Tracing Scopes of Action: Design Principles to Approach the Complexity of the Urban Block

Along Case Studies in [Paris]

EMU thesis
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>What are cities, built without the wisdom of its citizens?<
  >Was sind schon Städte, gebaut ohne die Weisheit des Volkes?<
  
  Bertolt Brecht, 1953
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Introducing And Framing The Objectives

Motivation, Objectives & Problem-field
During the last two years of EMU a variety of issues were touched and worked on in an intriguing international environment as the forum of inspiring discussions on the future of the world’s different territories. Being European my focus of work is on the European territory with an interest in finding a sustainable way of shaping our urbanized environment.

The thesis deals with the spatial properties that establish a structure within the urban tissue, which provides conditions to absorb a variety of uses with an immediate possibility for people to act.

A consequence of this lack of conditions can be seen in the appearance of squatting movements that take place in European cities. Originated in the 18th century as a name for people who settled on land without legal permission, the squatter – movement today is as a way of re-appropriation of territory - an act to re-claim a territory. It can be seen as making accessible, what is underlying completely different processes. As Smith (1996) states in ‘The new urban frontier’, global companies and wealthy population leave their mark on the production of space.

Social segregation in addition is a general tendency in the European territory. Inhabitants with lower and middle income are forced to move to the periphery of the densely built-up, well served with all kind of infrastructure, mostly historic city cores. “Global acting companies and wealthy population are dominating central areas; transform them into privileged spaces of production, of living and of consumption, whereas poorer social groups are relegated to the peripheral areas. (see Smith, 1996)” Urban transformation accompanying gentrification processes often reduce scopes of action for less privileged inhabitants as well.

Within this context it gets harder for low income population to participate actively in urban life, be it living or working inside the dense city, currently growing unemployment makes the situation even worse. A significant group is the immigrants, as the latest report of the Council of Europe (2004) on recent demographic development points out that the dominant growth factor of European cities is migration, whereas natural population growth came to a still-stand.

Even though affordable dwellings are a basic need to be provided, the space for facilities that enlarge the possibilities for a person or community besides housing is even less, because of the high pressure on land in the city cores with their aim for high profit. Following this, the available space that provides scopes of action, which allows to be self-organised, is rare. Activities like crafts, small-scale-manufacturing, or other micro businesses need space inside the dense cities too, as they are part of the local layer in the globalized urban territory.

Aim of the thesis
The general aim of the thesis is in a first step to find the existence and location of the spaces that provide these scopes of action and in the following as main research question what are the spatial characteristics that provide conditions for micro-businesses and workshops.

The thesis is a first step of a PhD work, it concentrates on the urban block as a first typology to investigate. The block is chosen as starting point for three main
Introducing And Framing The Objectives

reasons: First, it forms major parts of the cores of the European cities, therefore a further re-use and partly refurbishment of the block-substance is a contribution to a sustainable urban development. Second, the urban block is a typology which has undergone numerous stratification processes and changes over time and along socio-economic changes. Third, the scopes of action are an integral part of the block’s original concept.

The more concrete aim of the thesis is, to find principles for design that can incorporate conditions into urban development plans concerning bottom up scopes of action, formally as well as informally done, and not the rebuilding of a historic urban image. The thesis visualizes the relations between the morphological parameters and the existence of micro-businesses and workshops. This enables to develop a set of design principles that can be used by designers or developers to incorporate conditions for the micro-businesses and workshops. In a following phase of PhD additional case studies allow a refinement of the principles and probably will add additional principles or modify the so far developed ones.

The first part of the thesis is providing the theoretical background for the case study research in the following chapters. On the one hand the theoretical framework is clarifying the approach of space and the performance objective and on the other hand the existent research on the urban block as the typology of this research.

Following, the case study blocks are presented, edited after fieldwork according to the performance objective. In a next step the findings from fieldwork are abstracted along the parameters of research, which combine the theoretical part with the practical fieldwork and highlight, if there are ranges within one parameter which support the facilities for micro-businesses for trade and sale as well as workshops for small-scale-manufacturing, crafts and artists. Relating the parameters to each other unfolds one of the key aspects of this research: There are many morphological parameters involved in the complex system of an urban territory, in this specific case in the urban block, but only the combination of many factors together can support a certain need or prepare conditions for the tissue to be able to absorb a variety of uses. Finally, the resulting relations between the parameters lead to design principles, which refer mainly to the performance objective of this thesis, but already give an idea about general design principles for the urban block, which will be elaborated in a following PhD phase. The conclusions are reflecting on the potential of designing in rules and principles, which fixes only certain, in this case morphological, properties, but provides at the same time a space in use that is flexible and consists of enough porosity or vagueness for the emergence of new uses, the absorption of alternating uses and changing societies. Finally a reflection on the role of the urban block is done which represents an alternating understanding of what is a block to the physical definition done in the beginning of this research.
The goal of the thesis is to develop design-principles, rules that can be incorporated in urban development plans. The thesis deals with the typology of the urban block in Paris as reference typology for in a following PhD work done comparative case studies, whereas the performance objective of the thesis research are facilities to run a business for low income population, micro businesses for trade and sale, small-scale-manufacturing and crafts as well as workshops for artists.

The approach of the thesis is morphological, the performance objective is socio-economic. The physical/spatial conditions in the urban context are considered to be more stable than socio-economic conditions, therefore urban morphology is the field the research questions are related to. The morphological approach is used to investigate the blocks and their spatial characteristics embedded in their specific context.

The process. The thesis is a theoretical research that has two major fields of input: the existent body of knowledge and the insight gained from the interpretation of the fieldwork. The existent body of knowledge represents the basis for gathering information during the fieldwork, whereas the fieldwork continuously makes the used existent body of knowledge more precise. In this way the process of the thesis is an iterative one, where the parts make the whole clearer in permanent interaction. This also means that both parts are carried out during the whole process of the thesis.

The two main methods used are literature research to frame the theoretical background of the body of knowledge and case study research with emphasis on fieldwork to gain knowledge on site concerning specific issues. During the whole process the use of parameters is a main tool to relate the literature research with the knowledge gained by case study research. Several other tools like photography, GIS, Spacemate, Depthmap are used to visualize specific values or characteristics during divers parts of the process and are explained as part of the main methods and tools. The field trip allows on-site case studies, according to the pre-defined parameters on the levels building/plot/block/urban tissue. The fieldwork is an important method to verify plan material, research the actual existent spatial properties not visible in the basic digital available maps and to let space for unforeseen investigation, that occur during on site observation. Qualitative remarks are gained by conversations with inhabitants/users of an area and tell micro-stories within a bigger context that allow conclusions on the existent spaces of intervention for the inhabitants within a block.

The comparisons of the blocks visualize relevant spatial characteristics that influence scopes of action. The conclusions from literature review and fieldwork are gained by abstraction, relation and interpretation of the findings and enable the definition of design principles.

The overall process of the EMU thesis is embedded in a wider concept that puts the thesis as first step in a possible PhD work. The role of the EMU thesis in that context is to set the frame and make the methodology clear for an in-depth research afterwards.
Urban structures and typologies that already proved to be adaptable to socio-economic changes, have a high potential to cope with future changes.

The scope of action is pre-defined by the morphological properties of the block.

The combination of specific morphological properties organizes the physical space that enables complexity in the urban block.

The scopes of action require a space along the interface of public & private, outside & inside.
What are scopes of action?

Which morphological properties of the urban block influence the conditions for various scopes of action?

What are the relations between the single morphological properties that enhance the possibility for scopes of action?

How is the exchange of the public / private, inside / outside organized that allows scopes of action?

How can the relations of the morphological properties be transformed to design principles?
Städtebau ist Erinnerung (1993)


City centre blocks and their evolution: A comparative study of eight American and Australian CBDs

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DE TRANSFORMATIE VAN HET HOLLANDSE BOUWBLOK IN RELATIE TOT HET PUBLIEKE DOMEIN; MODEL, REGEL EN IDEAAL

Susanne Komossa

Stadtmorphologie

Enrich Keith

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Theoritical Background

The typology of the thesis is concerned with the European urban block. As basis for the following research, a literature review of the existent research on the urban block is done. Most of the research was motivated by the intention to find solutions for either elements of the urban fabric, like the block, or the urban tissue in a wider context that can cope with changing needs. The case studies described by the researchers in the literature are further reference cases concerning the shaping of conditions with focus on the issues of formal and informal, the changing role of inside and outside as well as the scopes of action for people.

Physical definition of a block

First, a definition needs to be done on what is a block for the case studies taken for this thesis. Starting from the block being an area of land surrounded by public streets, this definition had to be modified during fieldwork and literature studies. Inner streets, which sometimes are permanently public accessible, are appearing quite regularly in recent as well as in historic built urban tissues. From this, following concluding interpretation is done on the type of street which is not considered as ‘the block surrounding’: All streets, which are entering as well as leaving the block perimeter, but are running through the built mass and are not broader than six meters, which equals a one lane street. Further these streets are always on the level of the inner space of the block as well as the sidewalk instead of the public streets surrounding a block. A second issue is the appearance of the block’s perimeter. As the objective of the research had to be reduced to a feasible issue, the primarily closed block is the issue in focus, whereby a primarily closed block was fixed with a block perimeter accompanied by buildings for a minimum of 75% of total length.

Summarized, the definition of which characteristics are describing a block is following: The perimeter of the block is accompanied by buildings at a minimum of 75%, the block is separated from other blocks through streets that build a network on the same level.

Literature review of existent research on the urban block

The main input is derived from block research in Europe, additionally two non-European researchers were taken into consideration too. Jane Jacobs (1961), who was one of the first to write, among other things, about the urban block. Her work is important to this thesis research, because she combined her observations on the urban built material with economic processes and the everyday life of the people. Arnis Siksna, an Australian researcher does studies on the urban block in Australia and North America, with the interest if certain block forms and sizes contribute more to the adaptability of central urban fabrics and to find block forms with predictable performance characteristics. Generally said, even though the initial layout can always change, where the different elements of the fabric are adapted to new development, “some initial lot forms and block structures assist certain directions in the evolution of block structures and fabrics, while others may hinder them”. “Thus, the presence of through-lots makes it easy for each owner to insert arcades or alleys, whereas back-to-back lots make this difficult” (Siksna 1998).
Studies on the improvement of the 19th century fabric were done by Josef Paul Kleihues in Berlin in the 1980s, and are still done mainly by Erich Raith in Vienna since the 1990s. Kleihues invented the term ‘kritische Rekonstruktion’ in Berlin, which described the approach to urban design in the re-building phase of Berlin after the Second World War. The interest in the urban block as ‘analogy, which makes the pulse of [everyday] life and the metrical properties of urban space comparable’ (original citation: “die Analogie, die Lebenstakt und Metrik des städtischen Raumes vergleichbar werden läßt”) (Kleihues 1993: 327), initiated a re-thinking of the use of the urban block as element of the urban fabric. Kleihues critized the block, even though it performed well in terms of functional mixture, concerning its appearance, a repetition of similar urban material (ibid). The ‘kritische Rekonstruktion’ aimed to produce blocks featuring mixed uses as well as differentiated urban form. The role of the block in his research can be interpreted as a mediator between the city and the building, as the part that makes the city a coherent entity, but at the same time allows new experiments within the block. The goal was not to destroy what remained after the WWII, but to search for a form that was positioned between tradition and modernity, with scepsis towards ‘blind admiration of history as well as enthusiastic invocation of the future’. (ibid: 328) (original text: träumerischer Zukunftsbeschwörung wie blinder Geschichtsverehrung).

The research in Vienna is part of general typo-morphological studies on Vienna and contributing to the debate on how to deal with the existent 19th century issue, mainly composed by perimeter blocks. The question of research is which parts of this issue, respectively the block are worth keeping, which are the weaknesses and what can be possible solutions to enhance the quality of living in this issue. The research defines the homogeneity of the issue and the closed blocks as important property to support. Whereas the complete neglecting of the topography is seen as a negative point and modifications of the blocks in terms of adaptations of the type in regard to the topos are suggested by Raith (2000:102). The structure of the plot division is providing a fine grain which is reflected by the mix of uses and scale and finally provides the block/plot system with a certain stability of the whole. Further the coherency of the block with the building enables a permanent re-filling of the open structure also with unforeseen and non planned interventions, which is one of the main characteristics of the 19th century fabric. (ibid:110) (original text: “Die gründerzeitliche Stadt ist ein stabiles strukturelles Gerüst, das ein ausreichend wirsames Regelsystem verkörpert, um im Bereich seiner ‘Füllungen’ auch ungeplante und spontane Eingriffe zulassen zu können. Hier liegen Voraussetzungen für das entstehen einer Urbanität jenseits kalkulierter Inszenierungen”).

Concerning more recent types of blocks no research for Vienna is published yet, even though the municipality of Vienna only recently started research on this issue to find new block types that restore the coherence between the different scales of the urban issue in parts of the city that lack urbanity.

The research on the urban block in the Netherlands was mainly carried out as collaboration of the Architectural design and the Urbanism department of TU Delft within the framework of the programs ‘Context and modernity’ and ‘Techniques of urban design’. The research was published in the ‘Atlas of the Dutch Urban Block’, (2005) assembled and edited by Susanne Komossa, Han Meyer, Sabien Thomaes and Nynke Jutten. The authors give an overview on the different types of blocks appearing in different periods of time along case studies in Amsterdam and Rot-
Theoretical Background  The Urban Block

terdam. The atlas was meant primarily as study and teaching material but intended at the same time as an aid for design. Besides explaining the relation between the morphological characteristics of the block to the residential typologies, it is providing basic facts like dimensions, density, average size of dwellings. Following the case studies, additional essays lay out special issues of the urban block, some of which are the changing role of public and private, which appears with the opening up of the closed block, the block as microcosms of the city and the role of the collective within the block. All three issues are related to what is happening inside the block, the former closed, private domain, how this is organized and how does the exchange between the public and the private take place. Philipp Panerai calls the place of exchange, the possible extension of the public and the private domain a leeway (2005:13), which provides people with scopes of action, as already introduced in the last chapter. The leeway can be a threshold between the two domains, or a shared space, providing different domains and user groups with space at the same time.

The research following the Atlas was done among others by Han Meyer and Susanne Komossa. Meyer is giving an overview on the development of the European urban block (2008: 18), the changing relation of inside and outside with the opening of the block and sets the task to put the design of the block in a broader range of scales and to restore the function of the urban block as ‘microcosms’ (2006:30) of the city. Komossa’s topic of PhD research was the transformation of the Dutch urban block in relation to the public domain (Komossa2008), where she states that “architectural and urban models and rules are not value-free and that it’s necessary to understand the inner logic that binds the model and its rules to the ideals of society and to the nature of the process of continuous transformation.” Only this can provide spaces that support the needs of people, especially the role of the collective spaces within the block are a point to re-think in this context (Komossa 2008: 256). An interesting focus she follows further is the role of the micro-economy in the urban block, as a big part of blocks built are only for residential purposes.

The Boublokkenboek of Antwerp is a report on the research on the issue of urban blocks in Antwerp, that was initiated by the municipality of Antwerp in the installation the ‘bouwblokkenteam’ (Apostel et al 2008), which has a consulting role in (re-)development in the tissue of the urban blocks. The book resulted from a cooperation between the Artesis institute and the municipality of Antwerp, involving further students, architects and other professionals. A toolbox and parameters describe possible research and design tasks. The research provides basic numbers of the physical structure of the block tissue, as well as parameters, which I call performance objectives of the block, like green, public and private spaces, densification processes, diversity and accessibility. The toolbox of characteristics allows a comparative visualization of differences in design in the presentation of recent projects of block-development in Antwerp. It concerns topics like program, general considerations like density or grain size, considerations on the role of the inner court of the blocks and many more.

An interesting point is stated concerning de-densification or even cleaning of areas within the block. The de-densification shall provide the often densely built up plots with more air as well as more open space inside the block, hence enhance the quality of life for the inhabitants. As the Antwerp blocks feature in general a very high amount of plots (see chapter parameter description), the plots are quite small and not easy to transform. A survey on the availability of plots as well as on the location
of plots which are completely enclosed inside the blocks is undertaken. This is a first step to develop methods how to bring more ‘air’ inside the block. For bigger plots enclosed inside the block surveys are done on how to provide them with access and which type of development could take place inside.

