MASTER

(re)form block
urban block housing

Moravec, A.

Award date:
2018

Link to publication
(re)form block

Aleš Moravec
graduatio project Eindhoven University of Technology
Faculty of Built Environment - AUDE 2017/2018
(re)form block
urban block housing

Aleš Moravec
Graduating on 6th of July 2018
Supervisors:
Prof. Dipl.-Ing. Christian Rapp, Dipl.-Ing. Haike Apelt, Ir. Wouter Hilhorst from Eindhoven University of Technology and Prof. Dr. Silvia Malcovati and Prof. Dipl.-Ing. Bernd Albers from Fachhochschule Potsdam
Acknowledgment

I would like to express my gratitude to Prof. Dipl.-Ing. Christian Rapp, Dipl.-Ing. Haike Apelt and Ir. Wouter Hilhorst from the Eindhoven University of Technology for their patience, guidance, useful critique and encouragement. I would also like to thank you to Prof. Dr. Silvia Malcovati and Prof. Dipl.-Ing. Bernd Albers from Fachhochschule Potsdam for their patient guidance and remarks.

My special thanks would go to Ir. Wouter Hilhorst for his extra time he gave me and also for mentoring my journey at Eindhoven University of Technology.

Finally, I wish to thank my family for their support and encouragement which was essential throughout my study. My very last thank would go to Petra Moravcova.

Thank you heartily.
Summary

Housing is one of the key city-making elements and at the beginning of 20th century, Madrid had to deal with poor housing conditions so Zuazo Ugalde developed the project called Casa de las Flores, which is apartment building covering one block in Chamberí district. This type of building was part of the worldwide reformed block movement, which gave the answer to poor housing conditions.

In my thesis, I took the reformed block as the starting point, which expressed certain changed and innovation reacting on contemporary needs. In order to map the development of housing in Madrid 5 blocks were analyzed with the focus on exterior collective space and how they contribute to the urban structure of Madrid.

The intention of this thesis is to design an ideal block which offers good living conditions with pro-urban attitude, initiating interaction between people in the courtyard. Interaction and the possibility of being encounter create collective space.

We live in a world where social contact is less and less common so the proposed building creates a community where social contact is part of communal life. Shared garden, gallery layout and living room attached to the gallery are supporting the collective idea.
Introduction

Cities are growing that is a fact. 55% of people are living in the city today and this number will increase up to 65% in 2050. For my graduation project I would like to explore the growth of Madrid.

For my graduation project I would like to explore the growth of Madrid. I believe a city should develop within their borders as long as possible and their shifting should be a last solution. This means I would like to find the fragile balance between urbanity and nature within the city borders. We have learned a lesson from the past that too much of nature in a city (garden cities) is a utopian idea, however on the other hand overpopulated cities like they were at the end of 19th century is a dystopia.

In my thesis, I would like to develop the understanding of Madrid’s urban block development. Because it seems that Castro plan was the largest and probably the last, coherent, truly urban development, which started in the middle of 19th century and slowly continued at the beginning of 20th century.

As a result of my thesis, I would like to design a block as a house as Casa de las Flores, using the knowledge gained in the analysis. Moreover, as Casa de las Flores was an answer to the poor living conditions, my intention would also be to think about an added value to the block is not just a generic apartment block designed in Madrid. When reading a book called: Our world to change in order to sketch some problems, I realized that the changes or problems, which are addressed in that book are too global and discouraging so they can’t be solved by a building.

Nevertheless, cities or rather buildings are at the end for people so focusing on the living comfort, collective and public space will be essential for me.

Hypothesis:

The perpendicular grid structure is a very liberal way of developing a city, allowing diversity and individuality and is able to react on contemporary issues, however, in Madrid, in a way that the quality of exterior space become dependent on neighbors within the block. This relation resulted in blocks without courtyards, which changed at the beginning of 20th century where blocks were considered as one coherent element, moreover they were built like that.
CHAPTER I

History and background
History of block

Origin

European perimeter block has the origin in ancient times, which can be traced back to Middle Eastern courtyard houses and Roman houses. However, the block urban block we know from most of the European cities is a result of 19th-century city planning until 17th-century city planning was mainly unregulated. However, predominant decisions, which ended in development of perimeter block were taken even before the 19th century.

One of the first actions which influenced the development of block was the project by Christopher Wren for the rebuilding of London after the great fire in 1666. Wren suggested street widening and straightening, which is a prerequisite for grid structures. Even though his ideas were not adopted, they influenced the future thinking. It is important to mention the New Town extension in Edinburgh, which was designed by James Craig in 1780 and completed in 1846. The reason why Craig’s design is so important is the hierarchy of streets he proposed. (fig. 1.1.01) He designed a perpendicular grid structure with streets, roads, and lanes, where the character of places is organized by this hierarchy. Basically the hierarchy, which Craig proposed is an organizing principle for architecture in New Town, however, there is a lesson we can learn from it. (fig. 1.1.02) Even though the plan was carefully designed, he didn’t really consider the context. To certain extent the hierarchy might be designed however from certain point, it’s influenced by the context. In order to be more specific, Craig designed the main axis between Charlotte Square and St. Andrew Square, however, over the course of years Princes Street became the most important and expensive street. The reason for it is simply the fact that it connected the New Town with the harbor.

