

V. Shared Space in Depth Configurations.

1. Domestic configurations, distances and depth

i. Configurations, sequences and activity

The previously studied theories and case studies of territory, proximity, changing values of public-private relationships and its constituting physical, visual and territorial boundaries define depth, and relate as well to a socio-cultural context. Simple or more complex spatial and territorial configurations contain territorial divisions, transitions, gaps or overlap scenarios that constitute the experience of depth at different scales. However, the structural element within depth configurations is **shared or collective space**, one of the important factors to modify the value of a depth configuration within a spatial set-up: the higher the amount of collective spaces within a project, the higher the possibilities to increase territorial depth (see previous chapters). In order to emphasise the qualitative characteristics of depth configurations, apart from quantitative issues, the relation between multiple sequences and shared territories, all within a configuration, has to be studied in detail, starting from domestic sequences till the idea of larger scale **clusters**. This chapter's goal is to disentangle territorial configurations at different scales and reveal the structural qualities of shared territories seen as part of **territorial sequences**.

N.J. Habraken is one of the authors who defines a wider conceptual framework for depth by linking it with the idea of **sequences**, starting with some historical references. He describes walking through ancient palaces as “*progressions of halls of great character, yet devoid of any formal indication responding to specific use*”¹ He mentions that users of ancient palaces passed through space after space in succession, as corridors were unknown or rarely used. In a less rational way than we know now, the users settled into sleeping, eating, meeting others, working etc., without a formal functional distinction. The sequence was defined by **spatial qualities** of smaller or bigger, higher or lower, darker or lighter, enclosed or open spaces within the sequence. E.T. Hall² mentions in a similar way the idea of **sensory shifts** within a sequence and quotes James Gibson: “*Visual impressions which accompany the perceptions of depth over a continuous surface and depth at a contour*”.

N.J. Habraken goes further and refers to the specific description of typological spaces like mezzanine, hall, attic, cellar, stoop, porch that all refer to space itself, as opposed to functional references we use currently. He explains that after the 18th century's rationalisation of the domestic scale, a “fireplace” became a “dining room”. The author uses this references to claim that territorial boundaries between individuals and groups of people were more complex and fluid, for they were less dependent on walls and doors that are currently the operating elements within functional lay-outs. N.J. Habraken calls this the **historical absence of functional specificity**. In other words, the defining elements within the sequence were related to spatial qualities of the configuration. However, besides spatial qualities there was another element defining depth in domestic sequences: **the restriction of access**. “*(...) architecture supported inhabitation by offering a varied topography of spaces and forms. At times, the very entities to which people linked their activities -fireplace, window, sleeping alcove- were themselves like low-order forms, inhabiting the larger building*”³ Indeed, within most classic palaces, a clear indication was made between private and public territories, between individually or collectively used areas: from the four-posted bed to rooms, hidden behind walk-in cupboards or decorative walls indicating different levels of privacy. N.J. Habraken refers to included territories and mentions the disconnection of levels of privacy from functional references: an intimate space does not necessarily need to be a sleeping room, as it is often planned in recent projects.

1 N.J. Habraken, “The Structure of the Ordinary” MIT Press Cambridge 1998, p 132

2 E.T. Hall, “The Hidden Dimension” Doubleday/Anchor Books, New York, 1966, p 191, quote James J. Gibson, “The Perception of the Visual World”, Houghton Mifflin, Boston, 1950

3 N.J. Habraken, “The Structure of the Ordinary” MIT Press Cambridge 1998, p 134



Figure V.1: (image left) “Louis XIV and Molière”, painting by Jean-Léon Gérôme, 19th century. The painting shows the absence of functional specification (official meetings, dinner parties and intimate celebrations happened in the same room) within the interior and illustrate how some spatial elements like the bed define restrictions of access within the king’s room. (image right) Salon Louis XIV (Eastman) Tuileries, Paris (France): sequence of spaces without corridor structure.

(originally published at http://hoocher.com/Jean_Leon_Gerome/Louis_XIV_and_Moliere.jpg)

Drawings or paintings representing daily scenarios within royal palaces or aristocratic residences before the industrial revolution, show the clear indication of private territories within the bigger interior space, seen as a continuous public space with temporal restriction of access. The construction of included territories maintained a certain ambiguity as those areas were not related to activity and because the idea of a **corridor** as a rational way of organising the domicile was still **inexistent**. In those projects, it is interesting to see the adjacency of collective and intimate spaces without spatial differentiation, without separating circuits of access by using corridors. Many territorial sequences then depended on subtle access configuration, the presence of abundant sequential gaps, overlap scenarios, but not necessarily showing long predefined territorial transitions. Besides that, we can notice that the most intimate area was not necessarily located at the very end of the domestic sequence or at the deepest part of the spatial structure: here **deep territorial structures were combined with short physical and visual depth configurations**. Proximity was time dependent and relative. Proximity read as a coherent system of absolute distances, was less important as the spatial set-up was defined by territorial configuration which meant allowing or denying access with an extreme flexibility in time.

ii. Domestic scale, appearance of distance and depth

A. Madanipour⁴ sees the home as the **smallest viable social unit** within space organisation, home as the centre of intimacy, often linked with the concept of family. He presents a historical review of the ways of organising private and public, individual and collective parts of the house, important to frame the discourse of depth on a domestic level. According to the author, classic residential models were defined by a street related public elevation. He refers to the front elevation, with its publicness reinforced by ornaments and details while the back elevation, where cheaper materials were used, represented the private realm. This system was repeated in the way the outdoor space was organised: formal public front yards framed the street while informal private gardens were situated at the back. However, the author tries to prove that the classical house was designed and used as a **private/public continuum**, as opposed to the modern functionalisation that separated the different realms.

⁴ A. Madanipour, “Public and Private Spaces of the City” Routledge London 2003

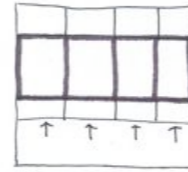


Figure V.2: residential townhouses: front elevation versus back elevation.

According to A. Madanipour, the origins of the modern family house have to be tracked back to the first bourgeois concepts of space. Medieval dwellings obtained no boundaries between the professional, public and private life: mostly there was one single large chamber within the house, seen as a flexible space to cook, eat, entertain, conduct business or sleep. The author adds that in absence of restaurants, bars and hotels, the home itself was a public space, a meeting place. He argues that the notion of privacy did not exist. As a consequence, territorial depth as a successive boundary crossing between public and private areas had a different structural meaning as it has now. The author mentions that the historical change in family definition defines a changing territorial configuration of the home. This can be related to the changing attitude to children: in medieval times, children were often sent to other families to learn good manners. Family had a social and educational dimension, not a sentimental one and the children were not in the centre of the social system. Later, from the 15th century on, the first appearance of schools centred the position of children within society and a radical change occurred: they started playing a central role within the family with spatial consequences for the lay-out of the dwelling. Especially during the 17th century, society was based on material success, social conventions and collective amusements that were not separated activities as it is the case today as we divide professional life from private and social life. During the 17th century, private life of the individual was invented and little by little the nuclear family was constituted: houses became subdivided into larger number of rooms, and as well segregated the servants from the nuclear family. The bourgeois house became above all a residence, separated from the place of work. The house became a more private place even if privacy inside remained unimportant. The result was a larger house, but still without the use of corridors.

It was during the 18th century that the modern family as a social unit was born. The rooms within the house were multiplied and connected through corridors and specialised to cater for different functions: the house had become a place of intimacy, of intimate relations between parents and children that were raised within the parental house. Besides the wide use of corridors, clubs, cafés and other types of public houses emerged: streets and squares turned into promenades where people met. A. Madanipour quotes Philippe Ariès to explain: “*Social and spatial change went hand in hand from dense heterogeneity to segmented homogeneity, creating an intolerance towards, and insistence on, uniformity as manifested in the concepts of family, class and race*”⁵ A. Madanipour resumes that the appearance of the modern family initiated a process of **differentiation and specialisation** in the organisation of space in the house and that this coincided with the separation of dwellings from each other with the appearance of new housing types. Depth as a structural element was introduced in the domestic scale. The townhouse became a terraced house or a semi-detached or a detached house or even a flat. He describes this process of multiplication and fragmentation in France, especially because of the presence of city walls that did not allow horizontal spread and accelerated the process. The author describes a slightly different process during the 18th and 19th century in Britain where there existed a clear predominance of terraced houses till the 20th century and where flats never became popular. However, all process have in common the eventual **separation of public and private areas** and the **functional differentiation** of space. A. Madanipour resumes: he sees it as a spatial differentiation of domestic space: he sees a continuity and unity in housing types for 2 centuries that is only challenged by a gradual disintegration of the units in an individualisation process. From the 18th century on, processes of stratification and differentiation were reflected in the house: bedrooms were separated from living rooms, servants were even more separated from the nuclear family, children lived in separate wings form their parents and balconies were introduced to all sleeping rooms **to increase the**

⁵ P. Ariès, “Centuries of Childhood”, Alfred A. Knopf, New York, 1962

depth to the public realm. Jurgen Habermas⁶ mentions the **creation of physical distance** as a vehicle of new order, to obtain social distance. Functional mixture is taken away and depth is added to establish new power relations. From now on, it seems like every function needs to be allocated a separate space, also associated with a **public-private distinction**, using the corridor system as organising principle.



Figure V.3: historical evolution of private/public gradient within housing typologies, increasing depth as a tool to obtain social distances.

These findings are important to position the role of collective spaces within domestic depth configurations: ancient or pre-industrial housing typologies defined more continuous sequences that were less dependent on territorial boundaries but where depth experience was defined by the changing qualities of space and variation in access restriction. Depth did not depend on the use of corridors: high integration value was no synonym for corridor-based set-ups. Complexity did not depend exclusively on functional specialisation and segregation but on time-related territorial suggestions of integrates or overlapped territories. Later, spacing mechanisms and excessive territorial delimitation seemed to substitute the more flexible configurations, parallel to an increasing obsession for absolute privacy.

iii. Domestic sequences and privacy: the beginning of offset-urbanism

Serge Chermayeff and Christopher Alexander⁷ deal with this increasing importance of privacy and depth within domestic sequences. As mentioned before, they see the different spatial categories based on public-private distinction as a sequence starting with urban-public, urban semi-public, group-public, group-private, family-private till individual-private. They mention that in some cultures there is a clear expression of need for varying degrees of privacy and integrity of domains corresponding to these. An example they give is a primitive settlement in Cameroon where they detect a “*carefully contrived sequence of increasing privacy form the entry to the chief’s domain and women’s quarters*”, or the cumulative set-up in a Sardinian Fortress, a Japanese palace, a Kner temple in Cambodja or the “*sequence of variations on the themes of circle and square, differing in arrangement and dimension*” in a Buddhist Monastery in Beijing.

The authors continue studying privacy and depth by making a list of basic requirements for a residential project, going from efficient parking till demanding clear boundaries within the semi-private domain, or suggesting “pedestrian circulation without dangerous or confusing discontinuities in level or direction.” They present diagrams of possible

6 J. Habermas, “The Structural Transformation of the Public Sphere”, Polity Press, Cambridge, orig. 1962, edit. 1989

7 S. Chermayeff, C. Alexander, “Community and Privacy” Doubleday & Co Inc. USA 1963, p 122-126

combinations that deal with a maximum of these basic requirements, at different scales. One of the diagrams deals with the entrance to the domestic sequence, together with the following issues: “private entry to dwelling, protected arrival, shelters standing space, filter against carried dirt, congenial and ample private meeting space, washing facilities, storage for outdoor clothes and portable and wheeled objects, a one-way view of arriving visitors, a one-way visible access space, maintenance of adequate illumination, and absence of abrupt contrast, arrangements to protect the dwelling from local noise, arrangement to protect outdoor spaces from noise generated in nearby outdoor spaces and partial weather control between automobile and dwelling”.⁸ In their proposal, the whole entrance configuration is set up as a system of acoustic, physical, visual and territorial filters, creating high levels of depth. The second diagram is about the group of various dwellings, dealing with: “access points that can be securely barred, clear boundaries within the semi-private domain, fire barriers, control at source of noises generated in the communal domain, etc.” The last diagram tries to solve the problem of circulation by pedestrianisation and traffic separation, leaving the house in the very heart of a set of offset walls, disconnected from noise, but as well, from the public realm. Their proposals show the growing interest for depth configurations at a domestic scale, in this case with a preference for gradual transitions on a physical, visual, acoustic and territorial level.

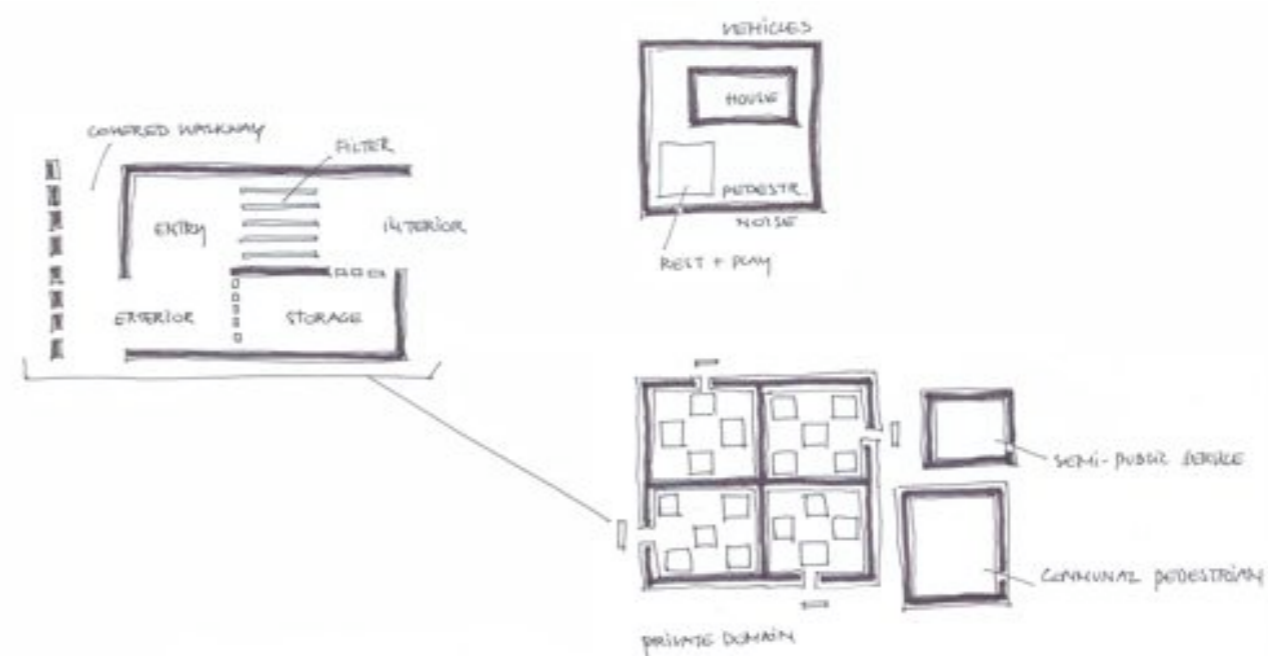


Figure V.4: domicile sequence: privacy diagrams

(scheme after original diagram by S. Chermayeff and C. Alexander in “Community and Privacy” Doubleday & Co Inc. USA 1963, p 164-172)

iv. Decoding domestic sequences

Julienne Hanson studies the effects that physical form and structure of the urban grid have on observed patterns of human co-presence and movement on a domestic scale. The research confirmed that the spatial measure of how integrated or segregated a particular space is within a building or a settlement is a powerful predictor of how busy or quiet it is likely to be. J. Hanson mentions that **integration** is the key by which we can understand the social content of architecture and show how buildings and places function at a collective level. “The important thing about the house is not that it is a list of activities or rooms but that it is a pattern of space, governed by intricate conventions about what spaces there are, how they are connected and sequenced, which activities go together and which are separated (...)”⁹ J. Hanson’s research into the ethnographic record

⁸ S. Chermayeff, C. Alexander, “Community and Privacy” Doubleday & Co Inc. USA 1963, p 167

⁹ J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 2

has been complemented by a study of the evolution of domestic space organisation and family structure in Britain, and by accounts of historic houses and examples of innovative, contemporary domestic architecture.