‘Cerdà i la Barcelona del futur’ is the publication to the research on Cerdà’s model for Barcelona - the Eixample - directed by Joan Busquets and Miquel Corominas, which resulted in an exhibition 2009 in the Centre de Cultura Contemporània de Barcelona. The development of the Eixample is explained from the idea and theoretical surveys that preceded the first plans, defining the role of the block as space that complements the layout of the public space and streets as private space for productive and residential activities as well as for public buildings (see CCCB 2009:232). The objective is to maximize the use of the block’s perimeter in order to obtain a longer facade. The most interesting point in Cerdà’s blocks for the following research is the idea of the interior courtyards as “cities inside the city” (ibid) in form of public gardens and parks. Due to a diversity of regulations the inside of the blocks turned out to be filled with residential uses and productive activity. Since the 1980s attempts are undertaken to regain some of the courtyards as public spaces in form of gardens and green areas. The urban block of the Eixample is further an excellent example for the broad amount of variation in internal organization followed by diversity that can take place within the perimeter of a block. The same base is filled and refilled since more than 100 years, and its complexity can be expressed by the relation of 308.000 people living and 280.000 jobs inside the Eixample.

“The urban block, typical of the classical European city that the nineteenth century transforms and the twentieth does away with altogether.” Panerai, Castex and Depaule (2004) wrote 1977 in the introduction of ‘De L’Ilot a la Barre’, probably the most important book to visualize the dissolution of the urban block and its consequences. This review is based on the first English edition 2004, which is an extended version of the original publication from 1977, done by British researcher Ivor Samuels. The research published in the book is interesting for this thesis because it illustrates the relation between the general physical transformation of the block and changes in society on the one hand as well as a change in planning ideology, the horizontal separation of functions, on the other hand. With Haussmann began a “process of clarification, specialization and zoning” (Panerai et al 2004: 125) that established a spatial separation of life, where the block excluded due to its reduced or eliminated centre all diversified activities that coexisted previously. In general a decrease of differences in open space is traced through all the examples used in the book, that finally produced a top down initiated neutralization of space which was opposed by patterns of use wherever possible in a try to reaffirm the logic of earlier arrangements (Panerai et al 2004:132).

In the 1980’s a revival of the urban block takes place, experiments with the ‘open block’ are part of testing new forms, that blur the precise separation between the public street and the private inside of the completely closed block.

Concerning the role of the block in being open or closed Samuels is stating in the added chapter 8: “to think of the block as a whole would be missing the point, and reducing it to a continuous and homogeneous built-up area surrounding an empty centre would be a caricature of reality, where complexity and depth of tissue is ignored to the advantage of a central area of uncertain status or function” (Panerai et al 2004:164).
Conclusions from the literature review

The main point derived from all the literature review is already pointed out in Samuels citation. The capability of the block is not about a block being closed or open, but about the complex condition built by all the characteristics or parameter that are interwoven in a block. Nethertheless the existence of inside and outside of the block is one of the main characteristics that can provide a variety of conditions on a very small urban scale, the block and its plots. The transformation of the urban block, which can be read from the different research on the urban block, shows a further clear task to think about: how to locate and combine the different realms as well as structures, which allow the block to absorb a diversity of uses with changing needs of its users in present and future. Whereas the historic perimeter block provided a range of spaces from the public street, semi-public courts to private apartment, villas and gardens, the dissolution of the block involved a reduction of this variety of spaces. The interior of the traditional block was the place for the informal, a “space for all sort of things which either could not or would rather not, be given a place directly on the public street” (Meyer 2005:253). The open blocks built since the 1980s often appear with an inner court that is collective, and doesn’t accept any form of private appropriation. “The amount of leeway left to individuals in the spaces available to them remains one of the great problems of modern urban planning” (Panerai 2005:14). Important to repeat here again is, that these changes did appear in the transformation from the closed to the open block, but where strongly supported in the change of other parameters of the block, be it morphological like reduced plot division, or legal organization. Even though a change in thought is already recognizable, for quite some time pure residential blocks have been built. The mono-functional blocks in a worst case have no possibilities for small scale working facilities and caused by the lack of range of spaces in addition no ability to provide its inhabitants with areas that can be used as outdoor working space for activities that are maybe too dirty to do inside the apartment. Following from this a task for design is further to find solutions how to re-integrate scopes of action for the inhabitants.

Diagram showing the development of the design unit
Source: DASH Vol.1 2009: 8
Claiming, cultivating land in the American West.
Late 18th century.

Re-Claiming access to the city & urban live.
2009: Squatting as urban phenomenon.
Source: photo by the author
Theoretical Background

Re-Claiming Urban Territory

The Right to the City

Global and local processes leave their mark on the materialization and use of space, especially in the core city areas of the urban territories. Caused by the neutralization of space, which was explained in the last chapter, several groups and interests are competing with each other for the limited amount of available space and facilities in the inner cities. Especially groups of lower income population have a reduced amount of possibilities caused by these processes, as they are the ones without a lobby.

One consequence of the lack of possibilities, as already stated in the introduction, can be seen in the appearance of squatting movements that take place in European cities. The term squatting originally was invented by James Madison, later 4th president of the United States, in the late 18th century. He complained about how people occupied the land: “a squatter was a settler having no normal or legal title to the land he occupied, particularly in a district not yet surveyed. (Encyclopedia, 2009)”. Whereas the North-American pioneers settled and cultivated land of the large American West, the squatter – movement today takes place in urban territory. It could be seen as a way of re-appropriation of territory - an act to re-claim a territory. It can be seen as making accessible, what is underlying completely different processes, legality than the one who is re-claiming territory. As Smith (1996) states in ‘The new urban frontier’ global companies and wealthy population leave their mark on the production of space. Panerai, Castex and Depaule in addition refer to the changing possibilities of the everyday life in their book ‘Urban Forms’ in relating these transformations to the imposed transformations of the urban tissue resulting in the neutralized space. “In fact uses are defined not only by the way they adapt to the built environment, but also by the way in which they produce and define places, which may not be those designated by the planners” (Panerai et al:132). But these adaptations underlie “social forces, which exercise control, impose rules and even lead to the rejection of undesirable situations”(ibid).

Henry Lefebvre argued that the “Right to the City” is the right to “urban life, to renewed centrality, to places of encounter and exchange, to life rhythms and time uses, enabling the full and complete usage of […] moments and places” (Lefebvre 1996). Lefebvre’s notion of the ‘right to the city’ is carried on also by David Harvey, who posts the question: “But whose rights and whose city?”(2003:939). He states, that the rights currently are mostly those of the stronger, putting among others the example: “The communards of 1871 thought they were right to take back ‘their’ Paris from the Bourgeoisie and imperial lackeys. The monarchists who killed them thought they were right to take back the city in the name of god and private property”(ibid). This leads directly to the next consideration that the right to the stronger is mostly related to private property which is supported by our current capitalist society. To be able to go on debating and demanding the ‘right for the city’, it is necessary to interpret this right a bit differentiated: “not merely a right of access to what the property speculators and state planners define, but an active right to make the city different, to shape it more in accord with our heart’s desire” (ibid:941).

The question arising from these theoretical considerations is which physical organisation within the block supports the scopes of action for people as part of the right to the city?

Source small photo on the left: http://commons.wikimedia.org/wiki/File:Squat_%C3%A0_Paris_(59,_rue_de_Rivoli,_1er_ardt).jpg
Scopes of action

Scopes of action define spaces that enable the inhabitants/users of an area to take action, they enable the inhabitants to ‘help them-selves’, when a need for it appears, extend their possible range of activities of the daily life. This can be the need for a place to work, a small scale manufacturing or crafts place, or it can be a garden, that can provide the possibility to grow your own food.

The thesis deals with the scopes of action for work in self-organized way. These scopes of action (in addition to employed jobs) are micro-businesses in the sector of sale, trade and service as well as workshops for crafts, small-scale manufacturing and artists. These activities are either serving or producing and their clients are mainly the inhabitants of the area where the company is located in, but this highly depends on the specific location of the micro-business within the city. This “small-scale urban economy, let it be shops, workplaces or knowledge intensive businesses offer also a chance for newcomers and migrants with very different backgrounds and education to emancipate themselves not only social-culturally, but also economically” (Komossa 2009:4), but the “idea that the small scale industry should have a place all over the city and that high and low educated maintain a relationship in this, is not so strongly developed yet by the policy makers” (ibid).

The term ‘micro-business’ is also used by the World Bank and is defined for the European as well as the North-American context as a business that has less than ten employees and has a relatively low turnover. These businesses don’t need a high investment to start and ask for physical conditions that will be discussed later on.

An alternative to formal and informal

Currently a lack of affordable facilities for micro-businesses pushes people to run their business sometimes not formal, but in a grey-zone that is informal and sometimes not always conform to the law. Again, the squatted buildings in Paris (as can be seen on the picture on the last page) are a symptom for this unsatisfactory situation.
In this context, the term ‘formal’ describes a use of spaces in a way that it is legally meant to be used, whereas the term ‘informal’ relates to the appropriation of space despite the legal ‘allowance’ for a certain purpose.

The ambition for an alternative could result in the dissolution of the formality as well as the informality of actions from built form, but instead establish a structure within the urban tissue respectively the urban block that provides conditions to absorb new uses, with an immediate possibility to action for people.

The leeway & porosity

The need of space for these scopes of action puts the task to find the relevant spatial structures that enable instant action in a formal framework. As a first step, it is necessary to define the spatial conditions.
As the performance objective of the micro-businesses is reliant to the exchange with the public, these facilities have to be located along the border of a block, may it be at the perimeter or on an inner street. Spaces that enable people with a scope
of action allow either the public or the private to expand (Panerai 2005:13), following Panerai’s definition I further specify the location of the leeway needed for the performance objective as space along the border of a block. As the micro-businesses are ‘small’ scale facilities, they take place in a tissue dedicated in its main use to other, residential purposes, for example. This means, that the main material has to provide certain porosity to these complementing uses.

The porosity of the material describes the capacity to absorb. Absorb new uses or open up spaces that enable new user groups to appropriate the space. Pores in the material sometimes are already predefined in their use, as for example empty shops will probably refill again with service related uses, whereas other pores give the possibility to take action in an unforeseen way. The unexpected can happen, when a space is in a vague situation, when it is not clear, what will happen to it. The vagueness can result from a fracture, a left over from “the conclusion of an economic or social cycle” (Viganó, 2006: 343), examples for this are abandoned plots, often located in the inside of the blocks that previously hosted industrial production. Following this a cause for the vagueness can be a longer period of time in which a space is ‘out of use’ and “the porosity herewith ‘enables the re-thinking of the city’ (ibid). The porosity of the fracture can further be a property of the material when a block is assemblies of buildings of different times of building age and different uses that loose their original purpose or use at different point in time.

Besides the literally porous spaces exist in addition spaces that are shared by uses and people, their porosity doesn’t concern a space as entity, but the possible participation in a space. Businesses especially these related to productive activities often demand for an exterior space in addition to the closed facilities. Talking about micro-businesses that are per se of small scale, the open space needed probably can be of small scale and just of temporary need. Connecting this temporary afford-ability the question is which space has the physical properties to host these needs? The public street is not the place to host work, that is maybe too dirty to be done inside, or work that takes too much place to be done inside or even just the joy to work outside on a sunny day. Due to the development of urban blocks in the last 20 years, the open space left to be considered, is used by all inhabitants of the block and underlies rules that often prohibit to use the space for something else than walk or maybe leisure purposes. But before going on with the search for a space, a further definition of these spaces needs to clarify the terms collective, community and shared.

Collective / Community / Shared Space - a terminology

Collective and community are two terms very closely related. Émile Durkheim explained in his book ‘The division of Labour in Society’ written in 1893 the two types of society, that can help to differentiate the terms also for urban space. In his sense ‘Collective’ refers to the ‘organically solidary society’, wherein “the society is held together by the interdependence of its parts” (McKinney and Loomis 2002:13). The division and specialization of labor stimulated individualism and differentiation; therefore the people in this society are heterogeneous. This type of society is relating to the collective courts of blocks or even open spaces of a building complex, they are individual in general, but can act unique when societal values are endan-gered.

‘Community’, “the mechanically solidary society” (ibid), on the other hand is driven by people of the same beliefs and conduct. The members of communities are uni-
form. Even though “contemporary community may be understood as a communication based community, [...] which is expressed in unstable, fluid, very open and highly individualized groups” (Delanty 2003), the term still also refers to physical spaces in cities too. The community spaces especially appear in areas of high pressure of use, when people are gathering to form action groups to defend their rights or try to reclaim urban space. In this sense as well squatter occupied territories as new emerging community gardens in the densely built up inner cities are recent forms of appropriation of urban space by a community.

The third term, ‘Shared Space’, was introduced by British researcher Ben Hamilton-Baillie, to describe a new emerging approach in urban design. “At the heart of shared space is the concept of integration. This contrasts to the principle of segregation, the idea of separating different functions and different uses within the urban fabric” (Hamilton-Baillie 2006:1). Originally used for urban design with focus on traffic engineering and road safety, shared space aimed to combine a diversity of modes of transport including pedestrians in one space, not physically divided.

Considering that an integrative environment is also a concept needed to re-integrate the possibility of work into the collective open spaces of urban blocks, it is an interesting approach. This re-interpretation of shared space provides new opportunities to develop a “more inclusive and accessible environment (ibid:3). This new shared space can be based on a collective agreement, might be a declaration that allows a variety of uses in one place, including the unforeseen. It provides enhanced conditions to combine economic activities and dwellings in one block again. In the oldest block (Block1) of the case studies in Paris, shown in the next chapter, this interesting approach of the shared space is already realized. Several public paths are crossing the block, which make the usually private inner space public. At the same time a variety of uses is taking place in this shared space: private leisure like inhabitants sitting outside with temporary furniture and read a book (photo 3), teens are using the non-commercial space as meeting point (photo 2) as well as kids as playground. Tourists are strolling through the courts (photo 4) and enjoy a coffee in one of the small café’s, followed by people using the inner paths as shortcuts to come from one side of the block to the other more quickly, taking a look at the goods presented from a ship-owner that extended its showroom into open space (photo1). A men is repairing his bicycle and somebody else is re-painting a chair. Plenty of facilities and activities in just one space. Photo 5 shows an up scaling of a collective space on Java Eiland, Amsterdam (built 1994-2001) that mainly is used for leisure purposes, but shows traces of appropriations of other uses close to the buildings. (Source of the photo: DASH 2009, Vol.1:24)

As this last term explains best which type of space is needed to provide conditions to integrate more uses than the open space being an extended outside living room, shared space is the term labeling the spaces that can contribute to the scopes of action.

**Space for Scopes of Action**

Besides the open space, that was already explained, the built space also has some organizational conditions that support scopes of action. An interesting idea in this context is the concept of the unfinished. A reference project is Quinta Monroy in Iquique done by Elemental/ Alejandro Aravena, which is allowing the unfinished as concept to formally appropriate space (Ballesteros 2008). The action can be informal in a way that the point of intervention is in the responsibility of the user, it doesn’t need further allowances as certain rules are already applied on the site. It might be seen as an interesting interweaving of bottom up with top down, as partially the project already gives a main structure inclusive cer-
tain applied rules of transformation, how to be able to transform or further go on with the construction. The final decision, what to add and how, is done by the user according to his/her, a family’s needs. The unfinished puts an object of any scale, might be an area, in a certain state of vagueness that can provoke actions. The example of shops in the underground parking area and streets of LesOlympiades, one of Paris’ inner city Grands Ensembles, shows appropriations of space with micro businesses in areas or spaces that seem to be most unsuitable for any use, this is not seen as an indication for that individuals are always able to find pores for their purposes, but an indication for the lack of scopes above ground, in the public territory of the city. (Dubalin et al 2001:382)

After defining which conditions the open space must provide to be part of the scopes of action, following summarizing definition can be done: Scopes of action take place at the block border (which doesn’t equal the perimeter), the line, where the different realms meet. With the transformation of the block and its open spaces an up scaling and often a loss of scales took place which resulted in a loss of leeway for the private as well as for the public. The leeway can be a threshold where the public sphere and the private sphere are influencing each other and interfere (like a micro-business) or a shared space (extended temporary open air working space) that enables active use for the public and the private. A visualized typology of these spaces can be found in the chapter of describing the parameters.
Introduction of the Parameters

The role of the parameters

Parameters are the main tool to relate the literature research to the knowledge gained by case study research. The selection parameters allow a scientific categorization of the blocks that are representative for the city concerning income and building age, whereas the research parameters enable a comparison and differentiation between the case study blocks.

Selection parameters

The selection parameters are first building age and second, as a further division, level of income. These two criteria enable to give an overview of existent block typologies and investigate if the level of income has an impact on the equipment and facilities of a block.

The periods of building age are divided into 5 categories. All built substance before 1840 is included in one category, because this substance mostly is existent in a fragmented way due being stratified several times. The second period starts in the “time of founders” and ends before the First World War. The third period frames the two world wars with the inter (world) war period to the post second world war time. The fourth timeframe mainly concerns the re-building after the Second World War, what includes also a rethinking of urban structures and the realization of modernists ideas on a big scale having a huge impact on the everyday life of the city’s inhabitants. Further this period ends with another rethinking of the urban form, especially the re-consideration of the urban block as an interesting element of the urban fabric. The last period starts with the nineteen-nineties and lasts until today.