Perpendicular street-based urban planning (grid planning) played an important role especially during the industrial revolution when urban planners were seeking for fast and efficient means of development. There are some advantages which made grid planning so popular in the 19th century. One of the advantages is the ability to regulate the visual and spatial form of public space, which was a place for public transport and infrastructure (sewerage, electricity and water piping). Finally, it created a hierarchy of spaces, public street, private building and collective courtyard, which was often missing in medieval structure, therefore they might be seen as a bit unorganized.

Urban expansion in 18th and 19th century provided a clear evidence of the dominant function of street-based plans. Those expansion schemes which put the street to the fore also discovered that the appearance and prosperity was greatly enhanced.
Corralas

Court yard apartment houses, which might be considered as predecessors of perimeter blocks, have long historical tradition starting in the 17th century when Corralas were introduced. Corralas are tenement buildings typical for Madrid, designed as corridor houses so courtyards became vital centers of every Corrala (fig. 1.2.01).

Corralas were often built as L, U or O shaped buildings, depending on the context. The oldest Corralas were two-story height, however, they grew up during the time so the most recent ones were up to seven-story height in order to accommodate all the newcomers in the 19th century. Apartments were relatively small compared to contemporary apartments. It was not possible to make them bigger because the only lit side was the one facing a courtyard. Usually, they were only two room apartments, one room facing the courtyard and the other one in the back, which had no light. It is logical that the front room (facing courtyard) is kitchen combined with dining room and living room, whereas the back room was used as bedroom and closet.

Because of the layout and circulation, Corralas formed strong social communities. It was caused not only because of the corridor, which gave them access to apartments but also because of some shared facilities like toilets and laundry. The fact that some facilities were shared and also that there was usually only one staircase servicing the entire building, corridors were busy and lacking privacy. On the other hand, it had a positive effect on the security because the collective space was in permanent use by some of the inhabitants, therefore under control.

By the early 19th century the street was a world of largely masculine display. Middle-class men promenading in their frock coats could admire the finely proportioned facade of the new street. On the other hand, the world of a woman was mainly in the kitchens and basements which faced not the street but the rear courtyard, which had mainly service character at that time. Under the influence of planned street, two parallel worlds evolved to serve the needs of gender: men on the public front and women into the collective backyard.

This division existed on multiple scales so it can be observed in the layout of apartments, therefore living rooms, dining rooms and other representative rooms were facing towards the front on the other hand bedrooms, kitchen and other service rooms are facing the rear. The spatial arrangement of apartments had an influence on the layout of facades, so that front facades are richer and representational but the rear facades reflect functional demands of domestic life.
Reformed block

The dissolution of a city by Avant-garde modernist ideas was just a logical development, according to Walter Gropius who published his article “From block to row” in Das Neue Berlin in 1929. He saw this development as logical in name of better hygiene because cities had significant problems with hygiene conditions at the end of 19th century. Generally, cities had problems with hygiene conditions because of intensive land use resulting in overpopulated, dark districts with poor ventilation. It is the same case in Madrid, where the original blocks with generous collective courtyard were deformed to blocks where spacious courtyards were reduced to patios or ventilation shafts. The solution to this problem already existed, in case of Madrid it was the original Castro block, with its spacious courtyard providing enough light and air to every apartment. At the turn of century a movement, rediscovering the forgotten beauty of green courtyards was formed and it became influencing European architectural scene with reformed block concept. Reformed blocks intended to reform a city instead of destroying it, it was defining public space with meaningful facades and contributing to a lively atmosphere with a mixture of functions. A beautiful example of a reformed block in Madrid is Casa de las Flores (fig.1.3.01) designed by Zuzao Ugalde in association with Hermann Jensen, German architect, in 1930, heavily influenced by the brick expressionism, coming from Amsterdam. 

I live in a neighborhood of Madrid, with church bells, with clocks, and with trees. From there I could see the dry face of Castille like an ocean of leather. My house was called The House of Flowers, for they were geraniums in all parts; it was a beautiful house with dogs and a lot of kids.

There might be a long discussion, which block is the first reformed block ever built. However, it's important to say that reform block is a result of a persistent process, which started at the beginning of 19th century. At that time Berlin had the most densely built residential areas in Europe, however, it also was one of the most pioneering centers for housing reform in terms of better living conditions. Alfred Messel is an important figure at German architecture scene. There were three important projects where he step by step developed the idea of a reformed block. The first project was completed in 1894 at Sickingenstraße and it consisted of two apartment buildings. The second project at Proskauerstraße (fig. 1.3.02) gave a better opportunity to develop his thoughts and ideas because he was responsible for designing a half of a block. The project was finished in 1898 and consisted of 125 apartments, garden courtyard and public facilities like:
restaurante, library, kindergarten and other commercial uses, which improved not only the living conditions in apartments but it also elevated the living standards in the entire district. From 1899 to 1905 Alfred Messel was able to realize the reformed perimeter block on Kochhannstraße and Weisbachstraße.