J. Hanson studies primitive domestic configurations as the !Kung bushmen settlements in the Kalahari desert or compares the Bedouin black tent with the Teda mat tent and the Mongolian Yurt to extract models of access configuration on a domestic scale. She deals with inside-outside relationship, gender-based divisions in the dwelling, visual control, functional integration and varying depth. Representing the houses as domestic configurations of sequences, the author is able to compare patterns: the !Kung fire-home and the yurt are spatially identical to an elementary building, which maps the relational structure “interior-exterior” but which is not yet a space configuration. The Bedouin and the Berber tents however are more complex domestic space configurations. J. Hanson concludes that the former is, configurationally speaking, two contiguous, separate and spatially identical cells, representing the male and female domains, which are linked, or perhaps more accurately separated, by the differentiated space in front of the entrance. The later however is made up of a simple interior sequence of three cells.

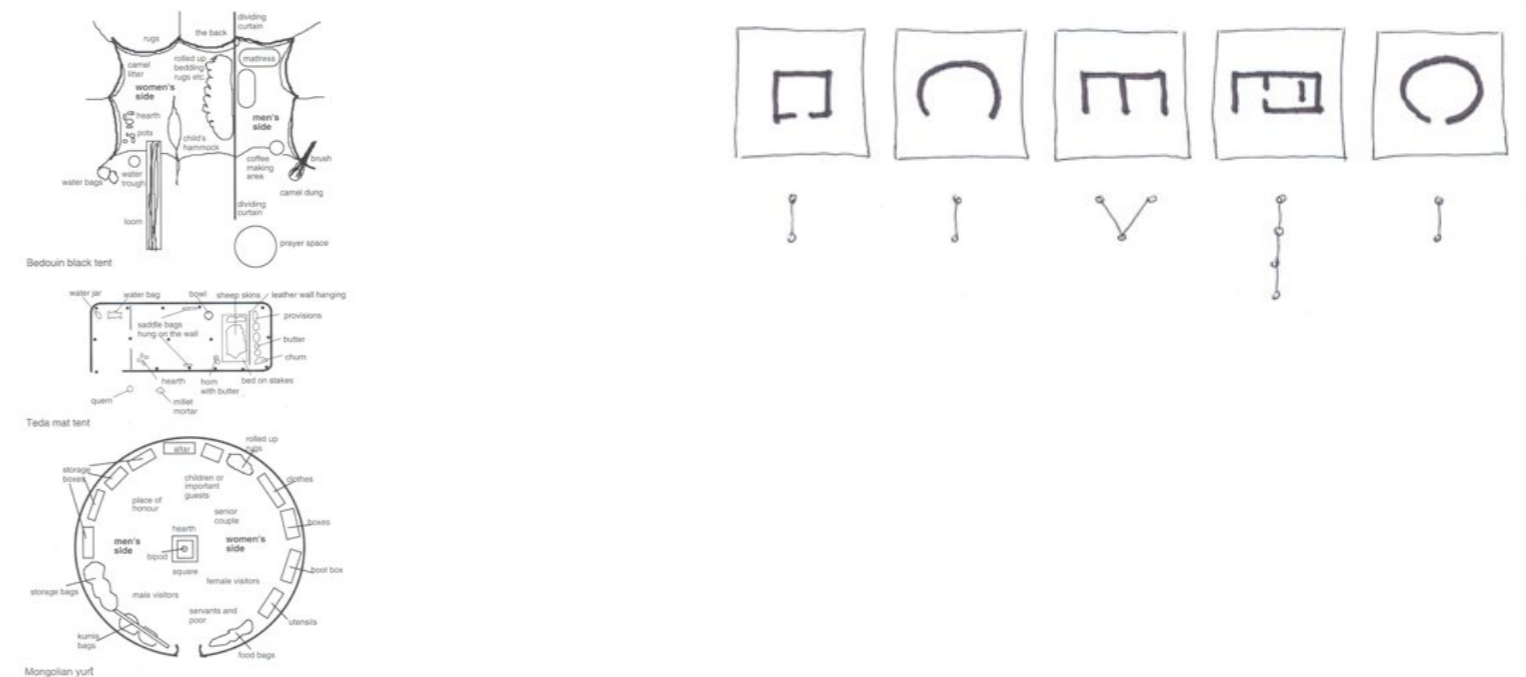


Figure V.5: (Right) Comparison of the plans of three tents and justified access graphs of simple dwellings: the elementary building, the !Kung house, the Bedouin tent, the Teda tent, the Mongolian yurt. (original diagram figure 1.3 and scheme after 1.7 by J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 9, p 24)

Searching for permeability patterns and integration values in domestic configurations, the author studies the relationship between morphology, access configuration and territorial depth in plans and open spaces of four types of houses: she defines and compares the “alpha house”, the “beta house”, the “gamma house” and the “delta house”, showing small variations in access, however with similar shape of the building. All four houses are based on a 3 by 3 square grid, with identical room adjacency. However, from the point of view of **permeability**, the four examples end up being very different. J. Hanson mentions that room adjacency is a pre-condition for permeability but, within this constraint, the same simple “courtyard” form can be radically differently configured to make shallow bush, a deep tree-like sequence, a shallow ringy complex, or a deep ringy room arrangement when this is justified in each case from the space outside. With this study, J. Hanson proves the variables “depth” and “rings” to be fundamental properties of architectural space configurations. *“There can be no more depth from a point in a configuration than a sequence, nor less than a bush. A tree has the minimum number of connections to join the configuration up into a continuous space pattern. Rings add extra permeability, up to a theoretical maximum*

where every space is connected to every other. This enables to begin to measure the degree of depth and relative ringiness of a complex, to capture in numbers the kind of difference we find in architectural objects.”¹⁰

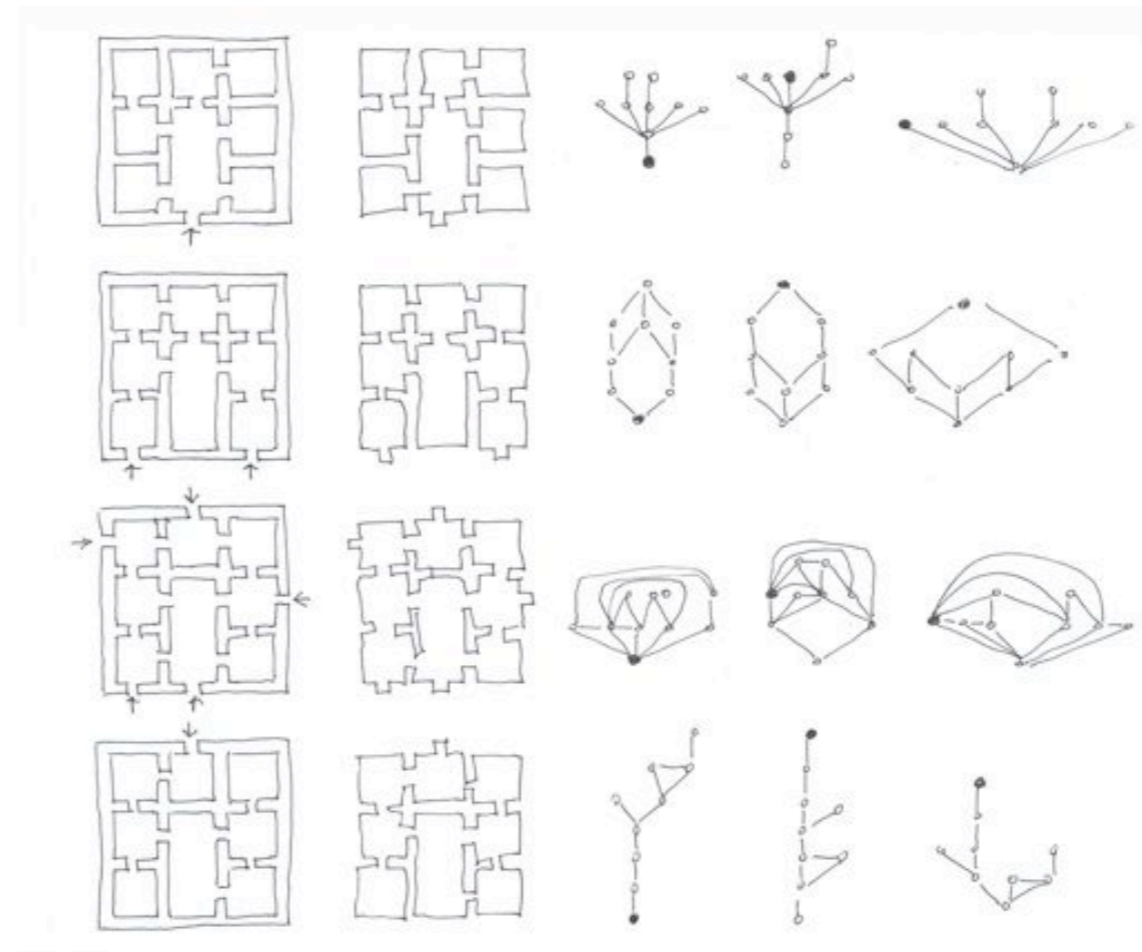


Figure V.6: Plans and open spaces of four “courtyard houses” with corresponding depth schemes. (scheme after original diagrams 1.8 and 1.9 by J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 25-26)

v. Integration value and shared spaces

The variation of depth values within these domestic sequence has to do with the configurational structure: that is the set-up of access control within the complex. Besides that, we saw that, as the house was redrawn from different rooms, the pattern of depth in the graph changed. The depth or shallowness of the whole lay-out varied, often quite dramatically, depending on where you were positioned within it, as we see when we compare the respective views of each of the four theoretical courtyard houses. The author emphasises the concept of **integration** that seems to capture the extent to which each spatial element contributes to drawing the whole configuration together into a more or less direct relationship. The first thing to study is the mean integration value for the four houses, expressing how shallow or deep on average spaces in the complex are from one another. J. Hanson explains that the shallow ringy complex has the lowest mean integration and the deep tree-like form is the most segregative configuration, over twice as deep overall. The shallow bush and the deeper ringy complex have the same mean or overall integration.

¹⁰ J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 27

Besides some theoretical exercises, J. Hanson analyses a heterogeneous collection of 47 17th century yeoman farmhouses from the Banbury region of Oxfordshire to see if any consistencies could be detected in the room arrangements or in the way in which uses are assigned to different parts of the domestic interior. After configurational analysis, the author discovers three distinct forms of domestic space arrangements: the “through-passage plan”, the “single-entry plan” and the “multi-entry plan”, which predominate sequentially up to around 1640 and from 1660 onwards. She detects that these 3 forms are related to the type of family structure: the “open lineage family”, the “restricted patriarchal nuclear family” and the “closed domesticated nuclear family”. A fourth type, based on a sequence, which occurred mainly at the end of the 17th century and throughout the 18th century, is associated with impoverished households in a region where the differences between rich and poor becoming increasingly differentiated with the passage of time.

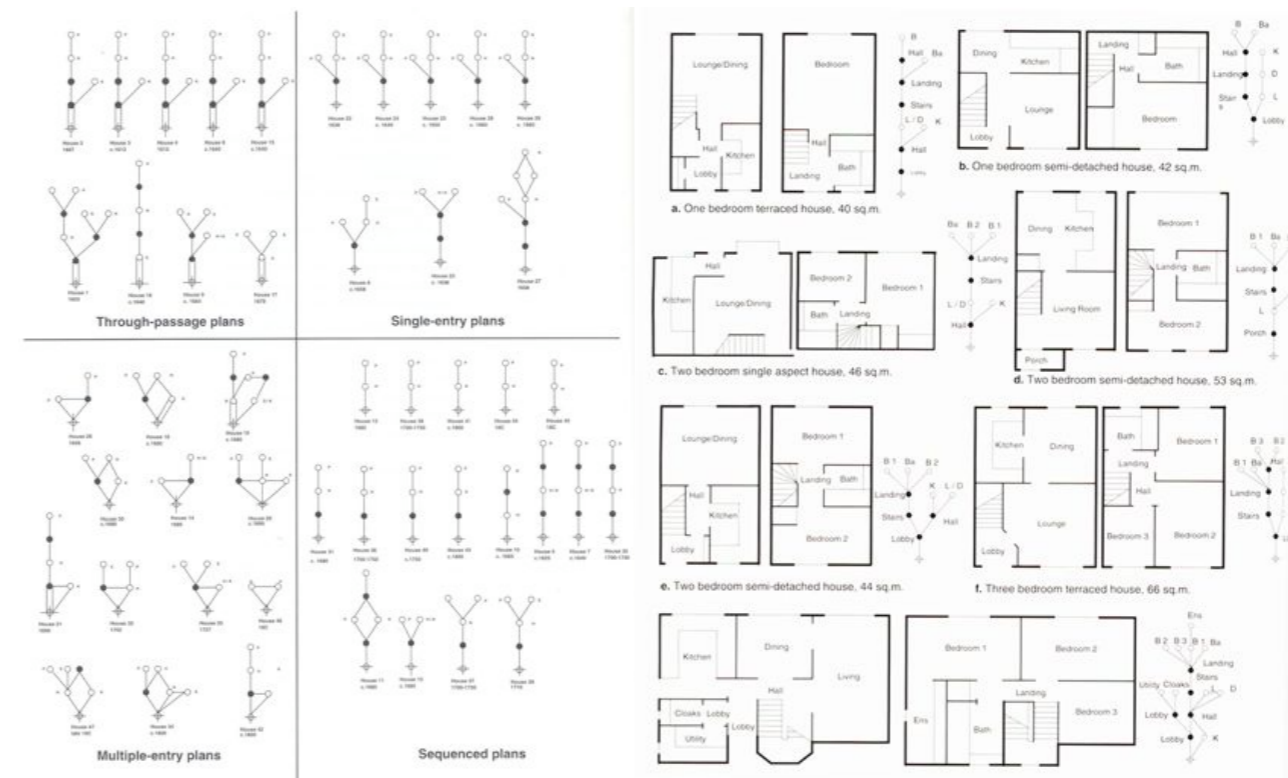


Figure V.7: (left) Configurational house types in the Banbury region. (right) A selection of typical Milton Keynes houses.