Research parameters

The parameters derive mainly from the research questions, others are chosen in addition when they played a major role in other studies on the urban block, the three main categories are morphological parameters, performance objectives and socio-economic data. The parameters of research are divided into qualitative and quantitative parameters concerning how they are used in the research, some are needed to calculate, others are visualized to show certain qualities of the investigated space.

The defined parameters of research are on the one hand measurable values, on the other hand qualitative remarks, both are used to find existent spatial relations. The qualitative remarks are gained by conversations with inhabitants/users of an area and tell micro-stories within a bigger context that allow conclusions on the existent spaces of intervention for the inhabitants within a block.

Application of research parameters

First, the parameters are applied in fieldwork. The parameters represent spatial properties which are drawn on a prepared printed cadastre map for each block during fieldwork complemented by a photo-documentation of each block. Information concerning interesting unforeseen observations is noted in addition.

In the following the parameters from fieldwork sketching are visualized for each
block separately. First, a grouping of parameters in four categories for qualitative description is done to be visualized in a next step (see table on the next page), the categories are general block properties, accessibility, mapping scopes of action and tracing scopes of action. Second, each parameter is drawn on its own to enable a comparison of one parameter within all blocks which allows an evaluation and categorization of values within one parameter. The categorisation within each parameter is done in relation to the specific samples taken for the case studies, in this sense the categorisation is strongly related to the context it is embedded in. Third, the parameters are brought into relation to each other using the quantitative table and diagrams derived from the table to visualize the relations. This makes possible to draw conclusions on which parameters are characteristics, which relations exist between the parameters, whether there exist hierarchies and finally where is potential for design.

The parameters and their values are meant to explain the physical-spatial relations between the parameters and do not represent a final product.

The thesis deals with the basic morphological parameters and the scopes of action as performance objective.
### Table of Research Parameters _ before Fieldwork

<table>
<thead>
<tr>
<th>Research</th>
<th>Scale</th>
<th>Parameter</th>
<th>How to Measure [Unit]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Morphological Parameter</strong></td>
<td></td>
<td>building</td>
<td>amount of floors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>height of groundfloor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>amount of units per entrance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>position of entrance(s)¹</td>
</tr>
<tr>
<td></td>
<td></td>
<td>plot</td>
<td>amount access public street - plot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sequence public to private (y/n)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>calculate density (spacemate)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>position of entrance(s)²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>block</td>
<td>size</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>amount of plots</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>back to back plots</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>through plots</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>configuration of block</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>dimensions of block</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>back-alley</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cross-alley</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>length of streetfront per plot</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>density</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>existence of semi-public areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sequence public to private³</td>
</tr>
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<td><strong>Governance</strong></td>
<td></td>
<td>plot</td>
<td>ownership</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(community) rules</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>planning documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>block</td>
<td>rules</td>
</tr>
<tr>
<td><strong>Tracing Scopes of Action</strong></td>
<td></td>
<td>plot</td>
<td>signs on façade⁴</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>transform. on plots ⁶</td>
</tr>
<tr>
<td></td>
<td></td>
<td>block</td>
<td>changes of plot configuration</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>added special uses⁷</td>
</tr>
</tbody>
</table>

¹ position of entrances: direct connection with street/visible but distant to street/ distant, not visible from street - constitutedness  
² position of entrance(s) in relation to the topologic position of the street  
³ existence of transition zones like front-gardens, doors and fences between the divers states of publicness/privacy  
⁴ intervisibility is derived from the position of entrances to a building as well as the ones from the other side of the street  
⁵ signs on façade to see if additional uses than the main use exist on a plot  
⁶ compare recent with original or some years old plan material and recognize visible changes on site  
⁷ recognize visible changes on site
Introduction of the Parameters

Visualizing the Research Parameters _ after Fieldwork

> General

Block surface [m²]
Block proportion [relation]
Block border length [m]
Amount of plots [amount]
Street network density [m/ha]
Topology of street-network [value of integration]
Hierarchy of surrounding streets [value of hierarchy]
Plots size-variety [value of variety]
Density in the block [tool spacemate]
Height of groundfloor - average of block [m]

> Accessibility

Location of entrances
Amount access public street / plot
Inner paths
Plot accessibility [back to back/through/single]

> Mapping Scopes of Action

Porosity: Shared Spaces
Shared Spaces with temporal access
Inner Courts Buildings

> Tracing scopes of action

Existing spaces in use for small scale entreprises, crafts and manufacturing, artists spaces
Urban agriculture, Community gardens

The other parameters are used to calculate relations between the parameters. Some parameters of the initial datasheet were not carried on, because they can be expressed in other basic parameters.

Research Parameters

Describing the diagrams of the research parameters

General morphological parameters
These parameters represent the main parameters that build the basis for the calculations, to visualize relations between the parameters.

Built-up / Open space
These parameters show a relationship between the built-up density within the block to the density of existent spaces in use for the issues in focus. The height of ground-floor is an indicator for what is possible in the buildings’ ground-floors (this map is found for all block in the chapter of the parameter description).

Accessibility
Accessibility locates all entrances to a block, direct entrances into buildings as well as paths that represent entrances into the block, which can enlarge the border length of a block, hence lengthen the possible border line that can contain further points of access into a block.

Mapping and Tracing
The both terms are used according to what James Corner states in his article “The Agency of mapping: Speculation, Critique and Invention” to be able to make a differentiation in how to visualize different layers of reality of the same objective. Whereas “Tracing the scopes of action” visualizes spaces that are already in use, “Mapping scopes of action” “unfolds potential” (Corner, 1999) of spaces concerning the performance objective, where something could happen in addition.
Testing the Parameters

Introduction of the Parameters

After setting the parameters in a first step, a testing in two blocks in Amsterdam was done to check their feasibility. Testing sites were a block in Ijburg and a second one in the ring canals area. The testing of the second one was in general an observation as expected, the first one showed that the quite recent block development needs a kind of wider context fieldwork. The Ijburg block showed that, probably because of the lack of stratification due to its short period of existence, needs observation on the neighbourhood level to recognize its position in the urban fabric, as well as to recognize a potential that is not obviously visible in looking “just” at the block itself.

Even though the area was developed only recently and is partly still under construction, first attempts to appropriate the material are already visible. The beginning appropriation (see photos) often concern open space (mainly children), but also try to enhance the connection between open space and the housing unit. A perception of a lack of this direct connection and its obvious importance is recognizable herewith [see block b]. The role of entrances here is of major importance, as the units which are served by an individual entrance are the ones where small scale entrepreneurship takes place, at least so far and as far as visible from reading the doorbells and signs on the facades. This direct accessibility shapes conditions that enable a high porosity for small scale entrepreneurship, as block [a] shows.

Further the observation concerning entrances also allows differentiating possibilities [scopes of action] of different social groups, as block [b], which is a social housing block, has just one single entrance to the public street for all units.

Especially the area of Ijburg raises the question of who is able to do what kind of intervention? Who acts is strongly depending on the availability of scopes of actions on different levels: the individual inhabitant, the neighbourhood or community and finally a developer or the municipality. The different situations in block [a] and block [b] show a completely dissimilar picture concerning the possibility to install a small scale business as individual inhabitant, concerning their spatial characteristics. Block [b] shows potential for the developer or community to act, because of the huge amount of available open space, which is doesn’t show [yet] a specification in use of the open space, therefore it can be described to be in a vague, transitional position.

Observation from case study [1] Ijburg focussing on > Scopes of action

[1] Ijburg. Block [a]
> Most individual units have direct access to public space. > Diversity in ownership.
> Variety in open space, private & collective. > Small scale enterprises, shops.
> Located along the main road.
The amount of entrances as well as the relation entrance to unit provide a potential for changes in use, because it doesn’t have a high impact on neighbouring units, as the units get independence in having an own access to public space each.

[1] Ijburg. Block [b]
> No entrances to the open space. > No public streets surround the block. > One entrance from public street to all individual units. > Adaptations in accessibility in the ground-floor-area done by the users indicate a lack. > Social housing.
> Mono-functional. > Located at the edge of the island. > Large open space.
The large open green space provides possible space for leisure as well as urban agriculture or insertion of other new uses.

Morphological Research Parameters

1] Streetnetwork-Density
2] Topology of Street-Network
3] Hierarchy of Streets
4] Intervisibility
5] Block-Proportion
6] Block-Surface
7] Block-Border-Lenght
8] Plot-Division
9] Plotsize-Variety
10] Plot-Accessibility
11] Entrance
12] Density
13] Height of Groundfloor
The research of the thesis concentrates on the morphological parameters in the awareness, that governance parameters influence the actual use of the urban tissue.

The research parameters fixed after the testing are in the context of four different scales, which interrelate: tissue, block, plot and building.

Street-network-density in two categories, for motorized transportation on the one hand and including public pedestrian streets on the other hand, topology of the street-network, hierarchy of the block surrounding streets and intervisibility of the entrances are the parameters on the level of the tissue.

Block-proportion, block-surface, block-border-length including inner streets, density as well as plot-division represent the parameters on the level of the block.

Plotsize-variety and plot-accessibility are the properties investigated on the level of the plot and finally entrances and height of groundfloor are the parameters of research on the level of the building.

As preparation for fieldwork these parameters are used to do preliminary studies of the selected urban blocks by use of city-maps, CAD/GIS data (received from the urbanism department of the municipality of Paris, Apur). Additionally the use of aerial views (Google Earth), bird view (www.bing.com/maps) as well as street view (maps.google.com) give a first insight in the case study areas.

Each parameter will be explained after adding the values from fieldwork research in the chapter following the description of the case study blocks, including information about the relevance of these parameters in existent research on the urban block.

All parameter values derived from fieldwork refer to the actual situation, even though the planning intention might have been different, the actual use and appearance are taken into consideration.
Paris

2,151,853 inh.
20.696 inh/km²

105 km²

Sources: Paris aerial view: google earth 2009
data: www.paris.fr
Introduction. Case Studies [Paris]

The thesis deals with the Western and Central European city, Paris within its political boundaries is the specific case study city, with the urban block as research reference typology. Even though Paris is one of the two cities in Europe with the highest amount of population and extreme population density, this specific urban territory is considered to be an interesting reference case study due to the multiple stratification processes during history and the urban block as dominant element of the urban structure, which is also a main element in the tissue of several other European cities.

The area the block samples are chosen of equals the territory confined by the political borders of the municipality of Paris. Twenty case-study – blocks in Paris were carried out to describe the relations of the research parameters and provide a basis to test the methodology for further research.

Categories of the Selection Criteria

<table>
<thead>
<tr>
<th>Periods of building age_selection</th>
<th>Level of Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1840</td>
<td>1 low</td>
</tr>
<tr>
<td>2 1840 - 1910</td>
<td>2 high</td>
</tr>
<tr>
<td>3 1910 - 1960</td>
<td></td>
</tr>
<tr>
<td>4 1960 - 1990</td>
<td></td>
</tr>
<tr>
<td>5 1990 - recent</td>
<td></td>
</tr>
</tbody>
</table>

Level of Income
source: Apur (1999)

Building Age
The data used to choose the case study blocks was digitally not yet available at the point of selection for fieldwork, therefore 3 alternative available sources were used to achieve the information needed. The information source for building age was provided by the main map from the book “Paris Visite Guidee”, which shows the building age of all the streets. For the selection of blocks concerning building age those were chosen, that were surrounded by streets originated in just one, or dominated by one building age category. The level of income was available at the level of arrondissements, additionally the map of Real Estate Price made a further, more detailed selection possible.

After fieldwork this selection was re-checked by the level of income map, where the data was available on the level of IRIS (Îlots Regroupés pour l’Information Statistique), which represents the French census unit with about 2000 inhabitants each.

Which data to choose for the building age was reconsidered after the data was available on the level of the plots. The map of building age shows, that in most blocks exists, due to the high intensity of stratification of Paris’ tissue, an assemblance of buildings from different periods of time, whereas the structure of the streets is more stable for a longer period of time, and therefore is setting basic conditions for a block. In this way it was considered for relevant to keep the building age of the streets as selection criteria of building age.

An interesting aspect is the comparison of the level of income with the zoning plan of Paris map. The darker blue represents the area where mixed use is supported, which has a high correlation with the area of lower income population, whereas the lighter blue area equals the housing preferred zone, that correlates with the higher levels of income.
Case Study: 20 Chosen Blocks “intra-muros”

The selection parameters are level of income and building age.

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Water Level of Income</th>
<th>Building Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>2</td>
<td>2 (high)</td>
<td>2 (recent)</td>
</tr>
<tr>
<td>3</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>4</td>
<td>2 (high)</td>
<td>2 (recent)</td>
</tr>
<tr>
<td>5</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>6</td>
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<td>2 (recent)</td>
</tr>
<tr>
<td>7</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>8</td>
<td>2 (high)</td>
<td>2 (recent)</td>
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<tr>
<td>10</td>
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<tr>
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</tr>
<tr>
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</tr>
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<td>15</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>16</td>
<td>2 (high)</td>
<td>2 (recent)</td>
</tr>
<tr>
<td>17</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
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<tr>
<td>18</td>
<td>2 (high)</td>
<td>2 (recent)</td>
</tr>
<tr>
<td>19</td>
<td>1 (low)</td>
<td>1 (oldest)</td>
</tr>
<tr>
<td>20</td>
<td>2 (high)</td>
<td>2 (recent)</td>
</tr>
</tbody>
</table>
The research area is limited to the political border of the municipality of Paris, which can be considered as the city’s core and is confined by the surrounding ring road ‘Périphérique’. The samples chosen with the selection criteria are spread over the whole city and show already a representative amount of samples to compare.

From the fourth period of building age on the observation can be made, that some blocks are composed by a mixture of high income and low income population, which is indicated by the appearance of private and social housing within one block. The decision for one of the two categories of income was taken in these cases by where the majority of population belonged to.

The table on the bottom of the left page shows the values of categorization concerning the selection parameters (A) building age and (I) level of income for all (S) samples.

In the following, all block case studies are presented by the four categories of visualization which are explained in the chapter ‘introduction of the parameters’.
**General Observations from the Case Studies**

It was interesting to see, that the younger the building age of a block is, the less divers it is in general and the fewer entrances it features. This is maybe caused by the less stratification processes that the younger blocks are undergone, but also might be supported by less plot divisions, what leads to the tendency that in the younger blocks the whole block was often built at once and sometimes the block equals the building.

Concerning the relation of public to private open space a clear change is visible: whereas the elder samples show open spaces relating to the buildings on a plot, and mainly being located inside the blocks, the younger projects like the one in Bercy or the two samples in Javel are located next to a large parks which somehow transform the scale of what is a block. It might be interpreted, especially having a look at the Bercy case study, that the blocks along the perimeter of the park are forming a bigger block with the park as its collective court and the surrounding streets as threshold being a shared space for a diversity of activities. The open space within the block is often a collective space for all inhabitants of the block.
Fieldwork [September_ Oktober 2009]  
Case Study Blocks [Paris]

**Building Age [<1840]**  
Block 1  
Block 2  
Block 3  
Block 4

**Building Age [1840 - 1910]**  
Block 5  
Block 6  
Block 7  
Block 8

**Building Age [1910 - 1960]**  
Block 9  
Block 10  
Block 11  
Block 12

**Building Age [1960 - 1990]**  
Block 13  
Block 14  
Block 15  
Block 16

**Building Age [1990 - recent]**  
Block 17  
Block 18  
Block 19  
Block 20

**Field-work Experiences**
A general remark concerning fieldwork in Paris can be made about the possibility to recognize the amount of apartments or offices existent in one building. The system to access a building mostly is to enter a digital code, in this way neither the amount of units nor a name is visible. On the one hand, following this, it is easy to recognize where facilities are located inside buildings, because they have additional, separate bells or have direct access from the public street. On the other hand the barrier for people to enter from the street is high, because of the need of a code.

The sketches present how the information was noted during fieldwork, besides taking photos.

Due to the high amount of artists as well as inhabitants open to answer questions in the area of block 2, not just the amount of background information collected for this area is high, but some contacts derived from the conversations in this concrete case study were also a helpful source for other case studies. Further it was possible to make the research focus more precise.