As mentioned earlier the Casa de las Flores in Madrid might be influenced by German reformed block because of the collaboration between Hermann Jensen and Zuzao Ugalde. Zuzao and Jensen worked together on a design competition for Madrid at the beginning of 20th century. The proposed a possible extension of Paseo de la Castellana, which wasn’t realized at the end. However, Herman Jensen was also an important figure of German reformed block movement. Between 1908 and 1910 he successfully took part in Greater Berlin Competition for models of metropolitan living.

Jensen’s idea was to design coherent cityscape (fig.1.3.03) so instead of dividing the block into houses (optically), he designed simply unified facades which were intended to create “long walls” for the streets. The same intention can be observed in a later project designed by H.P. Berlage for the extension of Amsterdam.

“The housing problem can only be resolved by mass production. In order to find a viable solution one has again to go back to housing blocks but a larger scale”

Berlage’s intention was to design coherent unified blocks where a certain dialogue between picturesque details and the simplicity of whole played an important role. A relevant example is a proposal for the residential block on Museumterreinen in Amsterdam. The same principle might be observed at Casa de las Flores (fig.1.3.03 and 1.3.04). Zuzao tried to avoid any ornamentation while having a coherent design with eye-catching details. In case of Casa de las Flores Zuzao used the potential of brick so he proposed different brick bonding for walls, jambs or entrances.

There is one more thing Zuzao could learn from Berlage and it is the permeability of blocks. For example, the residential block on Museumterreinen in Amsterdam was designed in a way that it allows people to pass through the block where they could enjoy quiet atmosphere inside the block in a restaurant or cafe. Of course one might say that in case of Berlage’s block it was pragmatic decision to design this passage through his block because it was 240m long and blocks in Madrid are maximum 150m long, however, increasing permeability of urban structure for pedestrians is always welcome. Moreover, we all like those informal moments when we can distance from the bustle of a city but still be near enough to experience the benefits.
Urbanity

When we talk about urban block it is essential to have a general understanding of urbanity. Probably every architect or urbanist has his own opinion about what urbanity is and we could write an entire book about it, however, in the end, all the descriptions should have something in common. One possible approach on how to define urbanity might be thought numbers. It can be expressed by density, usually by the density of inhabitants per hectare. The very minimal density for the urban environment is 100 inh/ha. Nevertheless, this number on its own doesn’t say much about urbanity because even residential developments with high density don’t have to be urban. For example, large residential settlements in Eastern Europe, built under the dictate of the communist regime. The problem of those large residential settlements was they were mono-functional, acting as hostels. Those settlements didn’t offer many public facilities, they usually offered just the basic facilities, like groceries and exceptionally schools or libraries. So learning from history we might say that density doesn’t mean urbanity without mixture of functions and variety.

Marcus Fabius Quintilianus describes urbanity as certain behavior and way of communication: “As far as I can speak urbanitas indicates a way of speaking, which in its vocabulary, sound and use approximates and puts on display the specific taste of the capital city. It also functions as the accepted form of communication of the educated, which is the opposite of peasant behavior.” He explained urbanity as space where a specific vocabulary is a form of communication in cultured society.

“What is urban about the city is not the buildings but the space utilization. Buildings are replaceable, the spaces are still there.”

Dieter Hoffmann-Axthelm

We can disagree with this statement because urban space is formed by buildings, which surround it and their content. Buildings are responsible for how we use public space which is related to every building. Bazon Broch says: “Street is not a public space because it isn’t privately owned. A street is a public space because the architecture of the house it defines is conceptualized and built in such a way to address the boundary between public and private.

A conclusion can be made that urbanity / urban space is dependent on the architecture (using the right architectural vocabulary) which forms it, considering social relations, proposing a variety of functions allowing for cultured development.
CHAPTER II

Analysis
In order to map the development of urban blocks in Madrid, five significant blocks (fig. 2.1.01) were selected based on morphological and literature analysis. Every block type was designed and built in different time, therefore, the design was driven by different ideas.

**Type A**

The first block type is original Castro block (fig. 2.1.02 and fig. 2.1.03), which was part of Ensanche, (extension of Madrid) It was designed in the middle of 19th century and built firstly in Salamanca.

Deformed block

This block type evolved as a result of weak building regulations and land speculation and wasn’t driven by an idea. For the purpose of this analysis, we can call it the deformed block. Deformed blocks are blocks which are unevenly parcelled and completely covered mainly by apartment buildings (fig. 2.1.08 and fig. 2.1.09.)

Deformed block offers unacceptable living conditions because courtyards were reduced to patios and light/ventilation shafts, almost denying the essence of Castro block and it’s communal life.

**Type B**

Type B is a block which was entirely parcelled and the decision whether to make a communal courtyard or not was left on the architect of each individual house. So in the
end, these blocks are basically mixtures of type A and deformed block. (fig 2.1.05 and 2.1.06)

**Type C**

This block returned to the essence of original Castro blocks, which means that in the middle of the block is a parcel dedicated to a communal courtyard and the perimeter is parcelled. There was a little deviation from type A so that the courtyard reached the public street on south and north side of the block. (fig 2.1.10 and 2.1.11)

Therefore the block was basically split in half and every half was designed separately as one coherent whole, however, it was built parcel by parcel.