(left image from original diagram 2.6 in J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 68)
(right image from original diagram 5.2 in J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 142)

Another study focuses on the Milton Keynes housing project, a new town conceived for 250,000 people in 1967-1970 in Great Britain. The design wanted to offer all the city’s inhabitants a better standard of living, creating a high quality and well-designed environment. After 30 years, in the commercially dominated housing market, only two out of thirty developers claim that their houses are “architect-designed”, related with flexible open floor plans. Here, decisions were made to segregate and physically enclose all different places and differentiate collective from intimate domestic areas. “*Whilst architects and designers advocate flexible, open and well connected domestic interiors, the houses in Milton Keynes are laid out in a much more compartmentalised and segregative manner, at every level of the market.*”¹¹

J. Hanson analyses all different floor plans for territorial structure and concludes that some complexity is missing in the built floor plans, as the integration values are relatively low in all dwellings. Depth is detected as a linear sequence with predefined bifurcations, allowing little spatial interpretation in the house. Besides that, all intimate areas are located deep within the territorial sequences.

11 J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 134

vi. Transitions, corridors and activity groups

The author studies various housing projects, more specifically some residential care buildings and focuses on **transitions** and circulation spaces, together with Justin De Syllas¹² and Freida Peatross¹³. Their work has drawn attention to the differences between circulation routes and spaces designed for activities to take place. These distinctions also exist in ordinary domestic space and the difference between rooms which are clearly intentioned to support activities and functions and those which are intentioned for circulation is a form of spatial labelling. They detect a tendency to see transitions as mere circulation, intended to provide efficient access or perhaps, more speculatively to reduce unwelcome contact by insulating activities and functions from one another. *“Transitions have the effect on insulating spaces from one another as effectively as building walls and the “social distance” which is built into transitions that engineer separations can be appreciated as “felt space” just as much as where the separations are literally built into bricks and mortar of the house.”*¹⁴

They mention the changing use of transitions and corridors in residential projects: initially these spaces were used to integrate, to allow flexibility within the dwelling and a more personal and spontaneous appropriation. With the years, these transition spaces are not only used to organise program but above all, to isolate different functions or users, to **create physical and social distances** within domestic sequences.

J. Hanson quotes Robin Evans to explain this better: *“No longer was it necessary to pass serially through the intractable occupied territory of rooms, with all the diversion, incidents and accidents that they might harbour. Instead, the door of any room would deliver you into a network of routes from which the room next door and the furthest extremity of the house were almost equally accessible. In other words, these thoroughfares were able to draw distant rooms closer, but only by a glaring paradox: in facilitating communication, the corridor reduced social contact. What this meant was that purposeful or necessary communication was reduced and contact, according to the lights of reason and the dictates of morality, was at best incidental, at worst corrupting and malignant”*¹⁵

However, J. Hanson adds that some corridor spaces do allow spontaneous appropriation and in some cases can be seen as social space reducers. According to the author, people sometimes interact more casually in corridors, they may even support forms of on formal social encounter and negotiation which cannot occur in the more structured settings that are provided within rooms. She suggests that interpretations of how transitions feature in domestic space organisation should also allow for this possibility.

Applying the same tone, the author refers to a recent study by Circe Monteiro¹⁶ of how daily family activities are distributed in the houses of low and middle income households in Recife (Brasil). The study sample compromised 101 houses from three neighbourhoods in Recife: a favela, a public housing estate and a middle class residential neighbourhood which contained a mixture of flats and houses. Instead of analysing only the spatial configuration, C. Monteiro directly analysed the spatial patterns of activity in the home. The activities were grouped into five analytical categories: domestic chores (ironing, cooking, washing clothes), interactive leisure (watching television, playing with the children, chatting, meeting with some friends), passive leisure (reading, listening to music, studying and dating), communal needs (drinking coffee, eating lunch, dining), and private needs (having a wash, taking a bath, sleeping, resting or making love).

12 J. De Syllas, “Living in the Community: a Study of the Domestic Life of People with Learning Difficulties Living in Local Authority Hostels”, NHS Estates, 1994

13 F. Peatross, “The Spatial Dimension of Control in Restrictive Settings”, Proceedings of the First International Space Syntax Conference, 2, 1997, 14.1 - 14.16

14 J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 285

15 R. Evans, “Translations from Drawing to Building and Other Essays”, AA Press, London, 1997, p 79

16 C. Monteiro, “Activity Analysis in Houses of Recife, Brasil” Proceedings of the First Space Syntax Conference 2, 1997, 20.1 - 20.13



Figure V.8: Study by Circe Monteiro of domestic configuration in Recife: study of a favela, a public housing estate and a middle class residential neighbourhood
 (original images 10.05, 10.06, 10.07 from J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 295-300)

The author found that activities tended to group in different **integration bands**. The first, most integrated band, contained communal needs, followed by interactive leisure pastimes. Domestic chores were grouped in the second band, as were leisure activities. The third band of activities involved satisfying personal needs, and these tended to adopt a more segregative setting. Activity patterns in the favela houses were strictly integrated, which might be expected where these are likely to be taking place in different parts of the same room at different times a day. The extreme integration was bought at the expense of decreased segregation and privacy when carrying out personal, private, activities. Here privacy seemed to be a matter of time and less of space, particularly because the more integrated activities were located deep within the domestic sequence.

The interesting part of this study is to **consider activity groups** to measure or evaluate permeability and integration. Indeed, depth is a consequence of access configuration as it is defined by the very configuration of activity groups, creating higher or lower values of permeability. (see later chapters)



Figure V.9 : SANAA: an example of depth created by functional configuration: schemes at the 21 century Museum of Contemporary Art Kanazawa, 2003
 (image from “SANAA Works 1995-2003”, Toto Shuppan, Tokyo, 2003)

vii. Dynamic settlements: compounds and houses

The form of habitation studied so far has been static and relatively stable in its lay-out. However, in many cultures the dwellings take on a dynamic aspect: growing, partitioning, reforming, in a cyclical patterns dictated by the evolving composition of the domestic group. According to J. Hanson, some residential projects have to be related with collective space production because houses articulate relations between social groupings, not individuals.

Apart from single or combined housing typologies, more dynamic and complex is the study of residential **compounds**: these could be defined as locally organised collections of circular, single-cell huts held together by a wall. Here, the family concept is not spatialised in a single dwelling: each of the constituent huts of the compound is designed to house one, or at the most two individuals. In this type of collection of huts, available space may also serve to house children or livestock ,while additional huts may be used for storage, cooking, animals, or for the reception of guests. The author describes that the cells are frequently arranged in a rough circle where most of the work of the inhabitants is carried out. Often, walls are raised between the huts so that the boundary of the compound is secured. Some cultures group huts together systematically within the compound. J. Hanson mentions that in many cases, food storage is shared by all the members of a compound, through food may still be prepared and consumed separately.

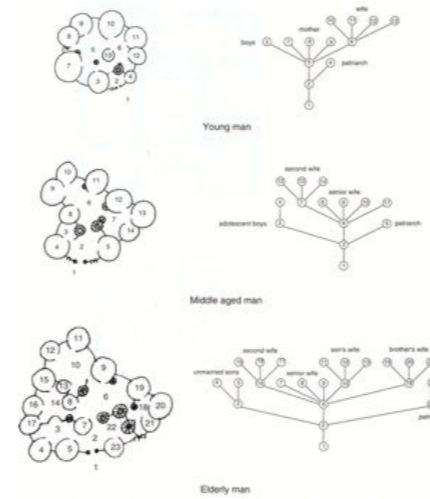


Figure V.10: Tallensi compounds. Time-sensitive spatial set-up and corresponding depth scheme.

(original figure 1.4 from J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 15)

The author mentions the difference with **primitive houses** that can be seen as globally organised and planned **arrangements** of rectangular rooms within a rectilinear boundary, houses that consist of rooms grouped around three of four sides of a courtyard in what amounts to a modular lay-out. Rectangular houses are designed from the outset to accommodate a family, rather than individuals.



Figure V.11: Ashanti primitive house.

(original figure 1.5 from J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 19)

Both compounds and primitive houses accommodate change within the domestic group, but compounds are particularly responsive to processes of growth within the domestic group. A good example are the Tallensi tribe compounds in Northern Ghana. J. Hanson studies changing permeability in time, as the owner of the compound gets older and the social relations in between the inhabitants change, which is translated in a different domestic configuration.

An illustrating case for the primitive houses as arrangements of rectangular rooms, is the type of house built by the Ashanti chiefs in West-Africa: this chiefly residence has become almost urban in its morphology, in that it is made up of a large number of discrete buildings defining a series of courtyards, set within an overall boundary and joined by open courtyards and narrower passages. Here, in contrast to the previous Tallensi case, we have several entrances and they are linked by the court and “streets” so that the whole building takes the form of a number of rings, some of which are internal to the complex and others of which pass through the space outside. J. Hanson adds the example of the Ashanti palace, built in a similar way, based on the courtyard typology. This type of construction is the result of planning successive enclosures or included territories: different depth patterns combined, according to the social or functional schemes. Interesting is to see how the lay-out for visual fields adds another layer to the territorial depth configuration.



Figure V.12: Ashanti palace: functional and spatial set-up, open space and visual fields.
(original figure 1.5, 1.7, 1.27 from J. Hanson, “Decoding Homes and Houses”, Cambridge University Press, Cambridge, 1998, p 19, 39, 43)

The previous examples have in common a series of **shared spaces**, even if the first category of space production (Tallensi) was based on the groupation of individual cells while the second one (Ashanti) contemplates the combination of more collectively used cells as a first step in the spatial configuration: here, the basic module becomes the courtyard, not the single-individual cell. In the first example, access is limited to one entrance and permeability has a linear sequential structure while in the other case of the Ashanti houses, depth obtains the characteristics of a field, a multidirectional access configuration. In this last example, overlap scenarios occur on a different level, at the scale of the courtyard-group while in the first case, distinction, transition and overlap are the consequence of combinations of individual cells.

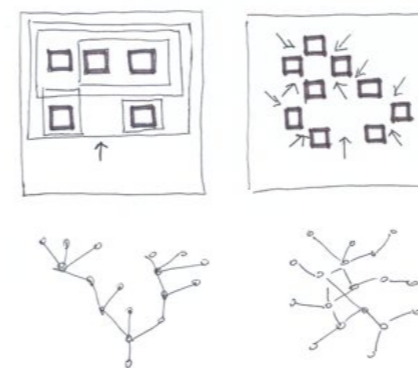


Figure V.13: Tallensi tribe-compound configuration versus Ashanti-house set-up: territorial depth diagram.

A detailed study of the shared spaces within the Tallensi compound shows a very sophisticated territorial configuration, based on territorial transition rather than functional separation. The growing molecular residential structure is in its latest phase divided into 6 macro-cells with an adjacency model defining its accessibility. Some doorways or passages can be wide or narrow but indicate clearly a reduction of collectiveness when moving along the approach sequence. Subtle overlap scenarios or even some sequential gaps increase the experience of depth within the configuration. In this case, territorial depth coincided with visual depth as visibility has a special symbolic value within this tribe.



Figure V.14: Tallensi tribe-compound with indication of territorial transition (indication of collective spaces on various degrees: yellow colour), overlap scenarios (indicated in olive green colour), sequential gaps (waiting areas, indicated in green colour) and territorial depth (red strips indicate the change of level of collectiveness within the dwelling)(original fig. 1.4 from J. Hanson, “Decoding Homes and Houses”, Cambridge Univ. Press, Cambridge, 1998, p 15) (right) Tallensi compounds: territorial depth scheme for general lay-out of the settlement

Depth sequence shows a regular rhythm and repetitive subdivision of movement from areas with less access restriction to zones with high restriction of entry, with an extremely high proportion of collective spaces, planned in different degrees of sharing.

On the level of the distribution of the dwelling in the settlement, all compounds are included within a well defined and controlled territory and reveals the model of included territories in a simple way.

viii. Housing typologies, territorial boundaries and shared spaces

A systematic study of various historic and contemporary housing typologies shows an interesting range of depth configuration models at a domestic scale. For each housing typology, a systematic drawing was made of its containing aggregated, integrated or overlapped territories with a later indication of (higher or lower) levels of collectiveness (yellow colour): only the most individually used territories are left blank (white) in the plans and corresponding diagrams. Territorial boundaries are indicated (red lines, indicating a change of accessibility or access restriction, e.g. between a corridor and an individual sleeping room), together with the detected overlap scenarios (olive green colour) and sequential gaps (spacing mechanisms: waiting areas or buffer zones between different spaces, indicated in light green colour) Within

this series of domestic depth configurations, the more public area is indicated (hatch) and to make possible the comparison between the different projects, this area is always seen as the relative starting point of measured depth sequences. This particular methodology allows detecting some similarities in relationship to the amount, location and structure of collective space in the studied domestic depth configurations.

The systematic study of the following domestic configurations tries to prove that depth not only depends on public/private distinction but on the way collective space is integrated within the project. The configuration of individual or collective use of space is more important than the static and absolute private/public distinction within a domestic sequence. Besides that, the study tries to show that depth does not necessarily coincides with long territorial transitions, that is a linear, systematic and predefined reduction of collectiveness with a regular rhythm: other tactics help to explain the experienced depth.