All photos are taken by the author.
> Saint-Paul, Le Marais, Quartier Saint Gervais <
Location of Block 1
Source of map basis: Apur

General Morphological Characteristics

- Block size [7991m²]
- Block proportion [2.71]
- Block border length including Inner Paths [891m]
- Amount of plots [23]
- Intervisibility [3 streets]
- Streetnetwork Density
- Integration_Vicinity to Centralities [2.0]
General Observations & Interpretations Sample 01

Block 01 is LeVillage de St. Paul, a protected building block in the central Quartier Le Marais. The block is since short time owned by the municipality, mainly to protect the ensemble as cultural heritage. Its inhabitants are mostly of lower income, a high amount of apartments is communal housing. In the ground floor area numerous small shops, ateliers for artists, galleries, small workshops for crafts and architects, illustrators, as well as a kindergarten and divers other communal facilities are located. The block is crossed by some pedestrian paths enabled by 11 passages leading into the block. This makes on the one hand the block very accessible and on the second hand allows pedestrians to use these permanently accessible inner paths as shortcuts from one to the other side, as the block is 162m deep. All inner courts of the block are connected and provide due to its public accessibility, the use as open space for the inhabitants of the building and facilitating extended open air working space and showrooms for the micro-businesses located inside the block a very good example for a shared space.
Shared Spaces _ Mapping Scopes Of Action

Inner Court Building
Neighbouring Blocks / Building Chosen Block

Shared Space with temporal access
Vague Space [empty facility]
Public Street
Neighbouring Blocks / Building Chosen Block
Paris Case Study [Block 1]

Accessibility

1. Inner - Block - Paths/Street
2. Inner - Block - Path with temporal access
3. Empty Facility
4. Main Building Entrance
5. Shop Entrance
6. Service / Garage Entrance
7. Inner - Block - Paths/Street
8. Shared Space
9. Shared Space with temporal access
10. Inner - Court Building
Kitchen Accessories Shop, extended showroom in open space
Village St. Paul, Inner Courts

Turner & Metall working, Rue St. Paul

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block
The Village St. Paul is owned by the Marie de Paris. It is a protected ensemble, the small [work]shops have a low rent and the apartments are mostly communal housing.

owner of the Gallery Gelot, Rue St. Paul
Location of Block 2
Source of map basis: Apur
General Morphological Characteristics

- Block size [22809m²]
- Block proportion [1.08]
- Block border length including Inner Paths [1056m]
- Amount of plots [40]
- Intervisibility [4 streets]
- Streetnetwork Density(ap) [216.9m/ha]
- Integration_Vicinity to Centralities [2.3]
Paris Case Study [Block 2]

General Observations & Interpretations Sample 02

Block 02 is located in the Quartier de Belleville in the north-eastern part of Paris. Its inhabitants are mostly of lower income and include a relatively high amount of population, which is foreign born. The bookseller in Rue de Belleville explained that each wave of migrants arriving in Paris comes to Belleville first and some always stay, in this way an intense mixture in culture of more than 80 nations co-habit in this quarter. The built substance shows a variety in height, in which the scopes of action for individual inhabitants are located in the smaller, lower rise buildings as well as open spaces with public accessibility. The block hosts several facilities that are available for artists, provided by the municipality of Paris, who enables also a community garden accessible to all inhabitants in the block. The garden is used to grow vegetables and fruits in a self-organized way, with the rule that it’s explicitly for non-commercial use. The facilities for micro-businesses are located along the border of the block, whereas the workshops are to be found in the inside of the block, though with direct access to the public streets surrounding the block. The block offers porosity in terms of mixture of building age and small grain size through a high amount of plots, the renovations & uses are of divers age and represent permanent regeneration.
This community started as a squatting movement 20 years ago, since five years this area is owned by the municipality.

urbanist Mark, community LaForge, Rue Ramponeau

---

**Workshop: Crafts/Manufacturing/Artists**

**Micro-Business: Sale/Trade/Service**

**Shared Space**

**Shared Space with temporal access**

**Inner Court Building**

**Religious Facilities**

**Urban agriculture / Community garden**

**Public Street**

**Neighbouring Blocks / Buildings Chosen Block**

---

**Tailor, Rue Dénoyez**
> Affordable space to work is absolutely rare - our ateliers are owned by the Marie de Paris, the rent is 200€ per year <

artist Silvia, Rue Dénoyez
Boulevard Haussmann, Quartier Faubourg Montmartre
Location of Block 3
Source of map basis: Apur
General Morphological Characteristics

- Block size [5525m²]
- Block proportion [1.68]
- Block border length including Inner Paths [302m]
- Amount of plots [13]
- Intervisibility [4 streets]
- Streetnetwork Density$_{np}$ [235.6m/ha]
- Integration_Vicinity to Centralities [2.3]
Block 03 is located in the Quartier Faubourg Montmartre. Its inhabitants in average are wealthy. The built substance is in a very good condition and it was transformed to get its recent appearance in Haussmanian period, when Boulevard Haussmann was built. The block is situated very close to the opera, therefore hosts a huge 5star hotel at the main street, with small shops in the ground floor areas and a diversity of offices in the upper floors of the side streets. It further hosts some restaurants and café’s that serve business people for lunch and dinner. The block has a quite closed appearance, just opens once to give access to offices with an entrance in the courtyard. The porosity for additional uses is located only in the buildings, as the block is already very densely built up, the groundfloor areas are always at least three meters high, which makes them suitable for a variety of uses.

source basis cadastre:
Paris Case Study [Block 3]

Hair dresser, Rue Lafayette

Second hand bookstore, Rue le Peletier

Restaurant, Rue le Peletier

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block
Fieldwork Paris Block [4]

Location of Block 4
Source of map basis: Apur

General Morphological Characteristics

- Block size: 19414m²
- Block proportion: 1.83
- Block border length including Inner Paths: 777m
- Amount of plots: 41
- Intervisibility: 4 streets
- Streetnetwork Density_{ap}: 180.1m/ha
- Integration_Vicinity to Centralities: 2.0
Paris Case Study [Block 4]

General Observations & Interpretations Sample 04

Block 04 is located in the Quartier Gros - Caillou in the western-central part of Paris. Its inhabitants are mostly of higher income, but show in general a mixture. The characteristic of this block is its inner street that enables all buildings of Rue Amelie to be served also from their back side, accompanied by smaller buildings, mostly also of lower height than the ones along the perimeter of the block. It hosts a relatively high amount of crafts workshops as well inside the blocks as well as along the border. Some communal facilities are located in the southern part of the block, the amount of service oriented facilities raises to the northern part. The block features a variety of plot sizes and some long deep plots which allow quiet dwellings inside the block, as well as a plot developed in the 1960’s which adds a complete different building typology for apartments and offices, which adds to the diversity of the block. The porosity in this block is also provided by the diversity of building age and uses that offer available space in different points of time for a variety of uses, whereas the inner street hosts the small scale facilities for small crafts and manufacturing workshops and is itself a shared space in being a street and an extended working space for the workshops as well during daytime.
Temporary Access, Rue de Grenelle

Inner Street, Passage Jean Nicot

Inner Path into a deep plot, Rue Saint-Dominique
To have an affordable working space in the city, either you have to have it since long time, or you are very lucky, because it’s nearly impossible to get space like this nowadays.

Carpenter Mr. Dumont, Passage Jean Nicot
Rue de Suez, Quartier Goutte D’Or
Fieldwork Paris Block [5]

Location of Block 5
Source of map basis: Apur

Block size [8390m²]
Block proportion [3.87]
Block border length including Inner Paths [463m]
Amount of plots [32]
Intervisibility [4 streets]
Streetnetwork Density, sp [232.5m/ha]
Integration_Vicinity to Centralities [2.3]
Block 05 is located in the Quartier Goutte D’Or, north of Boulevard La Chapelle, it is a traditional workers district. Its inhabitants are of lower income and include more than 30% of population which is foreign born. The built substance as well as the street section clearly differentiates in appearance the buildings along the street originating before Haussmann, and the buildings built after Haussmanns restructuring. Especially Rue de Suez has higher buildings with broader sidewalks, which gives people more space to stop and talk to each other. The streets are very lively, probably due to its high amount of immigrant population, which maybe have a different culture in everyday life, or simply have smaller apartments, which makes them use the public space as extended living room. The scopes of action for individuals are spread along all four streets in form of small shops in the ground floor areas, which are mainly African food shops as well as a diversity of African handicrafts shops. Two special facilities located in the block are the urban development office for the 18th arrondissement, which supports the area with bottom up neighbourhood projects as well as a Christian church. In general the block is completely closed without any inner paths and also features occasionally buildings not older than ten years.
Shared Spaces _ Mapping Scopes Of Action

Shared Space
Shared Space with temporal access
Vague Space [empty facility]
Inner Court Building
Public Street
Neighbouring Blocks / Building Chosen Block

empty shop, Rue Myrha
> Participation is a maxim of our work, it’s especially important as many different nationalities live here, each week we have a public office in the park to exchange with the inhabitants. <

Chargée de développement local Elisa, Rue Myrha
Location of Block 6
Source of map basis: Apur

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
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<tbody>
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<td>Block border length including Inner Paths</td>
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<tr>
<td>Amount of plots</td>
<td>[50]</td>
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<tr>
<td>Intervisibility</td>
<td>[4 streets]</td>
</tr>
<tr>
<td>Streetnetwork Density_{StP}</td>
<td>[223.0m/ha]</td>
</tr>
<tr>
<td>Integration_Vicinity to Centralities</td>
<td>[2.3]</td>
</tr>
</tbody>
</table>
General Observations & Interpretations Sample 06

Block 06 is located in the Quartier Batignolles in the north of Paris. The block was built by a doctor in Haussmannian period, to provide small families, mostly employees with two room apartments.

The built substance is homogeneous, even though the amount of plots is very high and causes a small grain size. The merger of two or more small apartments within the buildings to bigger ones supports the ‘upgrading’ of the area, which replaces the lower income population and puts a higher pressure on the area that was also a preferred place by students. The facilities concerning the performance objective actually in use are nearly all located along the short (wide) sides of the block, whereas the long deep sides show several empty shops in the ground floor area, some of which are currently used as apartments. The homogeneous closed block and the section of the street, which dedicates nearly all the space to the motorized transport, together represent an extreme polarity of public and private, where the leeway can just take place inside the buildings.
Shared Spaces _ Mapping Scopes Of Action

Shared Space
Shared Space with temporal access
Vague Space [empty facility]
Inner Court Building
Public Street
Neighbouring Blocks / Building Chosen Block

Empty shop, Rue du Dr Heulin
Nearly invisible crafts shop:
A plumber in Rue Davy
Paris Case Study [Block 6]

Tracing Scopes Of Action

2. Beautisalon, Rue Lacroix

3. Bycicle Repair & Rent, Rue Lacroix

4. Large Foregarden, Rue Lacroix

5. Zoom: Growing Vegetables in the foregarden, Rue Lacroix
Rue Rembrandt, Quartier Europe
Location of Block 7
Source of map basis: Apur

General Morphological Characteristics

Block size [4057 m²]
Block proportion [3.34]
Block border length including Inner Paths [314 m]
Amount of plots [8]
Intervisibility [4 streets]
Streetnetwork Density_{sp} [136.3 m/ha]
Integration_Vicinity to Centralities [1.3]
General Observations & Interpretations Sample 07

Block 07 is located in the Quartier Europe in the north-western part of Paris, located very close to Parc de Monceau and hosts mainly offices and high income population. The block originates in Haussmannian time and is characterized by its reduced block surface and proportion, which allows mainly through plots. Caused by this many buildings have just one entrance along one of the deep sides, the entrance on the other side of the through plot is closed or not in use, which gives the block less entrances and hence less people to arrive or pass. Currently there are two relatively big plots under construction, which will be transformed into offices again. There are no facilities concerning the performance objective located in the block, which is probably caused by the location in a wealthy residential area. The only building that hosts exclusively apartments is located closest to the park and additionally features a fore garden, which is a threshold and provides its inhabitants with a certain distance from the street and a garden and therefore an outdoor leeway.
Shared Spaces – Mapping Scopes Of Action

- Shared Space
- Shared Space with temporal access
- Vague Space [empty facility]
- Inner Court Building
- Public Street
- Neighbouring Blocks / Building Chosen Block

Accessibility

- Access to Vague / Collective Spaces
- Shop Entrance
- Main Building Entrance
- Empty Facility
- Service / Garage Entrance
- Inner - Block - Paths with temporal access
- Inner - Block - Paths/Streets
- Vague / Collective Spaces
- Inner - Courts Buildings

Temporary access, Rue Murillo

Re-Use, Rue Murillo
Tracing Scopes Of Action

Paris Case Study [Block 7]
> Rue Léon Jost, Quartier Plain Monceau <
Location of Block 8
Source of map basis: Apur

source:
General Morphological Characteristics

- Block size [5985m²]
- Block proportion [2.76]
- Block border length including Inner Paths [353m]
- Amount of plots [17]
- Intervisibility [4 streets]
- Streetnetwork Density $D_{AP}$ [205.1m/ha]
- Integration_Vicinity to Centralities [2.0]
Block 08 is located in the Quartier Plain Monceau in the north-western part of Paris. Its inhabitants are of higher income, and this block especially hosts two community facilities; A Swedish Church, which also includes a primary school and kindergarden, and a Jewish community centre. The buildings in Rue Léon Cognier are very homogeneous with similar floor heights, whereas the other streets show more variety even in building typologies, including two ‘Palais’ with open courts partly visible to the street, for example. The facilities for the scopes of action are reduced to the inside of the buildings, as the block is very densely built up with a high ground coverage. The existent facilities for micro businesses are mainly for goods of daily use, like a Boulangerie, but also small offices hosting creative branch businesses.
Shared Spaces _ Mapping Scopes Of Action

- Inner Court Building
- Neighbouring Blocks / Building Chosen Block
- Shared Space with temporal access
- Vague Space (empty facility)
- Public Street
- Neighbouring Blocks / Building Chosen Block
Urban agriculture / Community garden
Religious Facilities
Inner Court Building
Neighbouring Blocks / Buildings Chosen Block

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Public Street

BeautyStore, Rue Léon Cognier
GraphicDesigner, Rue Léon Cognier
Paris Case Study [Block 8]

Tracing Scopes Of Action

Jewish Community Centre, Rue Léon Cognier

Boulangerie, Rue Cardinet

Swedish Church, Rue Médéric
Rue Blanchard, Quartier Charonne
Fieldwork Paris Block [9]

Location of Block 9
Source of map basis: Apur

source:
General Morphological Characteristics

- Block size [4191m²]
- Block proportion [2.86]
- Block border length including Inner Paths [294m]
- Amount of plots [1]
- Intervisibility [4 streets]
- Streetnetwork Density_{ap} [134.6m/ha]
- Integration_Vicinity to Centralities [1.7]
General Observations & Interpretations Sample 09

Block 09 is located in the Quartier Charonne in the eastern part of Paris along the Périphérique, and is part of a social housing area. The block is further situated along a main route, which provides it with a kind of centrality. Despite this centrality the block is located along a border situation due to the Périphérique. This strong barrier on one side of the plot reduces the amount of people passing by the plot to the inhabitants of the block itself as well as of the direct neighbouring blocks. Further this is probably the cause for the low amount of facilities. All facilities that exist currently are located along the main route. The length of the block oriented towards the Périphérique shows some empty facilities and one social institution. All buildings of the block are similar in appearance and together form an open block on a single plot. Even though the block’s shape is open, its open space is enclosed and serves only the inhabitants of the block. The open space surrounding the block is large too, but of very low quality, it mainly serves the motorized transport.
Shared Spaces _ Mapping Scopes Of Action

Accessibility

- Access to Vague / Collective Spaces
- Shop Entrance
- Main Building Entrance
- Empty Facility
- Service / Garage Entrance
- Inner - Block - Paths with temporal access
- Inner - Block - Paths/Streets
- Vague / Collective Spaces
- Inner - Courts Buildings
Tracing Scopes Of Action

Paris Case Study [Block 9]

1. Grocery Store, Boulevard Davout
2. Hairdresser, Rue Blanchard
3. Workshop: Crafts/Manufacturing/Artists

Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block
Fieldwork Paris Block [10]

Location of Block 10
Source of map basis: Apur

source:
Block size [7765m²]
Block proportion [1.08]
Block border length including Inner Paths [350m]
Amount of plots [1]
Intervisibility [3 streets]
Streetnetwork Density_{AP} [99.6m/ha]
Integration_Vicinity to Centralities [1.3]
General Observations & Interpretations Sample 10

Block 10 is located in the Quartier Bel Air in the eastern part of Paris, also in vicinity to the Périphérique and its inhabitants are mostly of lower and medium income. The block further is positioned next to a large cemetery which put it also in a border situation. The buildings are all above eight levels high and together build one ensemble. The block is an open block with open spaces available only for the inhabitants of the block, whereby a separated inner street, which actually is located along one side of the perimeter, collects all service infrastructure of the block, like tiny storage boxes, garbage place and giving access to the fire brigades at the same time. The block further has a concierge for the whole block at once, that has to be passed in case that the person entering is a visitor, which doesn’t have a key for one of the other doors. The existence of the permanently present concierge can be a sign that the block probably hosts not low but middle income population. The porosity of the block is based in the shops in the ground floor, as the inner court has restricted access, whereby the only existent facility concerning the performance objective is a boulangerie.
Paris Case Study [Block 10]

Tracing Scopes Of Action

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block

Boulangerie, Boulevard Soult
Fieldwork Paris Block [11]

Location of Block 11
Source of map basis: Apur

General Morphological Characteristics

- Block size [22430m²]
- Block proportion [1.12]
- Block border length including Inner Paths [987m]
- Amount of plots [19]
- Intervisibility [3 streets]
- Streetnetwork Density_{sp} [151.6m/ha]
- Integration_Vicinity to Centralities [1.7]
General Observations & Interpretations Sample 11

Block 11 is located in the Quartier Necker in the central-western part of Paris. Its inhabitants are of middle and higher income. The block is assembled by buildings from a diversity of building age on a variety of plot-sizes. One large plot is crossing the whole block and inserting larger scale buildings, not in height, but units per floor. One side of the block is accompanied by a pedestrian street which creates a park-like situation. This and the lack of entrances, hence intervisibility, from the neighbouring block on the other side of the street is causing a lack of facilities. All shops available are empty. The special situation is probably caused by the transformation that was done when the bigger scales projects were implemented in this as well as in the neighbouring block. All facilities concerning the performance objective are located in the elder buildings, whereas the 1960s complex, which in general is integrated well into the block and makes it even more permeable, host offices and medical facilities. The 1960s structures in addition provides the block with a public accessible inner court, where business activities and housing are overlapping which makes it a shared space.