**Type D**

This is the last type, Casa de las Flores, where one block is one parcel, therefore, one building, which consists of a communal courtyard, apartments and commercial spaces on the ground floor. (fig 2.1.16 and 2.1.17)

Basic data like coverage, FAR etc. were analyzed as well as every block was analyzed according to five criteria in order have a comparative conclusion and how they contribute to urban space. Those are the five criteria:

- Entrance
- Circulation
- Exterior spaces
- Vertical communications
- Ground floor use

Also, apartments were analyzed in order to map the development and changes in demography, therefore, apartments were analyzed according to four criteria:

- Apartment orientation
- Entrance
- Exterior spaces
- Sequence of spaces

**Type A - Castro Block**

The first block type is original Castro block (fig 2.1.02 and fig. 2.1.03), which was part of Ensanche. (extension of Madrid) It was designed in the middle of 19th century and built firstly in Salamanca.

The block was designed in a smart way that it had one long parcel in the middle, which was left unbuilt as communal courtyard and the perimeter around the courtyard was divided into even parcels.
Type B - reformed plot block

Type B is a block which was entirely parcelled and the decision whether to make a communal courtyard or not was left on the architect of each individual house. So at the end, these blocks are basically mixtures of type A and deformed block.
Deformed block

This block type evolved as a result of weak building regulations and land speculation and wasn’t driven by any idea. For the purpose of this analysis we can call it deformed block. Deformed blocks are blocks which are unevenly parcelled and completely covered mainly by apartment buildings (fig. 2.1.08 and fig. 2.1.09.)

Deformed block offers unacceptable living conditions because courtyards were reduced to patios and light/ventilation shafts, almost denying the essence of Castro block and it’s communal life.
Type C - Semi reformed block

This block returned to the essence of original Castro blocks, which means that in the middle of the block is a parcel dedicated to communal courtyard and the perimeter is parcelled. There was a little deviation from type A so that the courtyard reached the public street on south and north side of the block.

Therefore the block was basically split in half and every half was designed separately as one coherent whole, however it was built parcel by parcel.
**Type C - Semi reformed block proposal**

This is unbuilt proposal for a block (fig. 2.1.13 and fig. 2.1.14). The built version was mentioned above (fig. 2.1.10 and 2.1.11), however this proposal is included in the analysis in order to demonstrate ideas which drove the design.
Type D - reformed block

This is the last type, Casa de las Flores, where one block is one parcel therefore one building, which consists of communal courtyard, apartments and commercial spaces on the ground floor.
Entrances

Entrance analysis showed that all the block types have access to apartments from the street, however, two distinctions can be made. The first one is most visible in two oldest types, type A and B. The entrance to those buildings is guided through a threshold space, which creates a smooth transition between street - public space and the apartment building - private space.

In case of type A, the front door of the building leads to an exterior corridor, which can not be observed in any other types however it might have historical relation to medieval apartment buildings.

On the other hand type B creates a threshold space, which is still part of a street, however, suggest the transition from the public towards private. A similar principle might be seen in case of Casa de las Flores - type D.

Type C has very straightforward entrance. From exterior directly into the interior, however, it also offers an opportunity to enter the building from the courtyard. Nevertheless, it is not obviously a primary entrance route. Type D combines some principles from type B, as mentioned above and type C.
Fig. 2.2.02  Type B - Ground floor - Entrances

Fig. 2.2.03  Type C - Ground floor - Entrances
Circulation

In general, we might say that types A, B, and C have very similar routing through buildings; however what is more interesting is the sequence of spaces. Courtyards and patios play the most significant role in this sequence of spaces - routing. In order to get from the front-most parts of layout the courtyard or patio act as an intermezzo in the building. Unfortunately, the importance of these spaces decreased during the time and in Casa de las Flores - type D, courtyards, and patios are excluded from routing completely.
Exterior space

In case of Madridian blocks, we can distinguish two types of exterior spaces inside the block. The fist is a patio and the second one is a courtyard, there might be one more a light/ventilation shaft, however, I would like to exclude ventilation shafts from my research because they are not designed for people to enter them. Moreover, they offer the least quality exterior space. The distinction I made between them is based on the perception of space, quality, and proportion of space.

We might see a trend in the development of collective exterior space. Whereas tape A kept the collective courtyard in the middle of a block, types C and D the collective space got fragmented and shifted towards the public space.
Vertical communication

The purpose of this analytical layers has a connection with routing and sequence of spaces it creates. The most significant example is type C where we can see two almost identical buildings in one block, however, the difference is in the number of vertical communications, which has a direct impact on the sequence of spaces and a certain richness.

The building on the north of the block has two vertical cores where one can be reached only through a courtyard which is more traditional way, inspired by historical apartment buildings. While on the other hand, the building on the south of has only one vertical communication which is accessible directly from the street, which means that courtyard (in case of this building more of a patio) is excluded from natural circulation in the building and became a destination place.
Chapter II - Vertical communication

Fig. 2.5.03  Type B - Axonometry - Vertical communication

Fig. 2.5.04  Type B - Ground floor - Vertical communication

Fig. 2.5.05  Type C - Axonometry - Vertical communication

Fig. 2.5.06  Type C - Axonometry - Vertical communication
Fig. 2.5.06  Type C - Ground floor - Vertical communication

Fig. 2.5.07  Type C - Axonometry - Vertical communication
Ground floor use

As Leon Krier (fig. 2.6.01) and Wolfgang Sonne01 said, the ground floor is important, especially when we talk about urbanity and public space, therefore I found it interesting to analyze the use of ground floor in order to observe how is the building communicating with street and what can it offer to pedestrians. Leon Krier explicitly said that he admits only one type of zoning, the vertical zoning. Which means that the ground floor belongs to the public and the floors above should be public.