Figure V.15: Alvar Aalto, residential project Hansaviertel, Berlin, Interbau 1957: (left) containing territories and (right) access configuration (based on original plan of the project, ground floor)

First, some housing typologies share a relatively **high proportion of collective spaces** within the territorial configuration, however with different indications of the levels of collectiveness. The example of Alvar Aalto's residential project for the Berlin Hansaviertel as part of the Interbau exposition of 1957 is set up as a **deep territorial structure**, based on a clear and **regular rhythm of reduction of collectiveness**. In this way, **clearly divided areas** constitute the domestic sequence from the outside public area till the private dwellings. Within the approach sequence, collective spaces start as generously dimensioned spaces and end as rather minimum-sized halls, giving access to a maximum of dwellings (5 per hall per floor). The depth sequence within the housing typology itself shows an important reliance on overlap scenarios that substitute traditional corridors leading to the more intimate sleeping rooms. In the same way, **overlap scenarios** are laid out between the more individual and the more collective areas: between the shared living room and the individual sleeping rooms and the kitchen area.



Figure V.16: Alvar Aalto, residential project Hansaviertel, Berlin, Interbau 1957: depth diagram in territorial configuration and territorial configuration diagram. (right) Territorial depth scheme

The territorial depth scheme shows a deep territorial sequence based mainly on **territorial transition**, less on physical or visual spacing tactics. This project is a good example of depth as a result of **sensory shifts**: the systematic change of

proportion of space and the visual relations defines sequences of spatial qualities, besides functional specialisation. The **integration value** of the shared spaces is relatively **low**, as they are squeezed into the more linear and regular depth configuration, **avoiding multiple access scenarios** or dual orientation. The more collective the use, the more the configuration is based on corridor-based set-up, while at the scale of the dwelling, this rational organising principle seems to disappear.

A slightly different variant to this model is the social residence project by Ove Arup & Berthold Lubetkin in London Highpoint (1934-1935) as an extension to the already existing residence. Similar to the previous project, access configuration is clearly indicated and separates different areas with changing collectiveness. The territorial configuration is based on **territorial transition**. However, in this case, the domestic sequence ends with the use of a **functional corridor** instead of the overlap scenarios in A. Aalto's project. At the entrance of the apartment, an area as a **sequential gap** defines access and works as a buffer space: the entrance provides physical and social distance. The depth diagram shows a similar proportion of collective spaces, even if the gradual reduction of space dimension and collectiveness is not as clear as in the previous project.

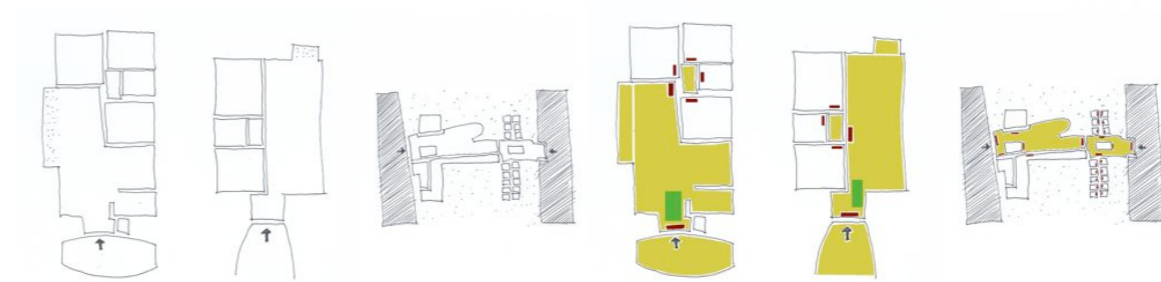


Figure V.17: Residential project by Ove Arup & Berthold Lubetkin, London Highpoint, 1934-1935: adjacent territories and access configuration. (based on original plans of housing typologies and general floor plan)

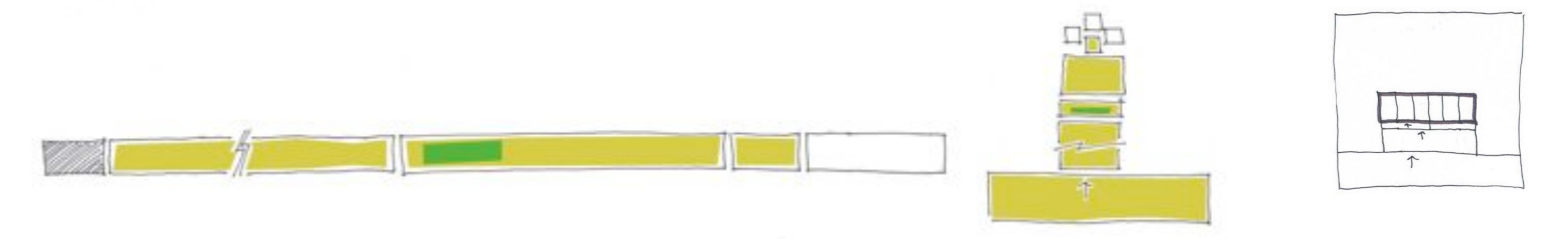


Figure V.18: Residential project by Ove Arup & Berthold Lubetkin, London Highpoint, 1934-1935: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

Within the same category of projects with a relatively high proportion of collective spaces, we find some housing typologies with a deep territorial structure but without the clear rhythm of systematic reduction of collectiveness, or at least where this does not depend on the insertion of explicitly stressed territorial boundaries as it was the case in the previous examples. Here, the deep structure depends more on the structural quality of the collective spaces and the **multiple overlap scenarios**, as opposed to the regular presence of territorial “locks” or “gates”, indicating territorial transition. Examples can be found in more contemporary residential projects like T-house by Sou Fujimoto in Maebashi, Gunma (Japan), 2008, a project in a way representative for many contemporary residential projects.

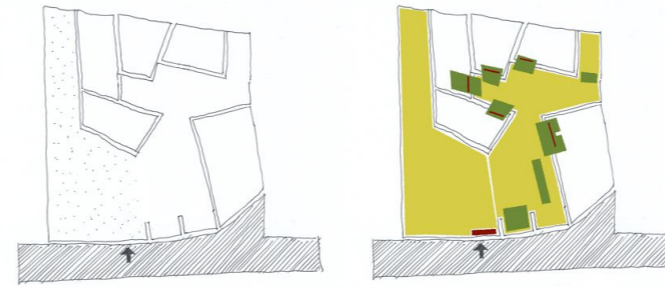


Figure V.19: T-house by Sou Fujimoto in Maebashi, Gunma (Japan), 2008: territorial structure and access configuration (based on original floor plan ground level)

This urban villa illustrates a rather generous and flexible housing typology with a deep structure even when in this case the absolute territorial depth is relatively low: overlap scenarios seem to stretch the experience of depth.

Once the visitor passes the main entrance related to the private courtyard, one enters a collective space that is not subdivided territorially: here we do not detect the gradual territorial division from more public areas towards the more private ones. The **integration value** of this collective space in the territorial configuration is **high**. It is mostly physical depth that is stretched, controlled by the dimensions of the courtyard and the huge living room. Neither can we detect the presence of a functional corridor: it is the huge living room and its extensions that is used as connection element between the different more intimate cells. The very relation to these more individually used cells is designed as a set of coherent overlap areas, materialised as big scale moving doors. Visual depth is reduced to indoor configurations as indoor-outdoor visual relationships are blocked. Very few spacing mechanisms are detected within the project: sequential gaps seem to be not necessary to differentiate territories with individual and collective use. Only the courtyard can be seen as a way of **territorial set-back** but because of the high integration value, does not work as a sequential gap.



Figure V.20: T-house by Sou Fujimoto in Maebashi, Gunma (Japan), 2008: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

A similar pattern can be found in SANAA's Kitagata, Gifu, (Japan) housing typology in an apartment block where the depth configuration consists out of a **high amount of collective spaces**, but as it was the case in the last example, **without the territorial gaps** defining a regular rhythm. Here, building position, staircase location and configuration details, as well as the program distribution, points towards a deep territorial configuration between the collective areas and the most individual cells, almost only based on **subtle overlap scenarios and sequential gaps**. As opposed to the previously mentioned depth sequences defined by territorial transition (as a gradual change of sharing space), this project is based on a **system of longitudinal physical distances**, stretched to its maximum to provide the needed privacy and to allow cross-sections between different domains, stimulating social interaction among the residents and visitors. Here, spacing tactics work simultaneously with overlap scenarios and seem to substitute territorial gates in a subtle and gentle way (instead of adding space as another territorial filter), leaving **different appropriation possibilities** open.



Figure V.21: Kitagata apartments by SANAA, Gifu, (Japan), 1994-2000: access configuration

The proportion of collective spaces is extremely high and defined by many overlap areas, to fill in by the inhabitants, as well as void “intermittent spaces” or sequential gaps, designed as buffer areas to add social distance within spacing mechanisms. Territorial depth scheme shows **successive discontinuous boundaries as an alternative for traditional territorial transition.**



Figure V.22: Kitagata apartments by SANAA, Gifu, (Japan), 1994-2000: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

A second group of quantifying and distributing collective spaces consists out of a series of housing typologies where the proportion of those **collective spaces** within a territorial configuration is **relatively lower** but where, above all, territorial configuration obtained a more **simple structure.**

Heinrich Tessenow’s proposed housing project for the city of Dresden in 1919 can be seen as an early example of this model: each dwelling has an individual entrance, directly related to the street, avoiding territorial in-between spaces. Once inside the dwelling, one arrives in the most formal part of the house that is seen as a filter area to the more private areas, located at the end of the sequence. **Territorial depth is low and simple to read: ambiguity is avoided** within the configuration. Unlike the simple character of this configuration, the amount of collective space can still be seen as moderate, considering the scale of the working-class residential project. Territorial depth diagram shows a clear distinction between the frontal and more formal façade and the clearly backstage-oriented part, connected with the individual garden from which one has only access through the kitchen area, not allowing access from the collective structure. This model could be seen as the prototype of many European residential developments in the first half of the 20th century and defined war and post-war interventions, mostly for working-class housing projects.

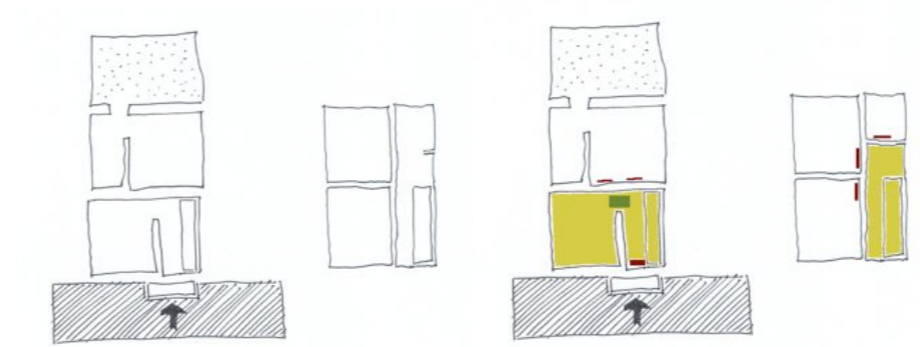


Figure V.23: H. Tessenow, Residential project Dresden 1919: access configuration.

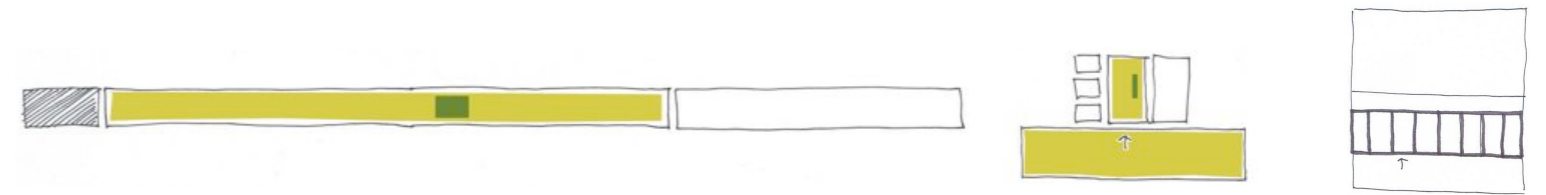


Figure V.24: H. Tessenow, Residential project Dresden 1919: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

Emile Cacheux and Etienne Müller's proposal for labourer's housing, 1853, shows a similar depth structure as the previous project, even if the morphological setting is different. The authors propose a system of repeated individual lots with four adjacent dwellings, placed at the back of the property, providing the inhabitants a larger physical (and social) distance from the most public area, being the street. To stress this tactic of territorial spacing, no real activity is connected or suggested for the front yards: they are conceived as **sequential gaps** within the territorial configuration. In this case depth configuration has a **simple structure** and the architects try to exaggerate or even simulate a higher territorial depth by enlarging dimensions of the front garden. The configuration is based on aggregated territories with lower integration values of the collective spaces. As the dwellings are only touching the adjacent building on one side, an **additional spacing mechanism** is introduced: the space in between neighbours, perpendicular to the public-private axe. Together with the previous example, this project proved to be prophetic for many later residential projects, trying to balance physical visual and territorial spacing mechanisms with relatively low construction costs.

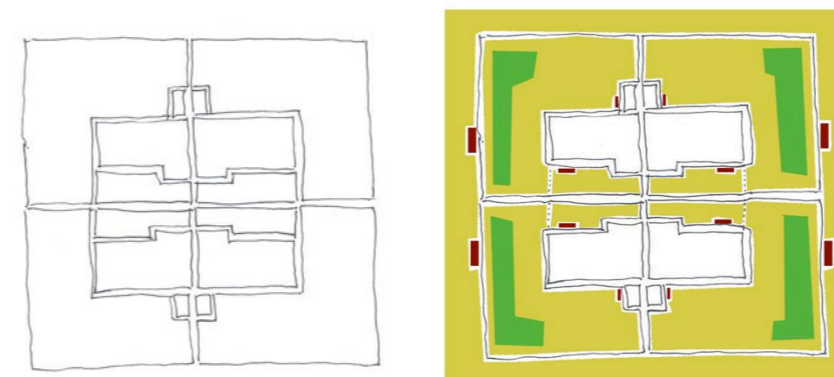


Figure V.25: E. Cacheux & E. Müller, Housing for labourers, 1853: territorial structure and access configuration

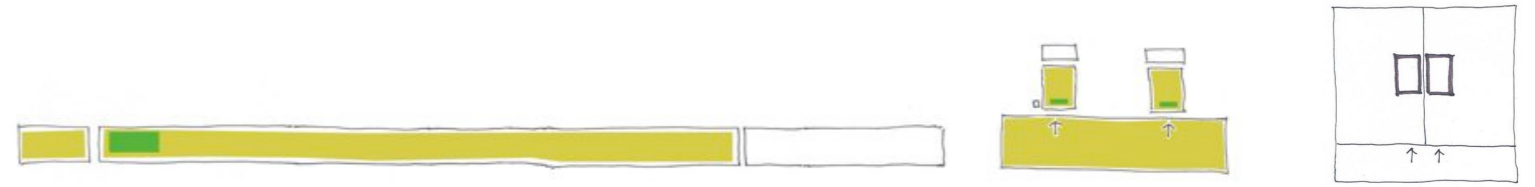


Figure V.26: E. Cacheux & E. Müller, Housing for labourers, 1853: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

More recent popular housing typologies in real estate projects (especially in southern or eastern parts of Europe, where real estate boomed exponentially after the (recent) integration within European political and economic networks) use simple depth configurations, based on **aggregation of individual properties** as huge building lots with detached housing. As a consequence, the domestic configuration has no deep territorial structure. However, this is compensated by a more radical, explicit stressing of the few territorial filters within the sequence: fences are higher, topographical changes are exaggerated, while physical distances are stretched to the maximum. As a result, depth seems to be high within the territorial configuration while in reality it is kept low and compensated by visual and physical parameters to provide the sense of exclusiveness and privacy. To add to the illusion of higher depth, as happened in the case of the Cacheux/Müller project, there is an increasing presence of **sequential gaps** that here have the function of buffer area: increasing spacing mechanisms. These horizontal spacing tactics happen here on both sides of the dwelling.