<table>
<thead>
<tr>
<th>Selection Criteria Values</th>
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<tbody>
<tr>
<td><strong>S</strong></td>
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<tr>
<td><strong>A</strong></td>
</tr>
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<td><strong>I</strong></td>
</tr>
</tbody>
</table>

1910 - 1960

high income
Urban agriculture / Community garden
Religious Facilities
Inner Court Building
Neighbouring Blocks / Buildings Chosen Block
Shared Space with temporal access
Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Public Street
Neighbouring Blocks / Buildings Chosen Block
Paris Case Study [Block 11]  

Tracing Scopes Of Action

Micro-Businesses,  
Vila Poirrier

Plumbing,  
Rue Francois Bonvin
Rue D’Andigne, Quartier Muette
Location of Block 12
Source of map basis: Apur

Block size [7244m²]
Block proportion [1.54]
Block border length including Inner Paths [364m]
Amount of plots [18]
Intervisibility [4 streets]
Streetnetwork Density [205.4m/ha]
Integration_Vicinity to Centralities [1.3]
General Observations & Interpretations Sample 12

Block 12 is located in the Quartier Muette in the western part of Paris and its inhabitants are of higher income. Interesting to see from the statistics here in addition is that nearly 25% of the population is foreign born population, which in this case might be based in the area hosting also embassies. All buildings in the block feature a representative foregarden, which creates a distance to the street and therefore provides immediately more privacy to the apartments along the street front. In general exists diversity in building age, as some buildings are inserted since the 1959s, which creates a certain porosity concerning the population. The observation was made, that some of the buildings are belonging to companies which use them as offices for lawyers or investment businesses. The block does neither show any facilities concerning the performance objective nor any other service facilities or shops. The scopes of action to run a business for individual inhabitants with a low income are not existent in this block, caused by a diversity of factors that coin it as wealthy residential area, besides there are not many people on the streets. The appearance of the buildings with their distance to the street accompanied by fences as well as the lack of passing by people doesn’t provide conditions for the performance objective.
Shared Spaces _ Mapping Scopes Of Action

Access to Vague / Collective Spaces
Shop Entrance
Main Building Entrance
Empty Facility
Service / Garage Entrance
Inner - Block - Paths with temporal access
Inner - Block - Paths/Streets
Vague / Collective Spaces
Inner - Courts Buildings

Foregarden, Rue Maspéro
Tracing Scopes Of Action

Foregarden, Rue de Franqueville

Urban agriculture / Community garden
Religious Facilities
Inner Court Building
Shared Space
Shared Space with temporal access
Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Public Street
Neighbouring Blocks / Buildings Chosen Block
> Quai de la Loire, Quartier Villette <
Location of Block 13
Source of map basis: Apur

General Morphological Characteristics

- Block size [2455m²]
- Block proportion [1.2]
- Block border length including Inner Paths [198m]
- Amount of plots [1]
- Intervisibility [2 streets]
- Streetnetwork Density [159.4m/ha]
- Integration Vicinity to Centralities [1.7]
**General Observations & Interpretations Sample 13**

Block 13 is located in the Quartier Villette in the north-eastern part of Paris along the Bassin de la Villette, which represents after transformation a leisure space offering a diversity of possible activities. The inhabitants of the block are of lower income which is based in the whole block being social housing.

The block is located between a school and a park along the Bassin de la Villette, even though due to the pupils passing and people passing by towards the leisure facilities along the Bassin de la Villette, no facilities are located in this block. It is built as open block with the open space inside the block being design as meeting place, but due to the vicinity of the big open space this inner open spaces are neither used as leisure space nor as extended working space as there are no facilities. Even though the structure of the block would provide a shared space, under the pre-condition that the inner courts are not fenced, the building typology does not provide any space for facilities concerning the performance objective. This lack of porosity provides conditions for the mono-functionality existent in the block.

<table>
<thead>
<tr>
<th>Selection Criteria</th>
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<td>A</td>
<td>1960 - 1990</td>
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<td>I</td>
<td>low income</td>
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Shared Spaces _ Mapping Scopes Of Action

Accessibility

Entrance Area, Rue Vincent Scotto
Leisure space: Bassin de la Vilette, Quai de la Loire
Rue de Tolbiac, Quartier Maison-Blanche
Fieldwork Paris Block [14]

Location of Block 14
Source of map basis: Apur

General Morphological Characteristics

- Block size [15047m²]
- Block proportion [1.59]
- Block border length including Inner Paths [570m]
- Amount of plots [9]
- Intervisibility [4 streets]
- Streetnetwork Density [155.0m/ha]
- Integration_Vicinity to Centralities [2.3]
General Observations & Interpretations Sample 14

Block 14 is located in the Quartier Maison Blanche in the south-eastern part of Paris, its inhabitants are mostly of lower income. The block’s buildings are assembled projects which somehow divide the block functionally into three parts, which creates a division of functions inside the block. Closest to the main street a facility of the Sorbonne is located, which is a relatively large building with only two entrances. Next is the project ‘Les Hautes Formes’, by Cristian de Portzamparc from the 1970s, as well as another residential complex, which host exclusively dwellings. Finally a zone of administration hosts offices related to the services provided, whereby he biggest one is a health insurance. ‘Les Hautes Formes’ was originally designed including a public inner street being the collective space of the area. Unfortunately the open space of this project was completely closed off, in this way it is impossible that any facilities are located inside the block along the inner street, which in general would provide good conditions for facilities as the complete street is visible from the block’s perimeter. Only the building height of the ground floor area in the whole project is in general not high enough. Currently the block doesn’t include any facilities of the performance objective; the porosity of the block is seen only in a possible abandonment of either the university building or one of the office buildings.

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1960 - 1990

S

1

I

low income
Potentiual Shared Space, Rue des Hautes Formes

Shared Spaces _ Mapping Scopes Of Action

Inner Court Building

Neighbouring Blocks / Building Chosen Block

Shared Space
Shared Space with temporal access
Vague Space [empty facility]
Inner Court Building
Public Street

Neighbouring Blocks / Building Chosen Block
Closed Inner Street,
Rue des Hautes Formes
> Rue du Pic de Barette, Quartier Javel <
Location of Block 15
Source of map basis: Apur
Block size [11722m²]
Block proportion [0.57]
Block border length including Inner Paths [448m]
Amount of plots [4]
Intervisibility [3 streets]
Streetnetwork Density$_{ap}$ [142.8m/ha]
Integration_Vicinity to Centralities [1.7]
Block 15 is located in the Quartier Javel in the eastern part of Paris, at the border of Parc André Citroen which itself is located along the Seine. Its inhabitants are of a diversity of income, whereby the side of the block facing the park hosts the buildings for higher income population, whereas the opposite side among others also hosts social housing. The border situation along the park reduces the intervisible streets to the remaining three, together with the building typology it doesn’t provide conditions for facilities along the park. All other three sides of the block show facilities, mainly for goods of daily use and a cafetaria. An important remark is that the opposite side of the park is further facing a hospital, which helps to raise the amount of people passing by the block in this street. Probably this is the cause why the facilities exist in this place, even though the block is located in a border situation. In general the inner courts are accessible only to the inhabitants of the block, whereas the division of the block into four plots is reflected by a separation of the inner court by fences. The porosity of the block also here is based in the shops of the ground floor area, whereby only the side facing the hospital and both short sides of the block show a sufficient height of groundfloor for facilities.
Shared Spaces _ Mapping Scopes Of Action

Shared Space
Shared Space with temporal access
Vague Space [empty facility]
Inner Court Building
Public Street
Neighbouring Blocks / Building Chosen Block

Empty Shop,
Rue du Pic de Barrette
Paris Case Study [Block 15]

Tracing Scopes Of Action

Café, Rue du Mont Aigual

Hairdresser, Rue Cauchy

Shoemaker, Rue Cauchy
> Rue de Belleville, Quartier Combat <
Location of Block 16
Source of map basis: Apur

General Morphological Characteristics

Block size [22418m²]
Block proportion [1.52]
Block border length including Inner Paths [780m]
Amount of plots [8]
Intervisibility [4 streets]
Streetnetwork Density_{ap} [184.0m/ha]
Integration_Vicinity to Centralities [2.3]
General Observations & Interpretations Sample 16

Block 16 is located in the Quartier Combat in the north-eastern part of Paris. Its inhabitants are mostly of lower income and include 25% of population, which is foreign born, with dominance of Asian population. Even though the main street the block in touching is older than the category of buildings age the block belongs to, the other streets as well as all buildings originate in the period between the 1960s and the end of the 1970s, which clearly characterizes the appearance and influences the performance of the block. The buildings for dwellings in average are high and, somehow balancing this, the public and community facilities like the school and the church have an average height of only two floors. The level inside the block is raised for one floor due to the existence of a parking level, which puts the inside of he block on another level that the public space outside. Due to this and being not accessible to the public doesn’t prepare conditions for facilities inside he block. The only facility that is actually located inside the block, but still close to the perimeter, is the church, which is accessible by the short public accessible cul-de-sac leading into the block. Even though the street is longer and would enhance the accessibility of the large block thus support facilities, it is closed off immediately after the entrance to the church. The facilities concerning the performance objective are located in the groundfloor areas of all four streets and provide goods of daily use.
Waste space inside the block:
Probably a collecting space in case of fire = Potential Shared Space,
Allée Gabrielle D’Estrées
Access to the cul-de-sac for pedestrians, closed for cars, Rue Rampal
Urban agriculture / Community garden
Religious Facilities
Inner Court Building
Neighbouring Blocks / Buildings Chosen Block
Shared Space with temporal access
Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Public Street
Neighbouring Blocks / Buildings Chosen Block
Inner Court, Rue de Belleville

Asian Restaurant, Rue Jules Romains

Asia-Shop, Rue de Belleville
Rue Emile Durkheim, Quartier Gare
Location of Block 17
Source of map basis: Apur
General Morphological Characteristics

- Block size [10510m²]
- Block proportion [1.34]
- Block border length including Inner Paths [669m]
- Amount of plots [5]
- Intervisibility [2 streets]
- Streetnetwork Density $_{ap}$ [162.6m/ha]
- Integration _Vicinity to Centralities [1.0]
General Observations & Interpretations Sample 17

Block 17 is located in the Quartier Gare in the south-eastern part of Paris along the Seine. The block belongs to the ZAC Rive Gauche, the new ‘Quartier Massena’, neighbouring the ‘Bibliothèque National de France’. Its inhabitants are of lower and medium income. The built substance is an ensemble that forms a U. The open side of the block is giving access to the small neighbourhood park inside the block, additionally a pedestrian street is crossing the block, connecting also to the park. The distance between the park and the buildings of the block is created by a threshold, which is either used as private garden for the ground floor apartments, as playground for a kindergarden, as backside entrance and service as well as extended working area for an atelier or is just a green distance zone without any additional use. The court represents a collective space, but with clear zoning, therefore is not really a shared space, even though it has the potential. The few facilities concerning the performance objective are all located along the perimeter, they are bars and restaurants as well as one atelier.
Shared Spaces _ Mapping Scopes Of Action

- Shared Space
- Shared Space with temporal access
- Vague Space [empty facility]
- Inner Court Building
- Public Street
- Neighbouring Blocks / Building Chosen Block
Inner Street,
Rue Choderlos de Laclos
Urban agriculture / Community garden

Religious Facilities

Inner Court Building

Workshop: Crafts/Manufacturing/Artists

Micro-Business: Sale/Trade/Service

Shared Space

Shared Space with temporal access

Public Street

Neighbouring Blocks / Buildings Chosen Block

Architect’s Office, Rue Émile Durkheim
Tracing Scopes Of Action

2. Private Gardens, Inner Court, Rue Neuve Tolbiac

3. Zoom Public Park, Rue Jean Anouilh

4. Public Park in Inner Court, Rue Jean Anouilh

5. Bar, Café, Rue Neuve Tolbiac
Rue Thomas Mann, Quartier Gare
Location of Block 18
Source of map basis: Apur

Fieldwork Paris Block [18]

General Morphological Characteristics

- Block size [3955m²]
- Block proportion [1.4]
- Block border length including Inner Paths [256m]
- Amount of plots [4]
- Intervisibility [3 streets]
- Streetnetwork Density [175.5m/ha]
- Integration_Vicinity to Centralities [1.0]
General Observations & Interpretations Sample 18

Block 18 is also located in the Quartier Gare in the south of Paris. Its inhabitants in this block are of medium and higher income. The block includes in relation to its small surface a relatively high amount of facilities. This is probably caused by the concept of the block which provides space for workshops and ateliers. Currently all facilities are in use, but maybe there is an indicator the location is not really good for facilities due to its border situation along the Seine: Along the main street, which itself is not highly integrated in the context of whole Paris (compare space syntax maps in the attachment), can be found signs for the facilities in this block. On the one hand this can mean that the facilities need support, on the other hand it also could be based in the very young existence of the block, and probably both reasons are contributing. Maybe a reasonable amount of passing by people is provided just by the location close to the Seine. On the one hand the Seine is a barrier that reduces the integration of the area, on the other hand maybe its quay will be used as leisure space, which was not visible during fieldwork which can balance the border situation. In general the court of the block could be used as shared space being one entity to enhance possibilities for the inhabitants as well as for the facilities, as the inner space of the block currently is mainly a distance space with access ways.
Inner court as possible shared space, Rue René Goscinny

Access to Vague / Collective Spaces
Shop Entrance
Main Building Entrance
Empty Facility
Service / Garage Entrance
Inner - Block - Paths with temporal access
Inner - Block - Paths/Streets
Vague / Collective Spaces
Inner Courts Buildings
Tracing Scopes Of Action

Paris Case Study [Block 18]

Brasserie, Quai Panhard

Sign in the main street for the Goscinny bookstore in Rue René Goscinny

A passage to the court as the playground of a kid, Rue des Frigos

Atelierbox, Rue René Goscinny

Box for Shops & Workspaces, Rue René Goscinny

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block
Parc de Bercy, Rue Paul Belmondo, Quartier Bercy
Fieldwork Paris Block [19]

Location of Block 19
Source of map basis: Apur

source:
General Morphological Characteristics

- Block size [4341 m²]
- Block proportion [1.39]
- Block border length including Inner Paths [271 m]
- Amount of plots [3]
- Intervisibility [3 streets]
- Streetnetwork Density $\rho_p$ [138.8 m/ha]
- Integration_Vicinity to Centralities [1.3]
General Observations & Interpretations Sample 19

Block 19 is located in the Quartier Bercy in the south-eastern part of Paris, along the Parc de Bercy. Its inhabitants are of lower and medium income. The built substance in this block is an ensemble, built at once with the appearance of being one building, supported by the fact that the inside of the block is not public accessible and the access is enabled only through passages through the building. The scopes of action concerning the performance objective are located in the ground floor areas of the buildings mainly along the main street, at the corners of the block, as well as along the park, whereby the side of the block facing the park is accompanied by a broad pedestrian street which is quite lively and in other blocks also hosts cafés with front gardens. The direct location along the Park provides the block with a high quality leisure space in very close distance, what is probably causing the reduced user quality of the courts within the block. They are mainly covered by plants, leaving just paths for the access ways. In the bigger court trees are added to the small ground covering plants and the paths are broader too.
Tracing Scopes Of Action

Paris Case Study [Block 19]

Café, Rue de Pommard

Sandwich Shop, Rue Joseph Kessel

Workshop: Crafts/Manufacturing/Artists
Micro-Business: Sale/Trade/Service
Shared Space
Shared Space with temporal access
Inner Court Building
Religious Facilities
Urban agriculture / Community garden
Public Street
Neighbouring Blocks / Buildings Chosen Block
Parc André Citroën, Rue de la Montagne de l'Esperou, Quartier Javel
Location of Block 20
Source of map basis: Apur

General Morphological Characteristics

Block size [2422m²]
Block proportion [1.4]
Block border length including Inner Paths [229m]
Amount of plots [2]
Intervisibility [2 streets]
Streetnetwork Density_{Ap} [118.8m/ha]
Integration_Vicinity to Centralities [1.3]
General Observations & Interpretations Sample 20

Block 20 is located in the Quartier Javel in the south-western part of Paris, neighbouring block 15, its inhabitants are mostly of higher income. The built substance of the block equals one building, several passages connect all open spaces within the block. The block in general is fenced, due to this the open space is not public accessible and the facilities are only located in the parts of the building touching the block perimeter. There are no facilities concerning the performance objective in this block, even though it is also in the same street like the hospital, it is already too far to profit from the enhanced amount of passing by people caused by it. This block is even more located in a border situation, as it is triangular shaped, one side facing Parc André Citroen, and the street with the hospital in this section only hosts the large open space of a big scale building, which is also a park. The corner of these two streets is touching the main route, which is separating the area from the Seine, the third side of the block is touching block 15, but only has entrances to the dwellings, but no facilities. Two offices are located in the semi-souterrain of the street with the hospital, which is the only porosity provided from this block.
Shared Spaces _ Mapping Scopes Of Action

Non Public Inner Path, possible shared space, Rue Cauchy

Accessibility

Entrance into Block = Building, Rue du Mont Aigoual
Tracing Scopes Of Action

Paris Case Study [Block 20]

- Urban agriculture / Community garden
- Religious Facilities
- Neighbouring Blocks / Buildings Chosen Block
- Inner Court Building
- Shared Space
- Workshop: Crafts / Manufacturing / Artists
- Micro-Business: Sale / Trade / Service
- Shared Space with temporal access
- Public Street
- Urban agriculture / Community garden
Parameters

After the fieldwork, the research parameters are put into a table (appendix Overview data all blocks), to make the values comparable, and later on to relate them and visualize the relations within them by means of diagrams. The values of the categories are derived exclusively from the case studies, following they have to be adapted, when case studies are added in later research.