If we accept Krier’s and Sonne’s logic and have a close look at Madridian blocks we can observe certain development. Type A, which represents the oldest example is purely mono-functional or it was at least designed as mono-functional, while on the other hand type D was designed with the ground floor, which is exclusively dedicated to commercial use.

I see a certain advantage in this approach, not only because it contributes to the street and public space but it also solves a security question of ground floor apartments. The development of block from mono-functional towards multi-functional block goes hand in hand with the fact for whom the block/building was designed.
Chapter II - Ground floor use

Fig. 2.6.02 Type A - Ground floor - Use
Commercial use
Residential use

Fig. 2.6.03 Type B - Ground floor - Use
Commercial use
Residential use
Apartments

Size of apartments changed significantly over the course of years. The apartments from 1930s are much smaller (90 - 45m²) compared to those from the 19th century, which were around 280m². On the other hand, exterior spaces like loggias and balconies grew in size.

This phenomenon goes hand in hand with demographical changes. Apartments in the 19th century had around 8 bedrooms in order to accommodate a large family and usually a maid. Families got smaller so apartments from the 1930s have 2 to 4 bedrooms, which is similar to the contemporary situation.

The fact that apartments got smaller influenced their orientation. Apartments in Castro block were usually oriented towards street and patio, two sides oriented. However, apartments from the 20th century are because of their size, one side oriented. So they face street, patio or courtyard but rarely both. It decreases the quality of urban life because the urban life is happening on the street. As we learned from Corralas the courtyard was a place for informal, communal, everyday life, while the street is the place of cultural and social life. Brian Edwards explained this situation in his book: “Courtyard housing” as two worlds.

The street is the world of men and courtyard is the world of women, therefore, all the “women rooms” (kitchen, bathroom and pantry) are oriented towards, courtyard so they can supervise children playing outside when cooking for example. Some may consider this reasoning a bit sexist and inappropriate however the quality of an apartment which is oriented to two sides is undeniable. We can relate it to Tucholsky’s idea of a house, which front is on Friedrichstraße and the backyard is facing the Baltic sea.

Fig. 2.6.06 Type D - Ground floor - Use

Commercial use
Residential use


Kurt Tucholsky (1927). The ideal
Block type A - Apartment

Fig. 2.7.01  Type A - Apartment - basic plan

Entrance

Fig. 2.7.02  Type A - Apartment - exterior space

Balcony/ loggia

Fig. 2.7.03  Type A - Apartment - room types

Female rooms
Male rooms
Chapter II - Apartments

Block type B - Apartment

Fig. 2.7.04 Type A - Apartment - basic plan

Fig. 2.7.05 Type B - Apartment - exterior space

Fig. 2.7.06 Type B - Apartment - room types
Chapter II - Apartments

Block type C - Apartment

Fig. 2.7.07  Type C - Apartment - basic plan

Fig. 2.7.08  Type C - Apartment - interior space

Fig. 2.7.09  Type C - Apartment - room types

Entrance

Balcony/ loggia

Female rooms

Male rooms
Block type C - Apartment

Fig. 2.7.10 Type C - Apartment - basic plan

Fig. 2.7.11 Type C - Apartment - interior space

Fig. 2.7.12 Type C - Apartment - room types

- Balcony/loggia
- Female rooms
- Male rooms

Entrance
Chapter II - Apartments

Block type C - Apartment

Fig. 2.7.13
Type C - Apartment - basic plan

Entrance

Fig. 2.7.14
Type C - Apartment - interior space

Balcony/ loggia

Fig. 2.7.15
Type C - Apartment - room types

Female rooms

Male rooms

84
Block type D - Apartment

Fig. 2.7.16 Type D - Apartment - basic plan

Fig. 2.7.17 Type D - Apartment - exterior space

Fig. 2.7.18 Type DC - Apartment - interior space
Chapter II - Apartments

Block type D - Apartment

Fig. 2.7.20 Type D - Apartment - exterior space

Fig. 2.7.21 Type DC - Apartment - room types
Chapter II - Results

Results

The analysis shows differences and similarities between blocks. It is apparent that block is Madrid went through a significant development in 19th century and beginning of 20th century. (fig.2.8.01 and 2.8.02)

According to the analysis we can distinguish groups of blocks. The first one is driven by a binding idea, which guarantees qualitative collective space and together with well designed private apartments it creates a good urban housing. In case of the second group is simply lacking the binding idea, resulting in a generic block with speculative living conditions. (Fig. 2.8.03)

Block types A, C, and D belong to the first group, however, in case of block type C, it might be a bit ambiguous. Block type C consists of two parts with a collective courtyard in the middle. Originally each part was designed as one coherent building and they were parcelled and built one by one. One half of the block was built according to the design, however, from the second half only one building was built. Nevertheless, the building was designed in a way that quality of courtyard is independent on the neighbor (to a certain extent). (fig. 2.8.04)