Nevertheless, this housing typology does not seem to reduce the collective areas at a smaller scale, within the housing typology itself, that refers to the amount and way of sharing space among its inhabitants. At the contrary, at first sight it looks as if the collective area is relatively big in proportion to the individual spaces within the dwelling. Once inside the residence, we detect a high amount of shared spaces, even some of the more individual cells obtain dual orientation, allowing multiple connections with the collective structure as corridor. We can conclude that there is a **shift** of multiple possibilities, dual or triple orientation scenarios from the outside, more collective areas (traditional public space) towards the interior, more restricted areas where sharing space is limited to previously selected users (being family members or invited guests). Besides that, spacing mechanisms as pure tactics of physical distancing, becomes more popular.

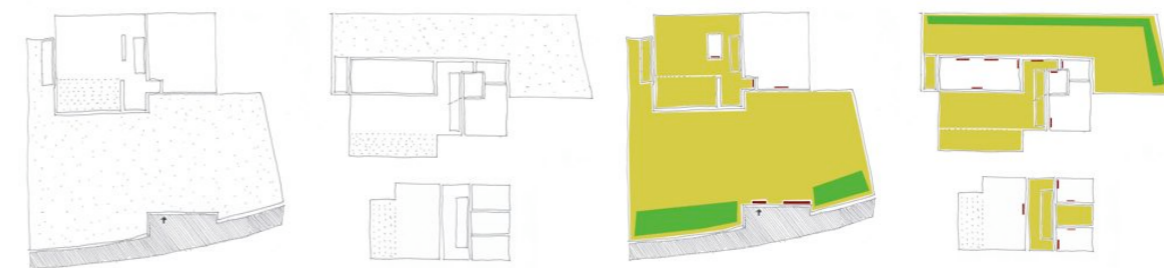


Figure V.27: Recent real estate typologies, 2008-2009, AMB, detached dwelling: access configuration



Figure V.28: Recent real estate typologies, 2008-2009, AMB, detached dwelling: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

Within a third group of housing typologies the **collective structure** within the territorial configuration is **drastically reduced**, while the **amount of territorial filters increases**: more gates, locks or doors condition accessibility within the housing typology. Examples of this category can be found in many recent popular real estate recipes, this time in a more

urban atmosphere (examples here within the Area Metropolitana de Barcelona 2008-2009), designing apartment buildings with more “affordable” promotions. As opposed to the previous, more horizontal dimension of housing development, in these cases the **packing and program efficiency** (and its economic consequence) defines the configuration of the residential project. Often, territorial configuration is **deep without allowing complex configurations**: here again, depth is based on predefined **territorial transitions**: the gradual exclusion of users within the apartment. Inside the apartment, clear distinctions between the different areas are made: micro-scale “cues” are **explicit** and introduce modern principles of **corridor-based distribution**, joining extreme functional specifications (television room, breakfast area, study area...) In this case, territorial configurations avoid any overlap scenario. Almost **no sequential gaps** appear within these configurations, explained by the desire to increase “efficiency” of space (translated in the price for the apartment to be sold). In these projects, the distributing corridors have a **high integration value** but this loses interest as those spaces are completely defined by explicitly stressed territorial boundaries and the spaces are very small with few architectural qualities.

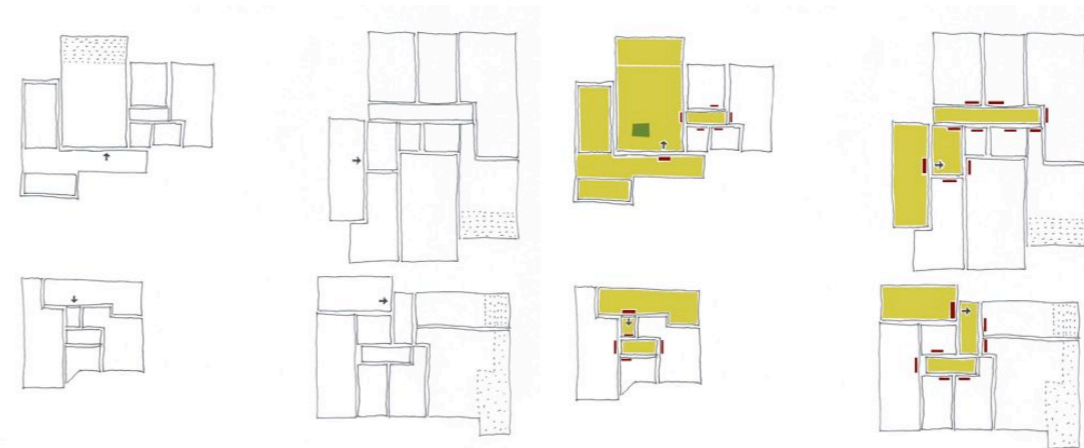


Figure V.29: Recent real estate typologies, 2008-2009, AMB, apartment typologies: territorial structure and access configuration



Figure V.30: Recent real estate typologies, 2008-2009, AMB, apartment typologies: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

The last group of collective space configurations at the domestic scale is when, within a single project, **different typologies are used to achieve territorial complexity**: some parts of the different single sequences connect, cross or even overlap. Alvar Aalto’s housing project in Helsinki (Finland), 1935-1939, is a clear example of this tactic. Here, three different kinds of housing typologies and related configurations are combined and oriented towards different sides of the building: access configuration changes by level and sometimes appears as a system of aggregated territories while at other levels seems to obtain a more integrated character. The territorial configuration is not excessively deep, neither are the three depth sequences very different. However, small changes in orientation, overlapping entrance areas or slight changes in space proportions add complexity to the project. In all individual sequences, overlap scenarios are carefully laid out, allowing different appropriation possibilities. The depth configuration does not depend on long territorial transition of explicit spacing mechanisms but is defined by the very combination and layering of multiple sequences.



Figure V.31: Alvar Aalto, residential project in Helsinki, 1935-1939: territorial structure and access configuration.(ground floor, first and second floor)

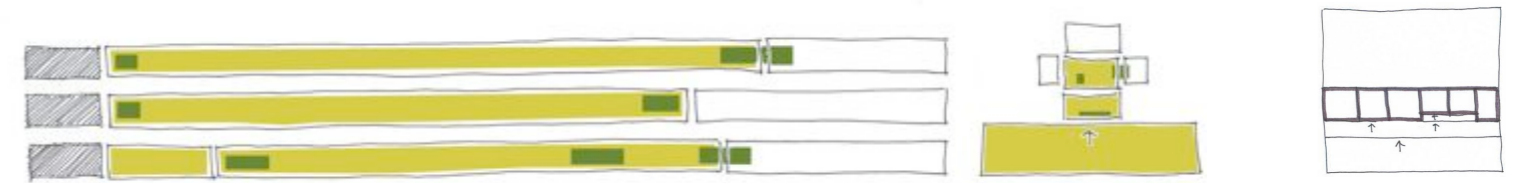


Figure V.32: Alvar Aalto, residential project in Helsinki, 1935-1939: depth diagram in territorial configuration, territorial configuration diagram and territorial depth scheme.

In this project, collective spaces obtain very different integration values and appear as small corridor spaces and as huge open spaces: adjacency, variety and overlap of the different scenarios are the base of the project as a depth configuration. The apparent morphological simplicity contrasts with the complex configurational set-up. Any spacing mechanisms are avoided within this project: overlap seems to define the structural quality of the project.

A similar case can be found in the Brinkman's Spangen project in Rotterdam (Netherlands), 1919-1920, where the architect used different kinds of housing typologies to obtain a certain territorial complexity: again, the particular sequences cross, touch and overlap. The first two levels of the urban block residential building consist out of apartments that each have an individual entrance at the level of the collective courtyard (see later). Above those two levels, the two higher situated levels are accessible from an elevated street from which a duplex dwelling can be reached. Here, each sequence stands again for a basic and not too deep territorial structure, even if territorial transition becomes more important in the general lay-out: a lower degree of compartmentalisation can be found as **corridor elements** help to distribute the residential program. Interesting is the provision of **outdoor overlap scenarios**, especially visible on the level of the elevated street while the ground-level access configuration is based on the creation of **individual gardens** to subdivide part of the ground level of the courtyard (see more in chapter about clusters and streets). In general, collective spaces occupy a relatively high percentage within these housing typologies while territorial complexity depends on the very combination of different configurational models.

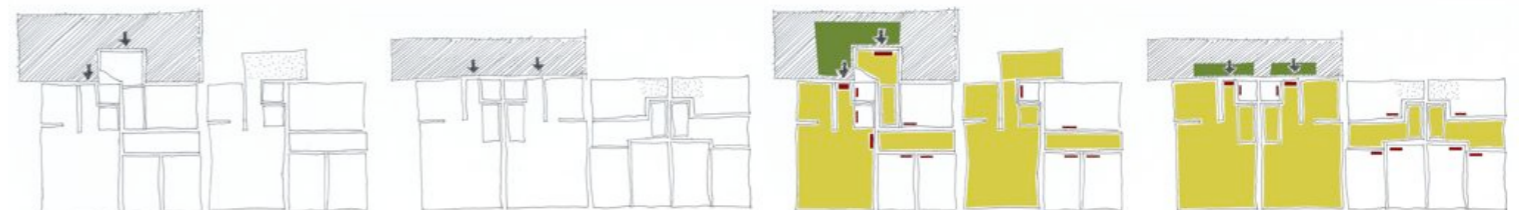


Figure V.33: M. Brinkman, residential block at Spangen, Rotterdam, 1919-1920: territorial structure and access configuration



Figure V.34: M. Brinkman, residential block at Spangen, Rotterdam, 1919-1920, depth diagram in territorial configuration and territorial configuration diagram

ix. Non residential domestic sequences

The previously mentioned comments about depth configurations in domestic sequences, apply as well to **non-residential programs**: some small-scale office projects or commercial programs, galleries or museums often deal with permeability, proximity and territorial boundaries in a similar way. An interesting example is Herzog & Demeuron's recent proposal for the new Parrish Art Museum of Water Mill on the East End of Long Island: the design concept reinterprets the artist's studio, formulating a network of separate but connected galleries in which the Parrish Art Museum's permanent collection will be installed. The project can be seen as a sequence of spatial qualities, of **different territories with changing character and permeability**. The space is conceived as a configuration of **discontinuous itineraries**, exaggerated by inserting systematic "intermittent" spaces, showing the use of **sequential gaps as a constructive tool**. Within the project, the exhibition space is anchored by four galleries inspired by the basic architectural elements of the actual artists' studios, each of which will examine in depth the work of seminal East End artists: William Merritt Chase, Fairfield Porter, Willem de Kooning, and Roy Lichtenstein. In addition to gallery space for the permanent collection and special exhibitions, the new museum will also contain educational facilities, a cafe and an auditorium.



Figure V.35: Herzog & Demeuron's new Parrish Art Museum of Water Mill: territorial structure and access configuration. (based on original floorplans from architect's website)

Here, the domestic sequence configuration is multiple: visitors, living artists and personnel define a triple program, intertwined in a specific way. The project is seen as a "sum total" of simple containers clustered together, with many **in-between spaces as connecting devices**, besides the use of a **formal corridor element** for the more administrative part. The result is a territorial configuration of aggregated as well as integrated territories, defining a rather curious rhythm in movement sequences through the building. Three main elements (the central gallery and two corridor spaces at both sides of the building) within this cluster are conditioning the lay-out in a territorial way. From there, various depth sequences start, once having a loop structure, as it is the case for the three gallery circuits, or sometimes a more traditional

territorial transition based on systematic exclusion of users. Interesting is the use of sequential gaps, the structural in-between spaces that allow visitors and staff to absorb the dense program, creating the intermittent rhythm of depth sequence. Most collective spaces within the configuration obtain a high integration value and define an interesting sequence of sensory shifts.

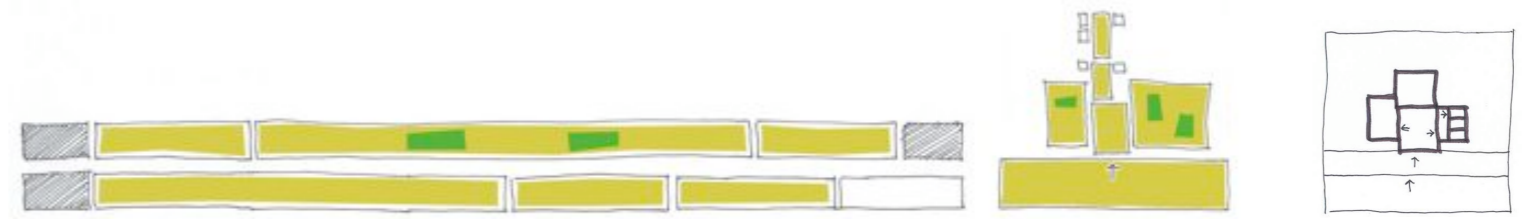


Figure V.36: Herzog & Demeuron's new Parrish Art Museum of Water Mill: depth diagram in territorial configuration (above the visitor's loop and below the administrative lock-based territorial transition) and territorial configuration diagram.

