based on little experience. Experts on the field of architecture and dwelling have a wide frame of reference which they use during the design process9. In that way, they recognize or see certain elements as variants of experiences stored in their unconsciousness. They might think they are following their gut, but they are following their experience. Putting it this way, you could say that architecture students must only follow the results of their research. However, to what extent does this suppress the creative process? And without the creativity, where would be the fun in that?

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#148 Graduation Report

Appendixes Gradsection Report #149

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#150 Graduation Report

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#152 Graduation Report

Teken jouw droomhu

Name YORthe



Net vind ji belanggik bij een hule? Ka 19K d ST Keld KSP 10 July 10 S194 F Kg/kn EA

Hab jo laver een slaapkamer voor jazelf of om met $\underline{V} \emptyset \ \emptyset P \quad \underline{W} \ \emptyset Z \ \emptyset 1 P$

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Hoe ziet jouw favoriete speelplak er ui

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Teken jouw droomhuis	
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Teken jouw droomhuis

Teken jouw droomhuis

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Teken jouw droomhu

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Teken jouw droomhuis	
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Teken jouw droomhuis

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Teken jouw droomh

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Teken jouw droomhuls

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More and your transition operations or with <u>I.M. 2001 UNION ARE PLATSEN CONS.S. 2010 VOLDANIES</u> <u>I.M. J.S.H.ALLER UNIT JULIAN OR JACKEZZ</u>

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Teken jouw droomhuis Name MATTAG

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Report

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