Block type B recreated the original Castro block - type A, however in a different way. Instead of making the communal courtyard on a separate plot in the middle and building dwellings around it, the entire block was parcelled and the courtyard is part of a design of the individual dwelling. In this case we can talk more about a building type then block type, however together it forms specific block type. The dark side of this block type is that everyone in the block has to build the same building type in order to get the quality. (fig. 2.8.04)

We can conclude that blocks that are designed and built as one building, perform better in creating fine exterior space, moreover, they are integrated better to urban fabric because of their pro-urban attitude on the ground floor. Nevertheless, the potential is not fully used because as we know from the circulation analysis, courtyards were inevitable parts of circulation but in case of Casa de las Flores this phenomenon changed and the courtyard was excluded from daily circulation.

Which contradicts the fact that Casa de las Flores introduced new open form. The building consists of two identical buildings, where the courtyard is in the middle, cutting through the entire block - reaching the public street on north and south.

It almost suggests a new sequence in which inhabitants should enter it. From the public street, entering collective block (courtyard) and from the courtyard enter the building. Nevertheless, Casa de las Flores has a traditional entrance directly from the street so the open courtyard creates at least an intermezzo in the block structure.

Fig. 2.8.01 Block comparison

<table>
<thead>
<tr>
<th>Original Castro Block</th>
<th>Deformed Block</th>
<th>Reformed Plot</th>
<th>Semi-Reformed Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlos María de Castro</td>
<td>Antónimo Pedro Mattef Rodríguez</td>
<td>Jose María Anitelle de la Vega</td>
<td>Secundino Zuazo</td>
</tr>
<tr>
<td>block coverage: 70%</td>
<td>block coverage: 91%</td>
<td>block coverage: 74%</td>
<td>block coverage: 81%</td>
</tr>
<tr>
<td>plot coverage: 87%</td>
<td>FAR: 4</td>
<td>plot coverage: 63%</td>
<td>plot coverage: 61%</td>
</tr>
<tr>
<td>ground floor use commercial: 0%</td>
<td>ground floor use commercial: 0%</td>
<td>ground floor use commercial: 0%</td>
<td>ground floor use commercial: 10%</td>
</tr>
<tr>
<td>residential: 87%</td>
<td>residential: 86%</td>
<td>residential: 87%</td>
<td>residential: 78%</td>
</tr>
<tr>
<td>communication: 13%</td>
<td>communication: 14%</td>
<td>communication: 10%</td>
<td>communication: 12%</td>
</tr>
<tr>
<td>exterior space</td>
<td>patio: 100%</td>
<td>patio: 10%</td>
<td>patio: 40%</td>
</tr>
<tr>
<td>patio: 39%</td>
<td>garden: 61%</td>
<td>garden: 60%</td>
<td>garden: 60%</td>
</tr>
</tbody>
</table>
Fig. 2.8.02  Block comparison

Private  Collective  Public

Fig. 2.8.03  Exterior space quality

Light/ventilation shaft  Patio  Courtyard/garden

Fig. 2.8.04  Dependency on neighbours

Plot division  Built according to plan  Neighbours
CHAPTER III

Concept
All over the world, we observe a trend towards pedestrianization of whole districts in order to push the individual car transport out from city centers and Madrid is not an exception. The reasons for doing it are obvious and even Camillo Sitte described this phenomenon in his book: City planning according to artistic principles. He says:

“Orthogonal street structures are dedicated only to transport not to art. Therefore it can’t be perceived by senses and observed only on a plan.”

Camillo Sitte called for public space, which wouldn’t be not totally exposed to traffic. Squares should be formed by building not by roads. Parks should be protected by buildings because that is the only way how to keep all the negative aspects of traffic away from people in a park.

“Madrid has banned most traffic from certain streets and soon the car-free zone will expand even further... Transforming just a few streets will hardly make a big difference in terms of congestion, pollution, safety, public health economic benefits and public space. To make walking part of a daily routine we might need a full pedestrian network, which would contribute to the means of transport across the city.”

This quote may open up a debate about the entire Ensanche of Madrid (Castro plan extension), which is probably happening; however, the focus of this thesis is the block itself and how it can contribute or not to the urban puzzle. Together with findings from the analysis, it opens up an opportunity to redefine the boundary between public street and collective courtyard while keeping the urban intermezzo experience from Casa de Las Flores and also considering the trend towards increasing permeability for pedestrians.
Unfortunately, pedestrians were a bit underestimated in last century, especially in the 50s and 60s when modernist ideas flooded cities and block structures weren’t resistant enough. As Camillo Sitte stated: “Orthogonal street structures are dedicated to only to transport...” In this case, it would be interesting to compare orthogonal street structures with medieval organic structures from pedestrian and driver point of view.

In order to illustrate this car and pedestrian movement comparison in Madrid, we can have a look at diagrams (fig. 3.1.01 and 3.1.02). Two fragments with 800m in diameter, representing each urban structure were selected. The diameter of 800 meters was chosen because of Jan Gehl, who stated that reasonable walking distance is 400m, which takes around 10 minutes to walk.