Other non-residential programs at an urban scale incorporate domestic sequences, to integrate the user's ability to read and use the building in the right way. Bigger commercial urban projects like the L'Illa Diagonal in Barcelona, an urban project by Rafael Moneo and Manuel de Solà-Morales, show a particular interest of **conducting domestic sequences** into the heart of the commercial centre by applying successful urban recipes of territorial transitions, overlap scenarios and sequential gaps to reinforce the project's access diagrams. The interior/exterior circulation diagram of the complex is laid out as a traditional urban street network, only turned inside-out. Depth sequences through the building show highly varied patterns of dynamic boundaries of included and aggregated (commercial) territories. Besides that, the authors insisted on the idea of smooth transitions between inside and outside, public and private territories, applying in a coherent way the earlier mentioned concept of collective space within the city.

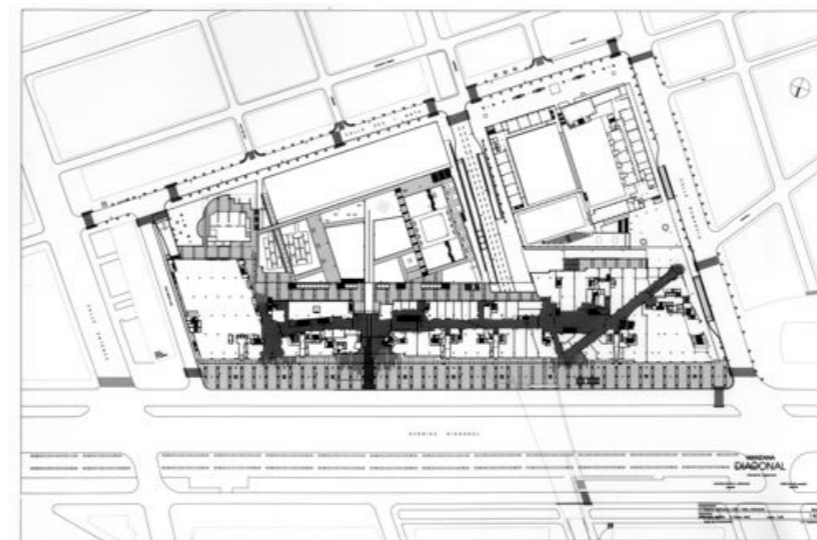
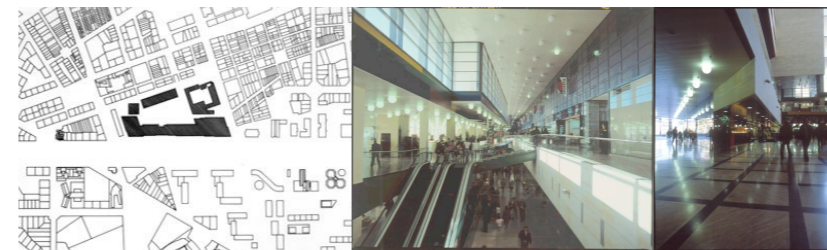


Figure V.37: L'Illa Diagonal project by Rafael Moneo and Manuel de Solà-Morales, Barcelona, Spain, 1986-1993. (images from the architect's web-site)

Another example of depth reading in a non-residential domestic sequence can be presented by studying Fumihiko Maki's Hillside Terrace mixed-used project in Daikanyama, Tokyo (Japan), 1967-1969. Here, a triple depth configuration was integrated within the project: on one hand, F. Maki lays out an **exterior domestic plaza**, situated at a parallel setback from the street on a lower level. Second, the architect designed a residential sequence with a more **linear approach** while the third component consists out of a **permeable interior plaza**, connected to various commercial areas and apartments. The project can be seen as a complex puzzle of various territorial sequences with each a different structure and depth. The residential sequence starts at the street side: by gently changing topography, the author introduces the entrance gallery as a first **overlap scenario** where residents leave their bikes or the inhabitant's children play. From this open but differentiated space, one has access to the staircase that leads towards the higher situated corridor, partly open to street views, and giving access to individual setbacks as individual entrances to the duplex apartments. These have a very simple territorial set-up with no excessive proportion for collective spaces: the lay-out is rather repetitive and presents rather low integration goals.

The other part of the project is organised through a more centrally located interior hall with triple orientation: it connects with the three surrounding collective territories. It combines the commercial activities with residential part of the program: one huge apartment with dual orientation and deep territorial structure (based on territorial transition and functional segregation) sits next to a small studio with shallow depth.



Figure V.38 : Maki's Hillside Terrace in Daikanyama, Tokyo (Japan), 1967-1969: access diagram (plans from D. Mackay, "Viviendas Plurifamiliares: De la Agregación a la Integración", Gustavo Gili, Barcelona 1980, p 30-33)



Figure V.39 : Maki's Hillside Terrace in Daikanyama, Tokyo (Japan), 1967-1969: depth diagrams in territorial configuration (shops sequence above, residential duplex below) and territorial configuration diagram

Depth diagrams show a higher proportion of collective spaces within the territorial configuration, presented as a combination of various sequence models: **long linear, longitudinal sequences** combined with **shorter compact and centrally located areas** that work as distributing system, situated inside or outside. The rich experience is the consequence of combining various overlap scenarios and variety of depth configuration, allowing more flexibility and possibility of spontaneous space appropriation among residents and visitors.

Within domestic sequences, being residential projects or other kinds or mixes of program, depth is defined by the amount of shared spaces within the configuration. However, it is the very nature, the structure and position of those shared spaces that affects the reading of depth: access distribution, spatial separations or gaps, territorial transitions or overlap territories can increase or decrease the value of depth on the level of physical, visual or territorial configuration. The **integration value** of the **collective spaces** explains the structural quality within territorial configurations, more than quantitative considerations. Depth does not exclusively depend on the amount of aggregated territories or increasing systematic user exclusion within a sequence. As well, functional specification and compartmentalisation affect the depth reading of the territorial configuration. Depth experience depends not only on territorial configuration of access but can be stretched, reduced, exaggerated or minimised by introduction of transitions, overlap scenarios or sequential gaps on a physical, visual and territorial level.

2. Clusters and streets: configuration, distance and depth.

i. Clusters

The study of shared spaces within domestic configurations and the found conclusions asks for a similar review on a slightly bigger scale, leading to the idea of **clusters**¹. Here, the concept of shared spaces is even more important as it is the main constituting design parameter for the urban project.

A cluster is more than just a group of buildings. Peter and Alison Smithson² defined clusters as “*a coherent structure with a certain tension between its defining elements*”. This idea goes back to the CIAM X conference in Dubrovnik in 1956 where a new generation of architects emphasised the idea of human nature, identity and belonging as opposed to rational and strictly functional design principles. TEAM X, with P. and A. Smithson as prominent members, emphasised the idea of clusters and related it with the notion of “*associations*”, a basis ingredient for complex urban life, as they pointed out. Clusters might refer to the presence of **included or overlapped territories**, less on the appearance of aggregated territories.

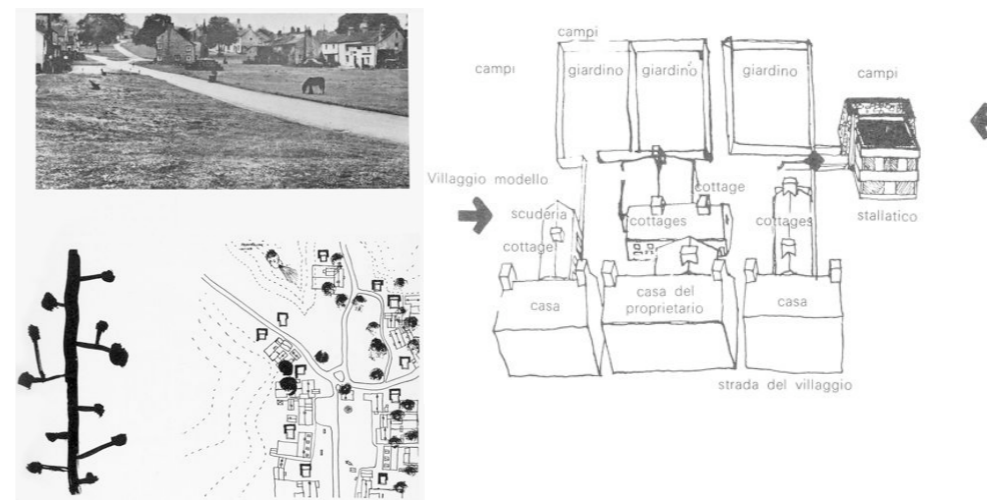


Figure V.40 : (Left) Example of cluster by P.&A. Smithson, “Urban Structuring” (Right) Cottages as example of cluster. (original image in P.&A. Smithson, “Urban Structuring”, Studio Vista/Reinhold, London 1967)

Peter and Alison Smithson use the example of old English rural settlements to illustrate the “*belonging*” between buildings and inhabitants. In the above picture and diagram, they explain the visual, morphological and territorial relationship between houses, storage buildings, paths, vegetation and its users. When imagining entering the shown landscape, one feels like intruding a slightly private territory, the one where there exists a strong connection between the environment and among its inhabitants. One detects an area of included or overlapped territories where a certain access configuration is laid out in away to complement the morphological set-up. P. & A. Smithson mention an underlying structure of **interval and overlap** to achieve the effect of cluster. They study traditional cottages and the way access was configures to extract recipes: the group of buildings is easily recognisable as a unit within the landscape: a system of walls, fences reinforces the introverted position of the main buildings. Besides that, multiple access is defined around the set of included territories of which some obtain a more or less private character. Visual control, related to access configuration guarantees social control and stimulates social relationships. Many connections and a certain compactness characterises the compound.

¹ According to the Cambridge dictionary “a group of similar things that are close together, sometimes surrounding something” or “a group of similar objects growing closely together” (also see old English “clott”: a thick mass of material stuck together)

² P.&A. Smithson, “Urban Structuring”, Studio Vista/Reinhold, London 1967, p33-38

The authors use the idea of clusters as a design tool and apply it at different scales: the domestic scale, the scale of the street and the neighbourhood or the scale of the city.

The main idea is to lay-out a certain program in a way that the **shared spaces** become the element holding all the pieces together. Within this cluster, permeability or depth obtains a complex structure of intervals and overlap, showing **high integration values**, as B. Hillier or J. Hanson would argue. The levels of depth are relatively high, as the cluster consists of a series of shared spaces that play a central role and coherently are located in the very centre of the project. It is interesting to see how references to proximity, permeability and territorial boundaries are simultaneously and complementary defining the condition of clusters.

S. Chermayeff and C. Alexander explored the idea of clusters to fulfil the promise of **community and privacy** within urban projects. In their proposed theoretical design model, the authors combine guidelines for accessibility, for enclosure, perfect orientation, permeability and functional individual and see this as a **collective program**. The previously mentioned diagrams they drew up to deal with each parameter separately (filters, locks...) are finally combined with an abstract non-specific model for residential project. IN this final model, they define 20 houses per cluster, calculating 3100 sq.ft. per house and a density of 14 houses per acre or 51 persons per acre. *“The plan is the translation of our analytical diagrams into a cluster that could be incorporated in a linear or superbloc sector plan with highway access or in smaller units with one-way service road access. A complete pedestrian walk-way system links all units. Community and service structures form a barrier between vehicles and pedestrians and a focus for community activity.”*³

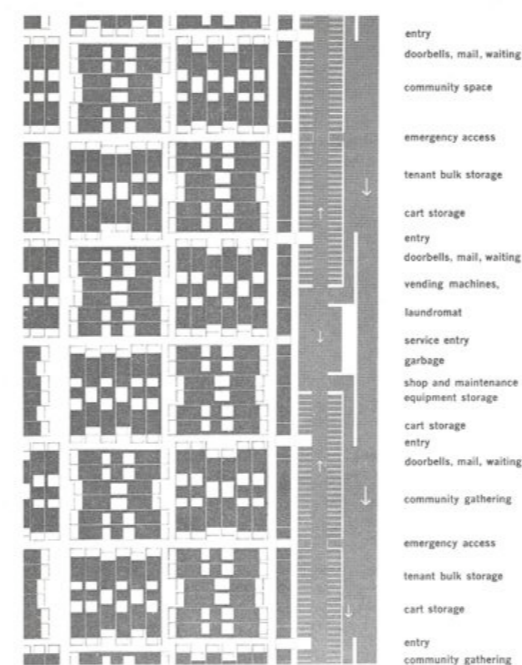


Figure V.41: Urban cluster by S. Chermayeff and C. Alexander.
(original image by S. Chermayeff, C. Alexander “Community and Privacy” Doubleday & Co Inc. USA 1963, p 206)

The whole set-up can be read as a discourse on **depth configurations** in its physical, visual and territorial understanding. The describe a combination of multiple sequences as “entry-doorbells-mail-waiting-domicile-community spaces-emergency access”, all laid out to guarantee maximum isolation where needed and at the same time stimulate communal relationships between inhabitants.

In this model we notice that first, private and public domains are strictly segregated and separated by enclosing walls. Second, all sequences are planned and could be understood as **territorial transitions**, leaving almost no space for overlap

³ S. Chermayeff, C. Alexander, “Community and Privacy” Doubleday & Co Inc. USA 1963, p 206-207

scenarios, in contrast to P. and A. Smithson's idea of cluster. Here, barriers are coherently seen as “locks”, being filter spaces, reinforcing the idea of transition. Besides that, we can detect an almost complete absence of real collective or shared “public” spaces, as all “community gathering spaces” are all situated within the (semi-)private domain, that is after a certain succession of access restriction. The territorial model of this proposal is based on accumulation of **semi-permeable boundaries** with minimum amount of overlap scenarios where privacy dominates over sharing facilities. Functional lay-out helps to define a model based on “distancing”, this turning out to be a prophetic declaration of popular contemporary spacing mechanisms.

ii. Neighbourhoods, communal spaces and urban cohesion

Looking for urban manifestations of clusters, A. Madanipour mentions that neighbourhoods are defined by **identity and difference**, finding spatial shape: public-private distinctions can make patterns of social life. Recent trends of “micro-urbanism”, where **communities** are promoted again as main ingredients for urban clusters, condensed in a simple set of public spaces, ask for a review of the relation between communal spaces and clusters. The author refers to Lewis Mumford who already in 1954 pointed out the importance of the neighbourhood as a structural unit. He argued that neighbourhoods are a social fact and “exist whenever human beings congregate”⁴. Neighbourhoods became “an essential organ of an integrated city”⁵, as the author suggests. The neighbourhood had to be defined by its limits and by its focal point and keep an upper limit of growth and extension, being a maximum capacity for this unit of 5,000 inhabitants while he conditioned the success of them by the presence of “a civic nucleus to draw people together and an outer boundary to give them the sense of belonging together”⁶. Raymond Unwin had written about the need for a clear definition of the various areas of the city and how it was necessary “to foster the feeling of local unity”⁷. In a similar way, in the 1920s, Clarence Perry proposed neighbourhood units as **design units**. The idea focused mainly on mobility and traffic accessibility and calls for cul-de-sac solutions to reinforce the idea of belonging within the unit. He proposed that arterial roads would bypass rather than penetrate a neighbourhood unit, thereby protecting the unit from through traffic. The created hierarchy of relatively poorly connected streets deters traffic from “rat running” through the unit, as Matthew Carmona⁸ suggests.