In this chapter, the parameters are described and presented graphically for each block, to allow a direct comparison within one parameter. Each parameter is put in relation to the amount of facilities concerning the performance objective.

The following three maps visualize the amount of facilities of each block in their location, complemented by socio-economic data: level of income, population density and percentage of foreign born population. The amount of facilities is represented by points, differing in size according to five ranges of amount of facilities.

Amount of facilities related to socio-economic data

The blocks with higher amount of facilities are all located in areas with medium population density, whereas the remark has to be done, that the data is from 1999, where blocks 17 and 18 were not yet transformed or not inhabited again yet.

Two of the five blocks with a higher amount of facilities are located in areas with a high amount of foreign born population (above 30%). Concerning the level of income it can be concluded, that the blocks with facilities are not located in the areas with very high income, but are spread among the medium and low income level areas.
Table: Income € (average/year) data on the level of the census unit IRIS 1999
Source: APUR (1999)

- 7090 - 13800
- 13801 - 20500
- 20501 - 27200
- 27201 - 33900
- 33901 - 40700
- 40701 - 47400
- 47401 - 54110

Table: Amount of Foreign Born Inhabitants in % of total population 1999
data on the level of the census unit IRIS 1999
Source: APUR (1999)

- ≤ 10
- 11 - 20
- 21 - 30
- 31 - 40
- ≥ 41
Street-Network-Density

The street-network density is one of the main characteristics referred to by existent research on the urban block.

Two different approaches are recognizable:

- The urban block builds the street mesh.
- The street mesh builds the block.

Arnis Siksna (1997:24) for example is arguing the first case, presenting categories of street mesh concerning their performance for pedestrians, whereby he defines a mesh of up to 100m as convenient for pedestrians, a mesh of 200m as inconvenient in his research on Australian and Northern American urban blocks. The second statement is based on the assumption, that streets are very stable parts of the tissue, and mostly are built before the buildings grow assembled in islands or blocks, “network is primarily defined as infrastructure with a certain structural robustness” (Bérghäuser-Pont, Haupt 2005:65). The system of the network of the public streets regulates, as it were, the composition of the urban blocks (Meyer 2005: 252).

Especially Paris is a strong example for the argument that the street-network builds the block. Haussmann’s Grands Travaux re-structured large parts of the city in cutting new streets through the old tissue. The street as mean of urban transformation built the new blocks, mostly followed by closing of the remaining block fragments to small blocks with a high groundfloor-coverage on a very reduced block surface.

Categories of Values

streetnetwork-density motorized transport
pedestrian streetnetwork-density
calculated for the area of 500/500m around the block
unit [m/ha]

diagrams on next pages: all blocks are presented in an area of 500/500m

New streets are transforming the urban block in Paris (diagram of the left)

Paris’ transformations (right page)
above: Plan showing the new roads cut into Paris between 1850 and 1870
below: Hausmann’s Paris by Alphand
No matter which way around the street-network is looked at, Jane Jacobs (1961: 243) points out in her famous book 'Death and Life of Great American Cities’ that “frequent streets and short blocks are valuable because of the fabric of intricate cross-use that they permit among the users of a city neighbourhood”. But the property of a dense streetnetwork has to be supported also by other morphological parameters as well as governance parameters, because “by too represotive zoning, or by regimented construction that precludes the flexible growth of diversity, nothing significant can be accomplished by short blocks” (ibid.).

The main question concerning this parameter is, which street-network density supports life on a neighbourhood level that is assumed to be relevant for the performance objective.

Coming back to Siksna, and transforming his range of convenient mesh size for pedestrians into the one used in this research (length of street within one ha), the value of street-network-density achieved is 160m/ha, which is in the lower half of the range of values for all public streets derived from the Paris case study blocks.

What is the existent range of street network density in the investigated areas in Paris and added representative case studies from other European cities with the urban block as a main element of the tissue? For the comparison of the Parisian blocks with blocks from other cities, the streetnetwork density for the motorized transport is chosen, because the statement of the pedestrian network would ask for fieldwork on site to be verified, which was not possible for additional cities as part of the thesis.

The comparison with streetnetwork densities from other European cities is added to evaluate the density of the Parisian streetnetwork-density in the awareness that this parameter, as all others too, is underlying also cultural influences, or as in Amsterdam, the necessity of the territory to have canals for the water - drainage which are accompanied then by streets.

On the bottom of the next page, a comparison between the streetnetwork density (motorized transport) of representative 19th century tissues in four cities is shown. Amsterdam DePijp clearly has the highest density of streetnetwork, followed by Paris Batignolles (block case study 6) and the Antwerp sample and finally Barcelona Eixample, which has a 10% lower density than the Paris example and about 30% less than the Amsterdam example.

In this research two categories of streetnetwork density are investigated and compared to each other: for motorized transport as well as including pedestrian streets, permanent
public accessible is a criterion for being taken into account for the streetnetwork in general, paths through parks are not considered in the calculations for the street network density.

On the next two pages the streetnetwork - density for motorized transport and the streetnetwork that includes all public streets are presented. The difference between the two of them shows an increasing streetnetwork density of an average 10% taking a look at all block-case studies. Having a more differentiated look at the different periods of building age, it becomes visible that in the four most recent built blocks, adding the public pedestrian paths increases the streetnetwork density even about 25%. The range of streetnetwork density for the case study block areas, all public streets, is between 200 - 245m/ha in the oldest built-up areas and 140 - 180m/ha in the most recent developments, two blocks occur in an area with even lower density of just around 100m/ha. There are three examples, where all streets were for motorized transport, all three blocks were built in the period from 1840-1910.

It is visible that the streetnetwork density is decreasing with the period of building age, although the location of the redevelopment projects might influence this result, as they are often located in a kind of border situation where the network density is lower because of a neighbouring large dividing fragment.

Having a look at the fieldwork, these blocks performed best concerning the performance objective, that were in a medium to high range of density between 175 and 245m/ha street-length.

As general conclusion can be summarized that the block and the street are interrelating and the properties of both need to contribute to achieve vital neighbourhoods.

Comparison between four samples of a 19th century street-network
Paris, Amsterdam, Antwerp, Barcelona

Paris, Batignolles (Sample 6) 205m/ha
Amsterdam, DePijp 280m/ha
Antwerp, north of Antwerp Central Station 216m/ha
Barcelona, Eixample 185m/ha
Streetnetwork-Density > Motorized Transport
Vicinity to the Vital Centres
Parameters

Topography - Vicinity to Potential Centralities

The integration of the block in the city in general sets potentials in a wider context for what is happening in a block. Being a property of the street-network, the topological analysis gives the possibility to visualize the potential of an area concerning integration. The tool Depthmap was used to visualize the complex relations of the street network, especially its effect in the smaller context of the urban quarter. Space Syntax as method is a configurational analysis developed by Bill Hillier and associates that adds to the concept of connectivity the concept of depth, which is measuring the network-distance steps of adjacency between network components, compare Hillier (2007) and Marshall (2005: 111).

Concerning the performance objective a vicinity to centralities is of advantage, caused by this following potential centralities are chosen for the calculations: Main routes of the whole city, the vital centres, which can be interpreted as the local centres in the divers quarters and finally the main streets of these local centres. In general it can be stated that an overlapping of higher integration in more types of integration means the most potential for a space to be central.

The highest integration within each characteristic is achieved, when a block was touching directly a high integrated street (red or orange). Two points are given for the medium integration (yellow and green), which is the case when a block’s distance to the highest integrated street is not more than 3 topological steps. The lowest integration (light and dark blue) expresses a distance of more than 3 topological steps from the high integrated streets. The topological step of 3 is considered to be relevant, because it is the average depth of a European city (Van Nes 2008:29).

The integration tables of the case study blocks show that especially the newer samples are less integrated, what might be caused by their location at inner-urban border situations like a river or water basin, big urban parks or any kind of big size traffic or technical infrastructure, whereas the blocks built until the end of the 19th century all are embedded in vital centres. The table on the next page makes the vital centres more precise and states the main streets of the vital centres. Finally the main routes for the whole city give an impression on the level of the global integration, which means of regional importance. Partly the high integration overlaps with the high integration of the other two categories, like the main route in block 2 & 16, whereas the main route in block 9 makes clear, that the existence of facilities in this block probably is only caused by it’s location along a main route, as all other properties don’t indicate a high potential.

The table on the left shows, that all blocks with a significant amount of facilities are located in areas of high integration, which states the importance of the topological integration.
Vicinity to the Main Streets of the Vital Centres
Parameters

Vicinity to the Main Routes
Hierarchy of Streets
In the considerations on hierarchy of streets, the question arises which is more relevant concerning the performance objective: the width of a street or its function? The first assumption was, that the function is in direct relation to the width, but having a closer look at the case study blocks, the assumption doesn’t completely correlate with the findings, it occasionally differs.

The more recent a street was built, the less it is possible to read the function of the street only from its width. Relating the parameter of hierarchy of street to the performance objective shows that the property of the function of the street is important to add into the considerations.

If a street has heavy traffic, no matter if the cross section of the street from facade to facade is 20 or 40m broad, it separates a block from the block on the other side of this street. On the other hand a street with the same width can be a pedestrian street, in this way it represents a connecting open space.

Taking into consideration that a street before the mass intervention of the car was also an extended working space, public pedestrian paths could have a role again in being a shared space, also for working.

Hierarchy was chosen to be a parameter following the debate on the relation between the block and the street. Stephen Marshall states in ‘Streets and Patterns’ (2005: 67f) that the only relevant hierarchy is the topological position of a street in a network. Other than that in this research also width and function are considered to be important as they influence the facilities in a block, even though with a lower effect as the topological position, because the function of a street can change.

The parameter here is visualizing if a hierarchy in the street network exists around a block. The case studies show, that the existence of streets of divers hierarchy is not necessary for the performance objective, whereas a look at the diagram on the bottom shows a tendency that the facilities of the performance objective are located in the streets of middle hierarchy, not in the most busy streets, but with a clear differentiation between sale and trade that need a higher amount of passing by people on the streets and direct access to a street with a higher frequency of people, whereas crafts, manufacturing and workshops for artists are more often located in the side streets, possibly because of the lower need of daily direct contact with clients as well as lower rents.
The intervisibility of streets means, whether a building, a facade and its entrances have opposing facades also featuring entrances in a density that all entrances are visible from other entrances and windows in a facade. This parameter is closely related to the existence of entrances, which are discussed separately further on in this chapter.

Referring to the relation between entrances and intervisibility, Akkie Van Nes categorized a range of intervisibility. Starting with the definition of a street as highly inter-visible, if the density of entrances is high and more than 75% of them are inter-visible to one another, she defines three more categories of intervisibility, always getting less. Whereas her lowest category of intervisibility of streets is pointing to streets with no entrances at all or in which the entrances are covered by high hedges and fences, which are defined as non-visible (2005:483).

Concerning the case study blocks in Paris just the two extreme categories of Van Nes’ range of categories are relevant, because all streets which have opposing facades also have high intervisibility in her definition.

Having a look on the diagram on the bottom on this page, there is a clear relation between the intervisibility of the streets around a block and the facilities it hosts. No intervisibility is caused by the lack of a building block on the other side of a street in all case study examples, either a park, cemetery or sports field is neighbouring or a location along the Seine or the Bassin de la Villette. The river is an inner border of the city which also affects the intervisibility of streets. In all cases the entrances of a street lack an opposition. This lack is resulting in the lack of entrances. This lack in turn may cause a reduced flow of passing by people on the streets which is a cause for lower amount of facilities and has a direct effect also on safety; compare Jane Jacobs’ (1961) explanations on sidewalks.
A basic difference exists between blocks being square shaped and elongated rectangular shaped. Through the transformation of Haussmann many Parisian blocks were divided into triangular shapes, what affected especially the depth of the block in a way that the plots within a block were mostly very divers in size. The rectangular Haussmannian block was often very long (1:7) for its width with plots of relatively similar size. Special in this parameter to mention is Barcelona with its 113m/113m perfectly square shaped basic block. On the one hand it was one of the largest blocks built in the 19th century, on the other hand it was special because Cerdà didn’t see a reason why he prioritize one of the two dimensions (CCCB 2009:74). The large scale square of block provided the possibility to build something inside, be it collective spaces or additional dwellings.

From the case studies as well as from the explanations on the Cerdà block in Barcelona as well as from Panerai’s description of the Parisian block can be seen that the proportion is of importance concerning which facilities the block is able to host. In general it can be recognized by the case studies, that the blocks with a proportion of more than 1:4 are suitable mostly for service, whereas the blocks up to 1:2 are also providing conditions for production, depending additionally on the size of the block.

The block-surface is one of the most mentioned morphological parameters in the research on the urban block and is defined by the streetnetwork-density and the block-proportion. The debate on the block surface is a pure meaning of numbers. Dutch urban blocks have an average size of 12000m², ranging from 4500m² up to 22000m² as a stable concept (Komossa, Meyer 2005), Blocks in Antwerp range from 3000m² to 40000m² (Apostel et al 2008), the Blocks of the Eixample in Barcelona have a general size of 12377m², with modifications like merging them to superblocks or dividing a block into parts (CCCB 2009). The Parisian block has an average of 12.000m², whereas the range is bigger, starting from 3000m² up to 65000m² (GIS data, Apur 2009).

Interesting to see is that the average size of the block equals in most cities (for Antwerp this data is not available), one cause for the higher upper limit in Paris maybe originated by the large scale Grands Ensembles regularly spread over the whole city. Their buildings are assembled to blocks, which per definition in Paris equals the island - L’ilot.

Concerning the existence of facilities in a block, the conclusion from the case studies can be done, that the block has to have a certain minimum size (starting from 4500m²) to host facilities, but in general there is no other relevance visible. Facilities of the performance objective exist in smaller and larger blocks, at the same time there are also small to large blocks without any facilities. The block size per se in this sense is not a very relevant morphological parameter.
Block-Border [-Length] Including Public Inner Paths

- B1: 891m
- B2: 1056m
- B3: 302m
- B4: 777m
- B5: 463m
- B6: 590m
- B7: 314m
- B8: 353m
- B9: 294m
- B10: 350m
- B11: 987m
- B12: 364m
- B13: 198m
- B14: 570m
- B15: 448m
- B16: 780m
- B17: 669m
- B18: 256m
- B19: 271m
- B20: 229m
The research question leading to this parameter was driven by the interest if the amount of facilities is rising with a longer border length. In the beginning only the perimeter of the block was taken into account, but in an early stage of the research it became clear, that the block border length has to include existent permanent accessible inner paths.

Starting from the perimeter, the block-border [length] can be extended through inner paths into or through the block. The block-border is the line, where the different realms meet.