The difference in permeability of those two structures for each means of transport is visible. When we have a look at the medieval city and the route pedestrians and cars have to take we can see that the route for cars is longer compare to the route for pedestrians, on the other hand in Castro plan those two routes for cars and pedestrians are almost identical. According to his observation, a conclusion can be made, the medieval structure is more permeable for pedestrians then grid structure. Moreover, we might conclude that medieval structure incites to more natural movement than in perpendicular grid where the movement might be considered as artificial.

The question for the design to solve is how to increase the permeability for pedestrians in Chamberí, capturing the urban intermezzo experience offered by Casa de las Flores as well as solving the boundary between public and collective space with urban attitude.

Concept

Probably the easiest solution in order to increase the permeability would be downsizing of blocks, which Leon Krier describes in one of his drawings (fig. 3.2.01). He says that traffic can stay in the existing streets and new streets, which will be made by cutting the original block into four smaller blocks will be dedicated to pedestrians only. We have to be a bit critical to this approach because when downsizing a block the quality of communal courtyard decreases, which is not desirable. Therefore the courtyard needs to have certain proportions in order to keep the quality of exterior space.

In order to demonstrate what would happen with the courtyard, I made a series of diagrams (fig 3.2.02). A convenient depth of apartment building (where every apartment are oriented towards street and courtyard) is around 14m. The diagram shows that the courtyard is affected significantly when downsizing the block while keeping the width of a perimeter.

When we focus on the last diagram, where the original block is divided into four smaller blocks, we will see that the size of each is almost identical with the size of Corralas (Madridian apartment building from the 18th century). In that case, we talk more about patio house then a block. The ideal solution lies in the combination of several block and building types together because every type has certain advantages and disadvantages.
Perimeter block allows two-sided orientation of apartments, however, it is unable to create the connection between public and collective, which Casa de las Flores is. On the other hand, the architectural elements which are used in order to define the border between collective and private space are from a rural vocabulary of architectural elements.

The diagram (fig. 3.2.03) shows the fusion of perimeter block with Krier’s block - permeable perimeter block. This hybrid also offers a way how to define the border between collective and private. It can be solved by vertical zoning (fig. 2.6.01). Practically it means that the passageway stays at the same level as the public street and collective courtyard moves up on the top of buildings that form the passageway.

This concept improves the way how courtyard is used during the day. Most of the courtyards in Madrid are used as car parks or as warehouses for various business, so they don’t have the quality of exterior space as Casa de las Flores. From the economic point of view, it is understandable however due to technological progress we can expect autonomous cars very soon and cars will become more of a service than a property as we know it today. As a result, the courtyard will be free from cars, leaving more space for people. Nevertheless, even courtyards like the one in Casa de las Flores are not used effectively the entire day.

During working days the majority of residents is at work so the residential block as the case may be courtyard is basically empty. By placing public buildings like kindergartens, libraries, community centers or small offices we can create courtyard which is vivid the entire day.

Moreover it would co-exist with the passageway, nevertheless, it is not a groundbreaking idea. We can find this solution in the south extension of Amsterdam, proposed by H.P. Berlage or in Bullingerhof in Zurich and 8 house in Copenhagen.
Location

Based on the basic analysis and observation, it becomes evident that deformed block type has the least quality of collective space because it doesn’t offer any. As a result of the missing courtyard, the quality of life in those blocks is decreased because of lack of air and light.

There might be a long discussion about the quality, however, if we compare Casa de Las Flores and a deformed block the difference is clearly present.

Based on this conclusion, the deformed block was considered the least valuable. An example of this block type in Chamberí district is a block which is bordered by Calle de Fernández de los Ríos from the north, Calle de Fernando El Católico from the south, Calle Gaztambide from the west and Calle Andrés Mellado from the east.

With all the respect for historical value, for the purpose of this graduation project, the block will be demolished, leaving the free 100x80m parcel. (fig. 3.3.01)
Circulation

Based on the analysis we can conclude that courtyards and patios were inevitable parts of circulation in Madradian blocks, moreover because they were part of everyday routine. It naturally increases the possibility of social contact, which makes the difference between a courtyard and collective courtyard that is part of the house, not just a space in the back of your house.

“Yes, it is social contact that turns collective space into social space. What we need to find our space forms that are so organized that they offer greater opportunities and cause for social contact. Spaces that enlarge the chances to encounter and have a catalyzing effect on seeing and being seen, and so contribute to expressing what it is that brings people together; in short, they should provide the thing that makes us seek out the city... What we are advocating is that buildings that are used collectively in some degree are organized more like cities. The underlying argument is that though they are not actually public, the function in a particular sense as a part of the city - much more so than, say, a dwelling-house.”