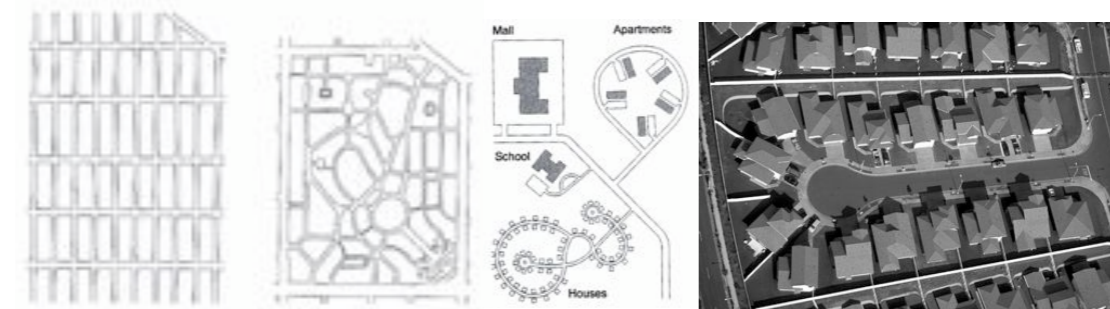


Figure V.42: (Left) Comparison between the grid and the idea of arterial roads not penetrating the unit, by Clarence Perry and the Neighbourhood units in the Regional Plan of New York and Its Environs, 1929 and cul-de-sac territorial organisation: cause for territorial fragmentation and reducing depth values. Right: permeability and depth in go-through neighbourhood and cul-de-sac unit (Right) Cul-de-Sac Sub-Division in a Honolulu Area.

(images left from M. Carmona, ed. “Public Spaces, Urban Spaces” Architectural Press, Oxford, Burlington, 2003; image right: photo by Alex Maclean)

4 L. Mumford, “The Neighbourhood and the Neighbourhood Unit” Town Planning Review, vol. 24, p 258

5 L. Mumford, “The Neighbourhood and the Neighbourhood Unit” Town Planning Review, vol. 24, p 269

6 L. Mumford, “The Neighbourhood and the Neighbourhood Unit” Town Planning Review, vol. 24, p 263

7 R. Unwin, quoted in L. Mumford, “The Neighbourhood and the Neighbourhood Unit” Town Planning Review, vol. 24, p 262

8 M. Carmona, ed. “Public Spaces, Urban Spaces” Architectural Press, Oxford, Burlington, 2003

The direct consequences for depth are obvious: applying cul-de-sac recipes to residential projects causes depth configurations with **simple predefined linear structures**, based on a final bifurcation and associating the most **individual territories** with the **end of the linear sequence**. The main goal justifying these cul-de-sac strategies is to foster close neighbourhood relationships, **reducing social distances, trying to load shared spaces with social content**. The cul-de-sac neighbourhood unit had to be increasingly associated with pedestrian movements, silence and privacy. However, many projects where this principle was applied show problems of lacking social control as the flow of people is equally reduced as its motorised traffic. This might be related to the **lower integration values of the collective spaces**. Besides that, designing cul-de-sac units creates a stronger bipolar space model where front-stage and back-stage are more articulated and urban interpretation is less stimulated or allowed.

Within all these proposals and theories, there exists the common idea of compressing and sharing space, of clusters that were related with enclosure, privacy, security, intimacy, identity and communication. However, much attention goes to morphological issues as shape or proportion of open spaces, less to the social level included within this concept. A. Madanipour⁹ asks himself about the role of public space within these conceptual constructions of communal residential projects and warns for the use of public space within as a **vehicle of market operation**, as the conflict between exchange values and use values has a major impact on the shape of cities and the life of its citizens. The author refers to New Urbanism doctrines where we can find a residential equivalent of business parks, industrial parks and shopping malls, using the idea of “shared public space” as an attraction point.

However, the question should be: what is the character, role and position of real shared spaces within neighbourhoods? Should those spaces be without any access restriction? Should they always have a central location within the cluster? Should there be transitions or overlap scenarios when defining territorial boundaries? How do cluster projects relate to models of proximity, permeability and territorial boundaries and which are the possible recipes?

iii. Collaborative housing, communal settlements, moshav and kibbutz

Related to the idea of clusters and communal spaces in urban residential projects, Dick Urban Vestbro¹⁰ mentions **collaborative housing** and defines it as “*neighbourly housing with shared facilities*”. He explains that **cohousing** means housing with more space and services for communal use than are to be found in conventional housing. Besides that, the added value lies in the co-living of different generations and different types of relationships in one cluster. The original idea is Swedish and refers to “*kollektivhus*” where each household has its own apartment but at the same time has access to communal spaces. In other words, **dual orientation** is one of the main conditions for the cluster set-up, next to the idea of shared spaces and facilities.

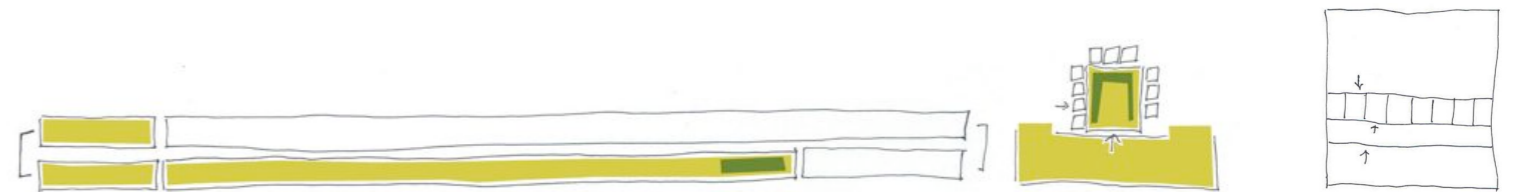


Figure V.43: depth diagram in territorial configuration, territorial configuration and territorial depth diagram within “kollektivhus” typology: dual orientation as a main condition.

⁹ A. Madanipour, “Public and Private Spaces of the City” Routledge London 2003

¹⁰ D. U. Vestbro, “From Collective Housing to Cohousing – A Summary of Research”, the Journal of Architectural and Planning Research, Vol 17, No2, 2000

D.U. Vestbro mentions Plato's 2,400 year old description of an ideal community, organised collectively, or Thomas Moore's Utopian idea (around the year 1506) where people lived in neighbourhood groups with common dining rooms and shared leisure facilities.

The author describes various experiments of collaborative housing projects, starting from a simple shared central kitchen area to fully organised residential communities. Examples are Sweden's first functionalist co-housing unit designed by John Ericsonsgatan, in Stockholm, 1935 (consisting out of 54 small apartments, laundry shafts, ground floor apartments and shared facilities within all blocks), the "Smaragden" project in Stockholm, exclusive for unmarried working women, "Marieberg", Stockholm, 1939, or the 1050's Hasselby familyhotel (with 328 apartments, a common restaurant and kitchen, large collective dining halls on different levels, smaller dining rooms, rooms for parties, club-rooms, cafe-rooms, receptions, a shop and a gymnasium) Other examples are the BIG models (stands for Bo I Gemenskap), built in 1979 in Gothenburg, Stacken, Stolplyckan or Prästgardshagen where the proportional apartment area was reduced with 10% to allow more generous collective spaces like a central kitchen, dining halls, laundry facilities, children play-rooms, meeting rooms, saunas, photo-labs, etc. It is curious to see how this co-housing experiments turned out to be replica of the "*machines à habiter*", where sharing structure was reduced to a purely functional device.



Figure V.44: Stolplyckan collaborative housing, 1970: 184 apartments for mixed age groups with shared facilities.

A systematic application of this idea of shared spaces and activities, seen as projects with **increased collective structure**, is the case of communal settlements, moshavs and kibbutz in Israel. The first category refers to communal societies with non-economic cooperation, while Moshavs are defined as cooperative agricultural communities. Kibbutz, etymologically related to "gathering" and "clustering" are collective communities based on rather stronger political and ideological values. Territorial depth configurations obtain generally higher integration values because of the extreme sharing of facilities, comparable to the Swedish Co-housing projects. One particular example of the Jewish settlement typology is the Nahalal Moshav, established in 1921. Its founders immigrated to Palestine from Eastern Europe between 1904 and 1914. After working in farming communities for a decade, they dreamt of establishing a communal farming community similar to a kibbutz, but they wanted to keep their individual family structure (kibbutzim had communal dining and children slept in separate housing). The village layout in Nahalal, devised by architect Richard Kauffman, became the pattern for many of the moshavim established before 1948; it is based on concentric circles, with the public buildings (school, administrative and cultural offices, co-operative shops and warehouses) in the centre, the homesteads in the innermost circle, the farm buildings in the next, and beyond those, ever-widening circles of gardens and fields. initially to 80 equal parts, 75 parts to the members and 5 parts for the agricultural school (the first two parts and the last three parts contain the agricultural school). This equal parcelling of the land became the trademark geometric shape of Nahalal.



Figure V.45: Nahalal Moshav, Israel, 1,000 inhabitants (images google Earth)

The territorial configuration shows a similar structure to the kollektivhus-typology mentioned before: the structure is defined by a **dual orientation of the individual properties at a bigger scale**: inhabitants have the possibility of choosing between individual isolation and central located shared facilities, mostly related to dining and working. The depth sequences within this type of configuration has a higher proportion of collective spaces but is **not territorially complex**: this is the result of the previous selection of entrance: unwanted visitors are not allowed to enter the enclosed area (that is symbolically defined by tower of vigilance and a tower of water supply), just as in the previously discussed gated communities. In other words, increasing the **amount of collective spaces does not necessarily increase the value of depth**: this depends on the access configuration of the project on all levels, together with the location and the nature of the collective spaces.

iv. Collective spaces and structure

Aldo Van Eyck's Orphanage project in Amsterdam, built in between 1955-1960, tries to balance the presence of a strong collective structure with the more individual cells for its young inhabitants. Here, the territorial configuration depends on sharing space not as a functional or rational priority but as a **substantial structural quality of spatial sequences**: the collective spaces and its carefully designed thresholds can be seen as the *file rouge* of the project.



Figure V.46: Left: Aldo Van Eyck: Orphanage project, Amsterdam 1955-1960. Right: Access configuration, territorial transition, sequential gaps and overlap scenarios within the project.

(image taken from Francis Strauven: "Aldo Van Eyck: Shaping the New Reality form the In-between to the Aesthetics of Number", Study Centre, Mellon Lectures, CCA, 2007)

Here, A. Van Eyck laid out a configuration of **intimacy and collectiveness**, carefully designed by a systematic application of **threshold scenarios**. To begin, the territorial transition from the street till the main entrance area is defined by high physical depth: the entrance door is situated almost in the centre of the complex and in order to get there, one first approaches the building, crossing a set of buffer areas or sequential gaps, to arrive at a pre-entrance meeting place under part of the building parallel to the street where a rather informal meeting area is organised. Once passed this area, one arrives at a central courtyard that gives access to various parts of the collective corridor structure that can lead you to the different sections, organised by the age of the orphans residing. The collective structure has a **high integration value** on all levels: from the scale of the building and its direct environment, till the organisation of dormitories in each section of the program.

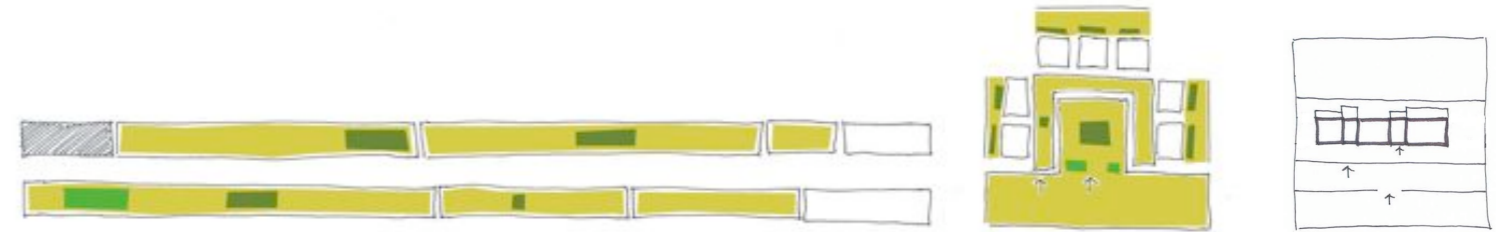


Figure V.47: Aldo Van Eyck: Orphanage project, Amsterdam 1955-1960. Depth diagram in territorial configuration, territorial configuration. (Right) Territorial depth scheme.

In this case, depth is defined by a high level of physical depth, combined with an even higher level of visual depth as the project shows many long sight lines, criss-crossing areas with a collective as well as an individual use. On the level of publicness and privateness of spaces within the territorial configuration, accessibility distribution shows a coherent and complex diagram that was the starting point of the design process, not considered a detail to solve later in the process. The general depth diagram shows a well orchestrated and controlled **territorial transition** from the street as a public area till arriving in the most private part of the building. However, sets of **sequential gaps and various overlap scenarios** within the sequence increase the **complexity of the depth configuration**. Various territorial gates are introduced to plan the sequence gradually. The detailed depth diagram (above), from the corridor till the sleeping room, shows a similar pattern: a relatively high proportion of collective spaces, carefully broken down following a regular rhythm and showing multiple access possibilities. Territorial configuration is complex and coherent and adds an important value to the rich architectonic experience of the building.¹¹

It is the very combination of territorial boundaries, spacing mechanisms or sequential gaps, overlap scenarios and a wide range of ways of delimitating territories that defines the depth configuration and stresses the qualitative characteristics of this studied project. In this built cluster complex, besides designing groups of spaces or the simple sharing of facilities, collective spaces have a high integration value and allow infinite possibilities of moving through a building, of appropriating space, of meeting people.

The following chapters refer to historical and contemporary urban projects and present a coherent reading of the structure of their collective spaces to try to disentangle depth configurations in a qualitative way.

¹¹ see also F. Strauven: "Aldo Van Eyck: Shaping the New Reality from the In-between to the Aesthetics of Number", Study Centre, Mellon Lectures, CCA, 2007

v. Collective housing projects and communities: a historical review. Territorial rhythm.