The appearance of the border is varying from the perimeter block with its clear distinction between public and private and closed blocks with a fore garden as threshold to the open blocks, often with a more blurred approach to public and private than the traditional block featured. The transformation of the block-border affects therefore two issues: the distinction between public and private, the relation between inside and outside and in the following the use and appropriation of the space inside the block.

The border in its extreme is reduced to the facade, an exchange between public and private in this case happens mainly through the windows and doors in the facade, or in pores within the building. This strict line, that is separating the polarities of realm, can connect to pores along it, that can be named a ‘leeway’: an expansion of the line to an area.

This leeway mostly hosts the scopes of action for people besides the private realm of the apartment, especially the ones of the performance objective of the thesis.

The leeway can take place along the inner path, whereby the inner path itself can be part of the leeway, which can be extended to a shared or collective space inside the block.

Before the emergence of modernity the back street very often was the “space for those activities for which there was little room in the smaller houses: it could become an extension of the kitchen, the laundry and the living room, where food was prepared, linen laid out to bleach, and neighbours could hoist a glass together” (Meyer2005:252).

Despite the changed needs and the enhanced quality of the dwellings, the recent inner path, or shared space emerging in the inside of the open block could also host economic or productive activities, be more than just an extended living room.

Blocks with pores in their interior in this way existed already in traditional urban structures, as can be seen for example in block case study 1, which is a very interesting case study for the inner court to be transformed to a shared space: an extended inner path for flaneurs or tourists strolling through, an extended living room for the people living there, an extended working space and showroom for the people running a business in the same place.

Another example is Cerdá’s design for the Barcelona Eixample, which originated in the middle of the 19th century.
and proposed open blocks with a “distinction between the public street and the semi-public interior of the block” (Meyer2005:254). A further interesting example is Java Eiland in Amsterdam which represents a series of blocks connected through a public inner path that invites to stroll along on a sunny day, provides good conditions as a play ground for children, just the possibility to use the open space as extended working space is not elaborated.

The inner paths in the case study blocks are either inner streets crossing the block or cul-de-sac enhancing the accessibility of the inner parts of blocks. In the following the found systems are explained along the possible action of the realms as well as the depth of accessibility (see also diagrams on the right): The possible action of the realms are related to 6 kinds of situation concerning the depth of accessibility:

The diagram column [B] shows the Depth of accessibility of the block, respectively where the pores are located. Number 1 completely closed block, number 2 a closed block with a threshold between public and private, mostly in form of a fore garden. 3-5 are the types with pores built by open space, distinguished by the depth of permeability, number 3 and 4 represent ‘going through’, whereas number three is a throughway in form of an inner street, whereas block type number 4 features a shared inner court, which can further be accompanied by a threshold between this shared space and the private buildings. Block type number 5 just allows to ‘go inside’ and access the interior probably collective space. Number 6 represents the pores inside the buildings, like a shop. The diagrams of column [A] visualize the relating possibilities of action of the public and private realm. In general can be seen that whenever a threshold or shared space exists a leeway can emerge. Having a look at the diagram below, from the case studies can be further concluded that Service oriented businesses mainly exist inside the block, when an inner street builds a throughway and people are passing, whereas the production oriented facilities also take place in the cul de sac. Finally is visualized, that without any direct access to the public, which equals an extended block border into the interior of the block, no facilities at all concerning the performance objective take place inside. The parameter of the block border is further analysed in combination with other parameters in the next chapter.
The amount of plots within a block was for a long time a model to structure urban territories. “The system of plot division [is] strongly influenced by the system by which land is made available” (Meyer 2005:258).

Paris shows two major differences between the blocks and their plot division, the first is originated in a Faubourg or other pre-Haussmannian types, the second is over formed by Haussmannian transformations. The first shows deep plots leading from the street into the block, often with a big variety in size and with plots inside the block. The plots along the perimeter of the block were more carefully and densified organised, whereas the “interior was allowed to be the place of larger land use and less tight plot subdivision” (Panerai et al 2004:25). The Haussmannian plots are less deep due to the size and proportion of the blocks, their plot-divisions were led by three rules: each plot has to be laid out perpendicular to the street, the plots are divided by a central dividing line in the interior, which is the bisector of the acute angle formed by the streets, and finally each plot should have the same proportion (ibid:19). This attempt to organize the plot division in this regular way intended to achieve harmonic street fronts, but was far not applied that strict. Even though the block-division was done by a common management, the developing of the plots still was done plot by plot by a diversity of people or associations. Later on the development within a block shifted towards a single entity responsible for the whole block.

An interesting example to mention again is Barcelona Eixample. Its special feature of blocks of the same size allows a remarkable variety of plot-division, which was mainly guided by the decision whether to give more importance to one of the block-perimeter-sides, or not (CCCB 2009: 75f).

Concluded from existent research on urban blocks can be stated, that the division of a block into plots allows a development spread over time as well as shared responsibilities.
Further the structure of the plot division is an important contribution to the appearance of an area, as it supports sequencing along a street as well as probably a greater variety in design, with the pre-requisite of additional diversity of ownership.

Having a look again at the comparison examples from Amsterdam and Antwerp, both show a block with at least a double amount of plots per ha than the Paris block samples from the same period of building age. Whereas the Barcelona example presents an amount of plots per ha which is in the lower range of the comparable blocks in Paris of this timeframe.

The diagram with the values of the case study examples presents here a clear result: The 5 examples with a high amount of facilities are all located in blocks with a higher amount of plots. It is also possible to trace the change of responsibilities of about who is building and who is dividing the block into plots from the case study examples. Since the period of 1910 more and more blocks were constructed or transformed by developers and housing associations, which led to far less plot-divisions as can be seen on the left page. This change in the structural organisation of the block is reflected also in the structure of ownership (see table status of ownership in the appendix). Nevertheless also within this parameter exist exceptions, which make it necessary to bring the parameter of Plot-division in relation to other parameters, what is presented in the following chapter.

It is interesting to further investigate, how the characteristic of a relatively high amount of plots per ha, within a European comparison of blocks, is affecting the scopes of action for people in different cities as well as the capability of the tissue to absorb new uses. As the answering of these questions requires further investigation in different European cities, it will be a task for research following the thesis.
The variety of the plot size is another focus concerning the importance of the plot and its properties. The plot size was often related to the importance of the street, for example in Amsterdam, along the main canals the plots were bigger, whereas the radial streets were accompanied by smaller plots (Meyer 2005: 253) - this assemblage of plots relating to the typology of buildings and public space produced a complexity of divers ownership and uses within one block.

This category is chosen as research parameter to find out, if the existence of facilities concerning the performance objective has a correlation with a certain type of plot size and whether various plot sizes within a block support divers uses. For the thesis research the variety of uses is referring to either micro businesses that are related to trade and sale, or facilities for crafts and small-scale-manufacturing, which partly also produce goods.

The plot size is divided into three categories: S / M / L, the categorization is done within the block-case-studies, through GIS calculations with the categorization of natural breaks.

- S - size plots: \( \text{plot} < 1.000 \text{m}^2 \)
- M - size plots: \( 1000 \text{m}^2 < \text{plot} > 2.800 \text{m}^2 \)
- L - size plots: \( 2.800 \text{m}^2 < \text{plot} > 13.100 \text{m}^2 \)

Having a look at the diagram, a tendency is visible, that blocks with a diversity of uses have more or at least two different types of plot size, like blocks 1, 2 and 4 which have a significant amount (30% each) of facilities.

The plot size itself is not of great importance, because the facilities of research are all considered to be small scale facilities, properties like available open space or a separate direct entrance on the plot from public space might be of advantage for a business, depending on the kind of work.
Plot-Accessibility
Plot-accessibility is an issue, when more than one main use is hosted by a plot, this can be apartments and a small-scale-manufacturing (ssm) company, or just separate accessibility for different units. In each case the possibility to serve a plot from more than one side is an advantage. The chosen case study blocks present two different types, back to back plots, and through plots, in addition exist mixtures of these plot types within one block as well as single plot-blocks. Back to back plots are plots with touching back sides, whereas through plots offer accessibility from the front as well as the back side. Plots in a corner location of a block, which have two sides of their perimeter touching public space per definition of a corner, are not considered to be through plots because still the back side of the plot can be without any public access.

The case study blocks don’t present a clear result. The only thing that can be stated is, that single plot blocks (9, 10, 13 and 20) except block 9 in general don’t show a high amount of facilities and no mixture at all. Also the only block composed just of through plots (19) doesn’t have a mixture of uses in terms of service and trade versus crafts, ssm and workshops. The plots with higher amount of facilities and higher mixture are either of mixed plot-accessibility or back to back plot - blocks. To clarify this point, further case studies have to be done, possibly the relating-process of the parameters will give answers.
Most research on the urban block is not explicitly stating the density of the block in terms of measuring the actual built form, instead the population density or dwelling density is given. Densification processes on the other hand play a significant role in the research of the urban block. Being either in the emergence of the urban block over time or the de-densification of urban blocks due to health and security reasons as well as further densification of existing blocks. An example for emergence of the block through densification are the front-street towns in South-Holland, as explained by Han Meyer (2005:252) in the ‘Atlas of the Dutch Urban Block’. Deep plots along the front street were divided in 2 plots due to increasing population, along the back-street in a next step the new buildings were constructed and with further densification between the built mass on the front street and the back street over time a block appeared.

Examples for de-densification can be found in Vienna, where the decreasing population after the WW I provided the administration with the possibility to reduce the amount of built mass inside the blocks to provide more fresh air and daylight inside the block (Panerai 2005:13).

Densification processes inside the block happened for example, where inner city industrial production moved out and the left - over space was filled in with additional buildings, using different typologies like villas.

But these densification processes are performance objectives about the capability of the block to deal with them, and hence not considered to be part of the basic morphological parameters. Instead, the recent built density in a block, resulting from a variety of processes, allows drawing conclusions on which density as well as distribution of density in a block supports facilities. On the one hand the density is calculated by plan area, built-area and gross-floor area and visualized in a single step for all four values using the method Spacemate developed by Meta Berghauser-Pont and Per Haupt (2004, 2009).

On the other hand the drawings on the left page in addition show the distribution of density in the differentiation where the built mass is located, how many floors are built where and what the relation to the facilities is. Having a look at the table on page 258, it gets clearly visible that this kind of facilities is supported by blocks with a certain compactness of built mass in the block, the facilities appear in blocks with a ground space index between 0.6 and 0.8. In addition an average amount of up to 6 floors is of advantage, whereas especially the crafts, manufacturing and ateliers have a tendency to be located in up to 4 floor buildings. Interesting to realize concerning the amount of floors and the compactness of the built mass is, that these values coincide with the values for lively neighbourhoods Jane Jacobs points out in ‘Death and Life of Great American Cities (1961: 279)
Location of Entrances

B1
B2
B3
B4

B5
B6
B7
B8

B9
B10
B11
B12

B13
B14
B15
B16

B17
B18
B19
B20
Parameters

Entrances

Entrances are of importance for the performance of a block in two ways: on the one hand the amount of entrances is referring to separate accessible units of divers size, on the other hand the location of entrances is a condition for what type of use is supported, or for which it might have disadvantages. Especially in the development of the Dutch urban block the individual entry to the dwelling is a constant factor until today, which supports flexibility in use of the single unit (Komossa 2005:7).

Concerning the location of entrances it is differentiated between entrances located at the perimeter and entrances in the inside of the block. As general conclusion it can be said that without any exception, all facilities of the performance objective have direct access to public space in the case study blocks, what in the same time explains that areas in the backside of the buildings which don’t have direct access to the public space don’t have facilities. Possibilities are provided in addition, when inner paths are at least temporary accessible during daytime, and being closed off only during the night.

A further distinction of entrances can be done whether an entrance distant from the perimeter is visible from the block perimeter or not. For micro businesses located inside the block depending on clients passing by or just being found by clients, visibility is of high relevance.

Finally, referring to the findings in the testing phase for the parameters in Amsterdam, it can be concluded that an entrance relating to one single unit instead of multiple units is supporting a flexibility of use of a unit or at least a change of use in the groundfloor of a building.

Interesting to see is that the amount of entrances is getting less the younger a block or its components are, both inside the block as well as at the perimeter.

Height of Groundfloor

The height of the groundfloor in buildings is the lowest level parameter besides the entrances, although it is not that flexible as the entrances, which can be adapted quite easily. The height of the groundfloor in general is fixed as soon as a building is finished, modifications are a big effort and can be done mainly when also the rest of the building is not in use, which means when a building is reconstructed as a whole after two or three decades. A bigger height of the ground floor in this sense provides conditions for changing uses from the beginning and is a necessary complementing parameter to the ones on the tissue and block level.

Most blocks of the case studies showed an average height of the groundfloor of more than three meters, one quarter appear with an average height of exactly three meters or below, most buildings of these blocks are built since the 1960s.

Categories of Entrances

- main entrance to dwellings
- entrance to shop
- entrance to workshop or crafts, manufacturing
- entrance to a shared or collective space inside the block
- entrance to empty shop
- entrance to technic, storage, service or garage

Categories of Height of Groundfloor

- [1] <3m
- [2] >3m
- [3] >5m

unit [m]
Diagram of relations between the parameters done after the explanation of each parameter on its own.
In the last chapter it was already explained, that some of the parameters are in a dependency of other parameters (compare diagram on the left page), like the block surface is derived from the street-network density and the block-proportion. The necessity to check if there exist other relations between the parameters and of which kind they are derives from the comparison of the diagrams that put each parameter in relation to the amount of facilities. Some diagrams visualize parameters that show clear results on their own, whereas other diagrams present exceptions that raise questions on what is causing the exception. Either the question is why a case study shows many facilities, but isn’t in the range of values within one parameter which indicates a good performance concerning the micro businesses, or a case study doesn’t feature any or nearly no facilities, even though the value for the parameter of research would be in the range that supports the performance objective. Following from this, the exceptions have at least the same value for the research as the other case studies, because they enable to search for other relations. A range of values that supports the performance objective within one parameter is relevant, when the relation diagram between the parameter values and the amount of facilities shows a clear pattern or at least a tendency. Some diagrams show clear results already now, others enable at least to see a tendency of which will be the range of values supportive to the performance objective. Parameters like the ‘inner paths’, which present only tendencies are those that include more than one level of categories. Due to the differentiation within the parameter, the amount of case studies is not sufficient to draw clear conclusions beyond the tendencies.

The check which other relations are important and whether there exist different levels of decision concerning the design process, follows after a summary of the observations done on the single parameters, which already provides first guidelines concerning the performance objective.

Before doing the interpretation of relating the diagrams, an explanation is given on how the ranges of values for the amount of facilities are done.

### Range of high performance

The values are divided into groups by using GIS, using the ‘natural breaks’ as categorizing method. The ‘natural breaks’ are classes “based on natural grouping of data values. the class breaks are set where there is a jump in values, indicated by a large step between bars, so block groups having similar values are placed in the same class.” (Mitchell, 1999:48). Due to this categorization, there is only one value in the second highest class, which is the break value at the same time (38).

The classes of values that are considered to form the range of high performance concerning the performance objective are the two highest: which includes four blocks (1,2,4 and 5) that have at least 38 facilities. These blocks count double the facilities than the best of the next highest category.
Guidelines for the performance objective derived from the single parameters

[1] The value of streetnetwork density should be in the range between 175 and 245m/ha, of which 10% can be pedestrian streets.

[2] The block should be in a maximum distance of 3 topological steps to the highly integrated main streets or routes.

[3] The existence of a main route without multiple lanes as street type of the highest hierarchical order surrounding the block supports the performance objective.

[4] The block should have only intervisible streets, whereby one street missing intervisibility can be balanced by other parameters.

[5] A block-proportion of 1:1 until 1:3 is supporting small-scale manufacturing and crafts, whereas a proportion of 1:3 up to 1:5 is supporting services, sale and trade.

[6] The range of block-surface supportive to the performance objective can be far more extended than the existent literature on block research suggests, especially the upper limit is shifting higher, but is not defined only from this parameter.

[7] The block border length without inner paths is at least 450m, including inner paths starting from 750m.

[8] If facilities should be located inside the block the existence of an inner path is obligatory.

[9] A block is divided into plots, whereby the amount of plots in a block that supports micro-businesses of sale, trade, ssms, crafts and ateliers is at least 15.

[10] A variety in plot-size supports a mixture in use like sale&trade as well as ssms, crafts&ateliers.

[11] The ground-coverage of the block shall be between 60 and 75%, whereby the majority of buildings should have no more than six floors.

[12] A block shall have as many entrances as possible from the public to the private, the range derived from the case studies has a minimum of 60 per block.

[13] The height of the groundfloor has to have a minimum of 3m net.
Principles [P] & Remarks [R]
to Provide Conditions for the Performance Objective

After setting the ranges for each parameter, in a next step those blocks are further investigated, that are often within the range of high performing values, but nevertheless show a low performance concerning micro-businesses for sale and trade as well as ssm, crafts and ateliers. This enables to get a more precise statement on the parameters and also visualizes a hierarchy within the parameters, as some are of higher importance than others.