Based on this knowledge, entrances to apartments were placed in the courtyard in order to enlarge the chance to encounter. (fig. 3.4.01) Entrance hall continues with staircase, joining gallery on every floor, from which individual apartments are accessed. The gallery is wide enough (2.5 - 3.5m) to become a collective street as in Spangen in Rotterdam where social activities like chatting, drinking coffee or playing chess can take place. Block have enough vertical communications so the galleries are used equally so inhabitants are not disturbed by others, passing by in front of their windows.
This concept might raise a question about privacy, which was a big issue in corrales. However, the block has eight vertical communications, which guarantee moderate traffic on the galleries. Moreover, galleries are 2 - 3.5 meters wide, which provides enough space for people to pass and also perform basic activities. The gallery offers a space where inhabitants can extend their apartment in order to create a certain buffer space between collective and private. (fig. 3.6.02)

Apartments

The newly proposed block consists of 200 apartments which size varies from 55m² one bedroom apartments to spacious 145m² three bedroom apartments. There are four apartment types offering accommodation from single person to family with up to 5 children which provides social mixing preventing conflicts. The analysis shows that in case of apartments which are oriented to the street and to the courtyard, rooms are oriented according to their use. As we already know from previous chapters, it might be explained by a male gender dominance in past. However, this is unacceptable nowadays.

In the proposed block apartments are oriented to the gallery - courtyard, and street, with an exception in the corner. The corner apartment is oriented towards two streets. Every apartment can be divided into three zones: day zone - collective (kitchen and living room), service zone (toilet, bathroom, and storage) and quiet zone - private (bedroom). This zoning is strengthening the concept of collective galleries and collective courtyard because collective rooms are oriented towards the gallery and bedroom towards the street. (fig. 3.6.01)

Passageway

The passageway is designed so the block structure in Chamberí become more permeable for pedestrians reacting to the context and orientation so it connects to already existing Travesía (passageway) de Andrés Mellado. Moreover, it creates the urban intermezzo described in case of Casa de las Flores, where the courtyard atmosphere is partly present in public space which contrasts with the labyrinth-like perpendicular block structure and the public streets it creates. It is designed with the ambition to have a tranquil urban character in order to preserve the quality of collective courtyard.

A special attention was paid to the selection of functions, which are accommodated along the passageway. Functions (fig. 3.5.01) which mainly require quiet and focused environment like a library, co-working space and nursery were chosen. These functions are more of destinations, people visit them because people know about them. They don't need to be directly present on a public street in order to exist but they need to be in the city in order to make the city. On the other hand, commercial spaces were placed on the outside of the block, facing street in order to coexist with it.

The analysis shows that in case of apartments which are oriented to the street and to the courtyard, rooms are oriented according to their use. As we already know from previous chapters, it might be explained by a male gender dominance in past. However, this is unacceptable nowadays.

In the proposed block apartments are oriented to the gallery - courtyard, and street, with an exception in the corner. The corner apartment is oriented towards two streets. Every apartment can be divided into three zones: day zone - collective (kitchen and living room), service zone (toilet, bathroom, and storage) and quiet zone - private (bedroom). This zoning is strengthening the concept of collective galleries and collective courtyard because collective rooms are oriented towards the gallery and bedroom towards the street. (fig. 3.6.01)
Chapter III - Apartments

Fig. 3.6.01  Apartment zoning

Fig. 3.6.02  Buffer space

day zone  service zone  quiet zone
Facade

Facade design is mimicking the classical facades in their vertical division (plinth, body, and crown). However not by ornamentation or by a classical language of cornices but it uses two types of concrete cladding and ceramic cladding (fig. facade detail) in order to achieve it.

Window frames and decorative stucco framing around them is significant for Madrilian apartment houses. The intention is to interpret it in a more abstract way, using local Madrilian ceramic.

The block is 100x80 meters, which leaves long facades that are horizontally rhythmized by loggias and above-mentioned window frames in upper floors and by entrances in the ground floor. (fig. 3.7.01)
CHAPTER IV

Reflection
Reflection

Almost 55% of people live in cities and the number will grow. Castro plan was the biggest comprehensive extension of Madrid, which gave a home to thousands of people that were accommodated in those blocks.

This project focused on one particular block type - reformed block represented by Casa de las Flores in Madrid. Reformed block brought new ideas into block typology, first of all, reformed blocks were usually built as one building, which reveals new possibilities in terms of variety of functions and overall interaction with urban structure.

Madrid is a very complex organism and blocks are inseparable elements of this urban organism. Dieter Hoffmann-Axthelm said: “What is urban about the city is not the buildings but the space utilization. Buildings are replaceable, the spaces are still there.” Here lies the essence of reformed blocks, which are designed and built as one building, it’s because they create a stronger relationship between space and building through a hierarchy, density, and variety.

The question is what spaces have been designed in modern extensions like the one in Las Tablas or Mirasierra district in Madrid? Are they still urban? Is urban block dead urban typology for future city extensions?

114
Bibliography
Introduction


02 Kurt Tucholsky (1927). The Ideal

03 Hans Schmidkunz (1908). Städtisches und ländliches Wohnen. Der Städtebau


Chapter I


06 Wolfgang Sonne (2009). Dwelling in the metropolis: reformed urban blocks 1890 - 1940 as a model for the sustainable compact city. Dortmund, Germany: Elsevier. pp.52


12 Marcus Fabius Quintilianus (1972). Institutionis Oratoria Libri XIed. by Helmut Rahn. Darmstadt, Germany pp.720


Chapter II


Chapter III


02 Camillo Sitte (1965). City planning according to artistic principles. London, UK: Phaidon Press pp.80


Chapter IV


Appendix
Ground floor
West elevation
Apartment Type A
Apartment Type D