Density
Two blocks that are often within the range of high performance (compare diagrams 1,2,4,9,13,14 on last the pages), but don’t perform well are Blocks 3&8. Both blocks belong to the second lowest category of values (2-8 facilities). Having a look at the diagram of density, it gets visible, that both blocks are too dense to provide facilities. More precise, mainly the GSI, indicating the ground-coverage is too high. Opposite to the range of values for high performance, which is between 0.6 and 0.75, both blocks show a GSI of 0.8-0.9, which means, that nearly the whole ground is covered by buildings.

**Density**
The necessity of open space within the block is a minimum of 25%, but no more than 40%.

Plot-Division
A next question to answer is: How is the open space organized in the block? Having a look at the exceptions within the high performance range of density, Blocks 14 & 15 are interesting to investigate. The starting point is: what is similar to the blocks performing well in other parameters and differs to the low performing ones. Mostly block 14 or 15 is also within the high range of the other parameters, the only parameter they are both far from the high performance range is the plot division [diagram 9 on the last pages]. Both blocks have just 6 respectively 3 plots per ha, in comparison to a minimum of 17 plots/ha of the values composing the range of high performance. In this sense it can be stated that the blocks with a high performance concerning the performance objective present a high amount of plots, whereas the blocks with a low performance also have a low amount of plots. To make this point better visible, another diagram to combine both values is done (see next page). The only blocks within the range of density that perform low concerning the facilities have only a low plot division. This leads to an additional guideline or remark concerning the relation of density and plot division, see next page.
Nevertheless the open space can be organized in divers sizes. Density and plot division thus have a relevant relation concerning the performance objective. Referring to block 3&8 again, both have a sufficient amount of plots per ha, but a density that is too high. A cooperation of both parameters therefore is of importance.

The parameter of plot division on its own also already shows a principle for design, as all block that perform high also have a high plot division (compare diagram 9 on the last pages).

**PLOT DIVISION & DENSITY**

The open space has to have a relation to the plots and shall not be organized as many plots without open space and a large plot with a park next do it.

Nethertheless the open space can be organized in divers sizes. Density and plot division thus have a relevant relation concerning the performance objective. Referring to block 3&8 again, both have a sufficient amount of plots per ha, but a density that is too high. A cooperation of both parameters therefore is of importance.

The parameter of plot division on its own also already shows a principle for design, as all block that perform high also have a high plot division (compare diagram 9 on the last pages).

**PLOT DIVISION**

The block has to be divided into plots. The specific case studies showed blocks with a plot amount of at least 15 plots/ha as supportive to the performance objective.
**Streetnetwork-Density**
Another block which also is an exception in being part of the range in many parameters is block 6, but this is probably caused by its class of amount of facilities, where it is just on the upper limit of its category. Due to this it is not treated as exception. In a next step the parameter of streetnetwork - density (diagram1 on page ) is taken a closer look on. Set aside block 6 and the already explained exceptions of block 3&8, block 16 and 18 are an interesting starting point. Both have a low plot division and are too dense.
Block 16 in addition has a low amount of entrances and an average height of ground-floor that is also to low. The low performance of Block 18 can be interpreted due to its very small surface, which is followed by a short border length complemented by the absence of inner paths. Further it is not high integrated. The amount of plots plays a role again in the exceptions, but does not have a relation with the streetnetwork density.
Derived from this the streetnetwork density doesn’t interfere with other parameters, it only influences the maximum size of the block surface. The principle derived from the parameter on its own is as follows.

**STREETNETWORK-DENSITY / INNER PATHS**

The streetnetwork density should be in the range between 175 & 245m/ha, of which 10% can be pedestrian streets.

**Topology**
In the diagram of the topological integration, the blocks 6, 8 & 3 are within the range, but were already discussed before. Further block 16 is performing well in this category, but performing low in all other relevant categories. This indicates that the topology is an important parameter, which can enhance the performance even though other parameters oppose a high performance. Block 16 is not performing high, but better than blocks which are also not performing in many parameters, but they don’t perform in the topology either. This confirms what the parameter on its own already indicated and leads to the following principle:

**TOPOLOGY**

The block shall be in a maximum distance of 3 topological steps to the highly integrated main streets or routes.

In the diagram on the next page can be seen, that the vicinity to centralities overlaps with the range in the density diagram. Even though there are exceptions too, it is interesting to see, that the high integration of blocks also needs a minimum GSI of 0.6. This correlation with the range of high performing blocks confirms the importance of the topological integration for the performance objective.
Intervisibility
The intervisibility as parameter is important, but already from the intervisibility diagram [4] can be seen, that intervisibility alone is meaningless, derived from the block samples within the range but with a low performance. Exceptions in the other direction, samples that are performing well with only low intervisibility don’t exist. The principle for intervisibility is as follows:

INTERVISIBILITY
The block shall have only intervisible streets, whereby just one street missing intervisibility can be balanced through other parameters.

Hierarchy
The hierarchy of streets is not of high importance, it can only be remarked that all high performing blocks are not located next to a main route with multiple lines, which can due to high traffic be a barrier and have an effect like a not intervisible street.

HIERARCHY
The existence of a main route without multiple lanes as street type of the highest hierarchical order surrounding the block supports the performance objective.
Block surface
The block surface is not of high relevance to the performance objective, but block 18 showed that a certain minimum size might be interesting. The block surface doesn’t seem to be important, as the high performing blocks are spread over a very broad range of values.
The main point that can be stated concerning the block surface is following remark:

BLOCK SURFACE
The range of values supportive to the performance objective shows a much bigger possible surface than suggested in the existent block research literature. This extended range with a shift in the upper limit is made possible due to the support of other parameters, like an extended block border length enabled by inner paths.

Block Border Length
Putting the block surface and border length in one diagram, it gets visible, that also the border length alone is not of relevance. In general block surface and block border perimeter correlate, but the border length also includes the inner paths and therefore shows deviations. As all high performing blocks also have a high amount of plot division, this parameter is added into the diagram. Having a look at the combination of these parameters, it is obvious, that again the plot division is of main importance. All parameters that are performing well, independent of their size, have a high amount of plot division. Big blocks that are performing low show a low amount of plots, whereas smaller blocks also can perform well, when they have a high amount of plot division.

Visualization of the relation between the block-surface, block border length and the amount of plots existent in the blocks.
The block border is built by the block perimeter and the inner paths. A longer block border length provides possibilities for entrances and therefore is of importance.

**Inner Paths**

Three of four blocks performing best have inner paths which extend the block border length from the perimeter between 20% (block 4) and 50% (block 1) and at the same time are shared spaces. Though inner paths alone, without taking into consideration also other parameters don’t provide conditions for micro businesses of sale, trade, crafts and ssm, like can be seen in block 11. This block features an inner path which extends the block border length for 35%, but not a single facility concerning the performance objective is located along this path. The only property which is different from this block to the other ones including an inner path is that the inner path of block 11 only serves to enhance the accessibility of the big plot, but does not connect to any other plots. As also block 16 shows, the plot division and organization of open space are of relevance. Despite its large surface, the inner courts are neither public accessible nor does an inner street lead deeper into the block. It has big courts, but they are not public accessible. The only inner path, a short cul-de-sac, enables immediately a facility (church) inside the block. All blocks mentioned here are shown as diagrams on the next page to visualize the different physical organization concerning the inner paths.

This diagram visualizes the block border length in relation to the amount of entrances with these blocks colored in red that have inner paths independent of the kind of inner path or their length.
Following this, a principle concerning inner paths is relating to the organisation of space and can be stated as following:

**INNER PATHS**

Inner paths have to serve different plots to be a shared space and are obligatory when facilities shall be located inside the block.

**Block Proportion**

The block proportion cannot be put into relations, because it divides all values into two ranges that support either service, sale and trade or crafts, ssm and ateliers according to their form. Using the same surface, a long stretched block achieves a longer border length, hence a longer facade, which enables more shop entrances. The square - like block with the same surface in the opposition provides the possibilities to develop deeper buildings or buildings with open space for a workshop behind the main facility. In general this rule is not too strict an can be influenced by other parameters. Block 1 for example is a long stretched block, but all open spaces of the inner court are connected there is sufficient space for many activities in this shared space. As principle derived from the parameter on its own can be stated:

**BLOCK PROPORTION**

A block-proportion of 1:1 until 1:3 is supporting small-scale manufacturing and crafts, whereas a proportion of 1:3 up to 1:5 is supporting services, sale and trade.
**Principles & Remarks**

**Entrances**
Within the range of high performance concerning the entrances, blocks 3, 9 and 18 are the exceptions. Block three was already explained initially, its low performance is relating to the low amount of plots. Block 9 and 18 perform low in all important parameters, which leads to the conclusion, that the entrances are able to enhance the conditions for facilities, but also are not the only important parameter.

**Height of Groundfloor & Plot Size Variety**
Two parameters that have a certain importance were not mentioned yet. Both, the height of the groundfloor on the level of the building and the plot size variety as further property of the plot division show clear results from the parameter each on its own and provide principles as following:

**Re-checking Plot-Division**
Following all the process of cross checking the parameters, the plot division seems to have a dominating role. Therefore the diagram of the plot division is checked again for whether there are blocks within the range, but don’t perform high, to see if the plot division is the most important parameter. Blocks 7&12 are within the range of plot division, but perform low in all other parameters, which is the proof, that also the plot division alone is not sufficient to guarantee a high amount of facilities concerning the performance objective.
Concluding to this whole chapter, there can be formulated one principle that is framing all others:

**Only the combination of parameters of all levels in a high performance range provides good conditions for the performance objective.**

The parameters of all levels have to support the performance objective to achieve high performing blocks. From the explanations can further be traced, that there exists a certain hierarchy within the parameters. On the level of the tissue & city, the topological integration, which means the vicinity to centralities, is most important, whereas on the level of the block the plot division and density are of high importance, finally on the level of the buildings the amount of entrances is of high importance. The other parameters are necessary to consider too, but they mostly can be balanced by the parameters of the highest hierarchy, when only one parameter is not in the range of high performance.
Diagram of the parameters visualizing the hierarchy among them.
Conclusions & Evaluation

As conclusion, this chapter is reflecting on three issues: A reflection on the findings concerning the research questions, second, a reflection on the method and finally a reflection on the role of the urban block. All three of them are summarizing the state of my research, and at the same present ideas on where the direction the future research will be heading to.

The beginning of the research started with the aim to find out which morphological properties support the existence of spaces for scopes of action, more precisely micro-businesses for sale, trade as well as workshops for crafts, small scale manufacturing and artists, which represents the performance objective. The scopes of action take place in pores, which are part of the ‘leeway’ (Panerai, 2005) that extends space for the public as well as private in a temporary way along the block border. The existence of inner streets extends the block border into or through the block in providing an additional leeway, which inter-relates the public and private within the block’s perimeter. Inner streets have the ability to be shared spaces, which enable a use of the same space for leisure and work, in being a leeway for public and private at the same time, interweaving inside and outside of the block. To reconfirm what was concluded on in the chapter of ‘right to the city’: Scopes of action take place at the block border (which doesn’t equal the perimeter), the line, where the different realms meet.

With the start of the process a broad field of possible parameters that influence the physical appearance of space was derived from morphological urban block research, which left space to discuss and test what was possible and necessary to research concerning the performance objective. With the proceeding process, other parameters were added and some were dropped. The final parameters of this research belong to three different scales, whereby a clear hierarchy in importance is recognized. On the level of the tissue the parameters are ‘streetnetwork-density, topology, hierarchy, intervisibility and block proportion’, whereby the ‘block proportion’ finally is categorized as property of the tissue, because it should be considered in design already in a phase before the block level, when the streetnetwork is established.

On the level of the block the ‘block border length, block surface, plot-division, density and plot size variety’, and on the level of the building ‘entrances and height of groundfloor’ are the parameters of research. The case study blocks with a high amount of facilities enabled to define a range of high performance for each parameter. The properties which are most important and hence considered to represent a first level are ‘topology, density, plot-division and entrances’. To clearly state a hierarchy doesn’t mean, that the parameters of the second level are not necessary. In the best case all parameters support the facilities and contribute to the performance of the block. For the parameters of the second level it’s just possible that one or maximum two are not within their range of high performance, as the first level parameters can balance this lack. As soon as more parameters of the second level are not within their range of high performance, the block’s ability to perform well is reduced.

The use of parameters to connect the existent research with the field work and case studies undertaken, proofed to be a good decision, because it enabled an immediate evaluation with findings from other, already existent research.
To enable an application of the knowledge gained through this research, the relations of the parameters as well as their range of high performance are transformed into design principles and remarks. The main conclusion concerning the relation of the parameters is that all of the principles need to be combined and incorporated into design to achieve high performing blocks. One principle on its own is not of relevance. Further it is necessary that the principles of all levels support the performance objective, because it is for example not possible to achieve a high performance only on the level of the block-parameters, when the topological integration of the tissue level is too low. This also means that when a first level principle is not followed, the block performance will be low, at least concerning the performance objective.

The developed design principles are due to being based on the relations found in the block tissue and blocks of Paris directly applicable just in Paris. The work on the relations and hierarchy might however already indicate more general valid principles. The following work will therefore be extended in two directions: on the one hand to take case studies in other European cities, to be able to find out how strongly the principles are culturally over-formed and to get to know if the set of first level principles is also valid in other cities, except for the precise numbers stated in the different principles. On the other hand checking the performance of the case studies also for other uses should enable an evaluation on the principles of the first level concerning their general importance.

Urban design by means of rules and principles fixes certain morphological properties of physical space, but provides at the same time flexibility in filling this space with a diversity of uses, because it consists of enough porosity or vagueness for the emergence of new uses, the absorption of alternating uses and changing societies. The research allows making a conclusion on the general value of the principles. Even though the research focused on one performance objective, the capability of the investigated blocks to host other uses is visible from the fieldwork findings. Taking a look at the blocks performing well, it gets visible, that all of them are mixed use blocks, what means, that the principles valid in these blocks also probably support other uses. To be able to confirm this, further research needs to be done, as already stated before. Nevertheless, the use of principles and guidelines can provide a design framework that can support the incorporation of a certain focus of performance in urban development plans without fixing a specific design.

Finally the reflection on the role of the urban block is represents an alternating understanding of what is a block to the physical definition done in the beginning of this research. The physical description of what is a block was as following: The perimeter of the block is accompanied by buildings at a minimum of 75%, the block is separated from other blocks through streets that build a network on the same level. After the research undertaken, an important addition can be done: A block is defining a certain type of organization of urban space which has the intrinsic property of proximity. This is analogue to the dense European core cities. The organization within the block can support complexity in terms of capability to combine or host diversity of uses due to its ability to host a diversity of arrangement of built form. The four 1st level principles of the research can support this complexity by providing an organization that allows diversity. The high amount of
plot division indicates a possible division of a whole into parts, which enables that within a single plot, transformations can take place. Further the possibility to host a variety of plot-sizes also contributes to diversity, as different uses have different demands towards the space they need. The high amount of entrances enables to give independent access for different units, which makes the units independent to each other and therefore also more flexible in use. The vicinity to centralities allows a certain range to locate direct or in some distance to the most central streets and therefore provides a diversity of conditions, too. The density principle finally states that besides the compactness, each block has to offer a certain amount of open space which relates the organization of open space via the plots to the block.
Appendix

Table of content

Table Overview Data All Blocks x
Space Syntax Map Vital Centres Overview Paris x
Space Syntax Map Main Streets of Vital Centres Overview Paris x
Space Syntax Map Main Routes Overview Paris x
Status of Ownership x
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
|------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| A    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| B    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| C    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| D    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| E    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| F    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| G    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| H    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| I    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| J    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| K    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| L    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| M    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| N    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| O    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| P    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Q    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| R    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| S    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| T    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| U    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| V    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| W    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| X    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Y    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Z    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
Values of Integration

[3] high integration
[2] medium integration
[1] low integration
Block Samples in their Relation to the Potential Vital Centres
Overview Paris
Values of Integration

[3] high integration
[2] medium integration
[1] low integration
Block Samples in Relation to the Main Streets of the Potential Vital Centres Overview Paris
Values of Integration

- [3] high integration
- [2] medium integration
- [1] low integration
Block Samples in Relation to the Main Routes Overview Paris
Status of Ownership

All blocks are presented with their structure of ownership each with one row of neighbouring blocks to see if there is great variety of ownership within a neighbourhood. A tendency is visible that the more recent the blocks and their neighbourhoods are, the bigger the grainsize of ownership, following this also the variety of ownership is reduced.

Remark: This data is from 1998, since then major changes of ownership due to redevelopment or transformation of plots into communal ownership happened especially in Blocks 1, 2 and 18.


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