David Mackay¹² reviewed a series of housing projects based on **collective development** and **shared use of space**, as opposed to many single family housing projects. He stresses the presence of “*the spirit of sharing*” that he relates to the collective consciousness that rose up in Europe since the French Revolution as an attack to feudal paternalism.

He starts the historic review of community based urban projects by mentioning Robert Owen’s “*Village of Unity*”, a physical environment designed in 1817 for small communities of no more than 1,000 inhabitants. The set-up was seen as an economic autarchic unity of 0.2 à 1ha per person. The project is laid out as a set of concentric layers starting from external private gardens and agriculture fields, to the residential buildings, to the inner collective space of the courtyard containing several share facilities like a restaurant, a kindergarten, some schools, a library, a church etc.

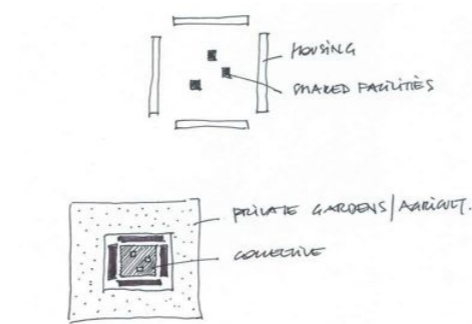


Figure V.48: Robert Owen: “Village of Unity”, 1817: set-up

The dwellings are oriented so that the living rooms connect with the collective courtyard while the sleeping rooms face the quiet side and look out onto the individual gardens. The depth sequence of an outsider who would approach the community area is very particular: one passes by the individual perimetrical gardens, enters in between the main residential building blocks that morphologically define a collective courtyard with the mentioned facilities. Nevertheless, the depth sequence for the inhabitants possesses a clear definition of the individual parts from the collective areas and the position of the buildings reinforces this distinction. It is important to notice that the **collective spaces do not have a central position** in the depth sequence.



Figure V.49: Robert Owen: “Village of Unity”, 1817: general set-up, depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

Mackay continues with a description of Charles Fourier’s “*Phalanstère*” from 1808 as another example of an urban project based on shared spaces, even if this idea obtained more philosophical or even political dimensions. C. Fourier called the single family house “*antisocial*” and proposes collective housing with a high concentration of shared services to foment better social interaction between residents. The project is presented as an isolated building as a basic unit to be repeated to build new industrial cities. One Phalanstère unit would house 1,500 à 1,600 persons and have a regular rectangular

12 D. Mackay, “Viviendas Plurifamiliares: De la Agregación a la Integración”, Gustavo Gili, Barcelona 1980

enclosing shape to increase building and circulation efficiency. On the level of the first floor, pedestrian street hang within a connecting glass gallery space over three floors. This collective element allows access to all individual apartments and even connects all different building volumes. The ground floor plan was open and free for vehicles to pass easily and contained shared dwellings for elderly and children. The specific shape of the buildings tried to enclose shared courtyards, being inside or outside space. Here, depth diagrams show a clearly controlled sequence defined by a systematic reduction of collective use: within the sequence a systematic reduction of the amount of allowed users is planned, each transition given a particular space with architectural translation. Here, **continuity and transition** is the main design key. Besides that, the shared spaces occupy central areas within the project.



Figure V.50: C. Fourier's Phalanstère 1829



Figure V.51: Fourier's Phalanstère 1829: general set-up, depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

This idea of Phalanstères were realised, like Brook Farms (West Roxbury, Massachusetts) or Jean Godin's constructed variant called Familistère, 1859-1877, where individual dwellings were organised along a huge central indoor courtyard. Inhabitants shared this courtyard territorially as they used it to enter their apartments, controlling each other visually. The shared facilities within this project however were housed in other adjacent buildings, reducing the collective dimension of the depth configurations.

D. Mackay continues the series of project with a brief description of Henry Roberts' experimental collective houses, "Model Houses" in Bloomsbury, London, 1850 with a shared access gallery linking all individual dwellings or Henry Darbishire's project on Columbia Square, Bethnal Green, London, 1859-1862. here, four blocks were built around a courtyard with shared use with shared services and meeting rooms in the attic of the building.

Re-reading these historical proposals of residential clusters, we notify the importance of the **position of collective spaces** within a territorial configuration, besides the proportion of spaces and access definition: a **territorial rhythm** was defined by the designers and complemented spacing mechanisms and territorial delimitation.

vi. Urban blocks as collective units

Besides neighbourhood units, collaborative projects, territorial cohesion and changing rhythm, searching for territorial configurations based on collective structure brings up the idea of urban blocks as another manifestation of urban clusters. Seeing the development and transformation of the **urban block as a collective unit**, D. Mackay refers to H. P. Berlage and the plan for Amsterdam-Zuid 1915-1919, where the mentioned architect wanted to incorporate the idea of **shared spaces** within the proposed urban blocks. That way, he wanted to use some of the advantages of the Garden City Movement as he emphasised the use of gardens and parks in the project. Aggregation of private property had to give way to well aligned urban blocks, combined with a series of public or collective squares, parks and gardens. Enclosed collective gardens in the centre of the urban block guaranteed the **sharing spirit** of the planned urban extension. The study of the depth configuration shows the location of the shared spaces at the very end of the sequence: the building block face the street that constitutes the more formal and public façade of the urban block. The interior façade, oriented towards the collective gardens, obtains a more informal and domestic quality as it is located in the final part of the configuration. The use of the collective garden is reserved for inhabitants of the urban block. The surrounding streets get interconnected using shortcuts that penetrate the interior courtyards but avoid a mixing with the collective garden with restricted access.

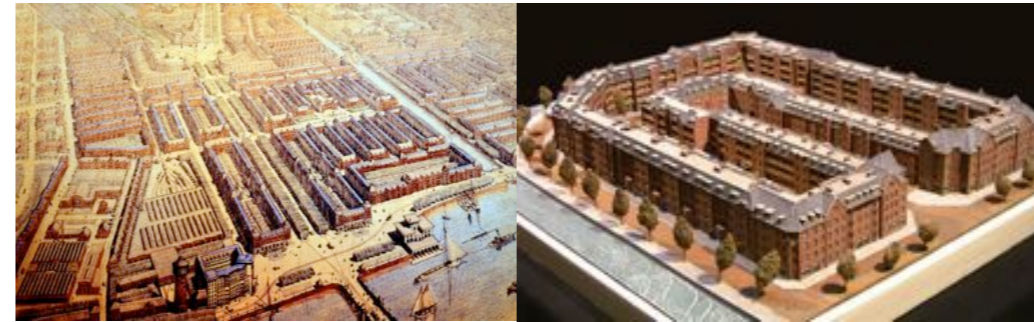


Figure V.52: H.P. Berlage's Plan Amsterdam Zuid 1915-1919: general areal view and model urban block, module 100/200m by 50m (images from archive NAI, Rotterdam, Netherlands)



Figure V.53: H.P. Berlage's Plan Amsterdam Zuid 1915-1919: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

Other architects defined the urban block as a starting point of a design evolution reducing the enclosure effect of the block and proposing a system of parallel blocks to define clustered neighbourhood units. A few years later than H. P. Berlage's proposal for Amsterdam Zuid, Ernst May was put in charge to establish a short-term and long-term masterplan for the whole agglomeration of Frankfurt (Germany). Between 1926 and 1928 24,000 new dwellings were planned and built to activate the post-war economy. The Nidda Valley Development Plan in 1930 and its planned Siedlungen were seen as a system of *“autonomous villages of a natural community following the model of the American ‘colonies’, which had inspired Ebenezer Howard. They were rather housing districts of a large industrial city. A public transport network linked them to the centres and to the work zones and only a minimum of facilities was provided locally. May wanted to preserve urban unity.”*⁴³ According to Panerai, Castex, Depaule and Samuels, the proposed green zones, made up of rural land, areas of market gardens, forests and

⁴³ P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, p 95

public parks, were for him a means to structure an agglomeration that was too large for continuous development. They mention that **discontinuous growth** and typological innovation were the result of this logic of urban development, which derived its origins from the whole city.

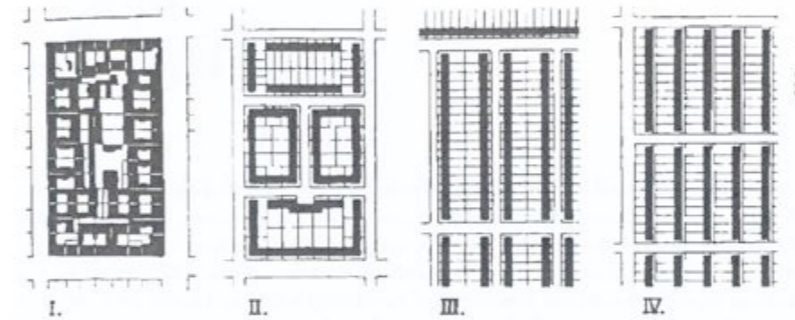


Figure V.54: E. May, Evolution of the Urban Block, 1930

(original image from figure 34. P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, p 92)

In *Das Neue Frankfurt*¹⁴, Ernst May published four drawings, “sketching out the history of the urban tissue at the beginning of the twentieth century”¹⁵. The proposed series of rows, which was the collective type on which the German architects worked in the years 1927 to 1930, was presented as the logical outcome of the evolution of the block. “The starting point was the nineteenth-century block, which was dense and compact and not far removed from the form of the Haussmannian block. The second phase marker the hollowing of the centre, the breaking of the grid and the reorganisation of the edges. The third phase saw the opening up of the ends and the lowering of the density so that the block ended up being a back-to-back combination of two rows framing gardens, as in *Römerstadt and Praunheim*.”¹⁶

Panerai, Castex, Depaule and Samuels use this diagram to describe the appearance of additional territorial levels in the urban block: the introduction of collective (and public) gardens, lanes within the opened up urban block generated complex depth configurations.

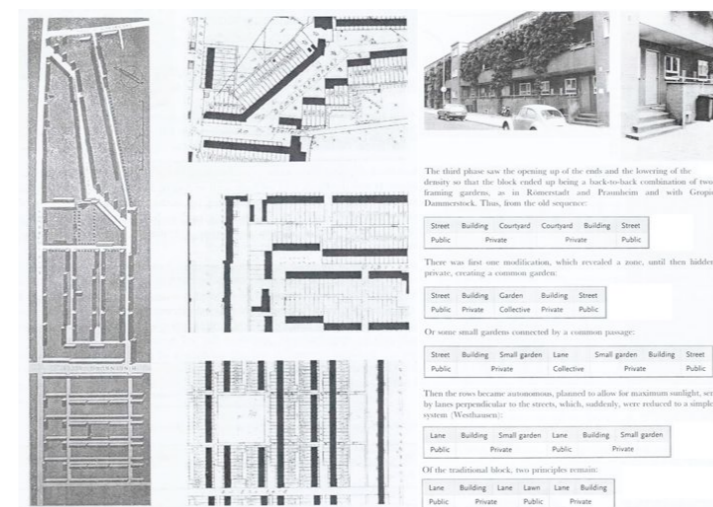


Figure V.55: E. May, (Left) Siedlung Praunheim, 1928. (Right) Schemes of adding territorial level to the idea of Urban Block

(original image from figure 45. P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, p 111-112)

¹⁴ E. May, article in “Das Neue Frankfurt” 2-3 February-March 1930

¹⁵ P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, p 111

¹⁶ P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, p 112

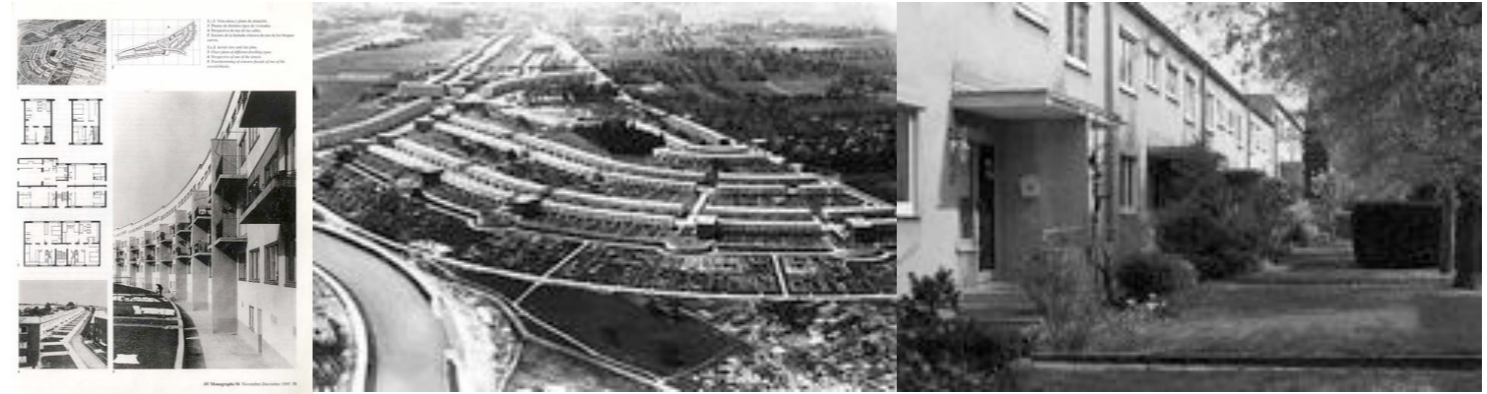


Figure V.56; E. May, Römerstadt Siedlung, Frankfurt (Germany), 1927-1928.
(Images from AV Monographs 56, november/december 1995, p31)

The Römerstadt Siedlung, as an example of this community unit (1927-1928), which housed 1,220 dwellings, showed a special interest for individual as well as collective areas within the residential project. As the authors mention in their description, the rows of two-storey houses, clearly oriented in relation with the streets, give rise to an internal space, which is occupied by enclosed private gardens in the Northwest portion and traversed by a lane in the Southwest portion. In the last row on the edge of the valley, the gardens face an alley, which forms a promenade above the ramparts with the end of each row marked by a taller block of flats, which turns towards the esplanade. Panerai, Castex, Depaule and Samuels detect that, in addition, the access routes are marked by buildings that emphasise the orientation of the fronts. That way, the access façades on the streets are matched by the rear façades that are marked by balconies. They notice that the internal space, although it is accessible from its extremities, contrasts with the street and can be read as a more domestic territory. It is fragmented into distinct zones, each zone governed by its own set of rules. There is a part connected with the cellars for untidy activities, which is masked by embankments and pergolas, a zone for games and promenading with lawns and lanes surrounded by groups of private gardens (for the tenants of the flats), treated like the woods of a classical park.

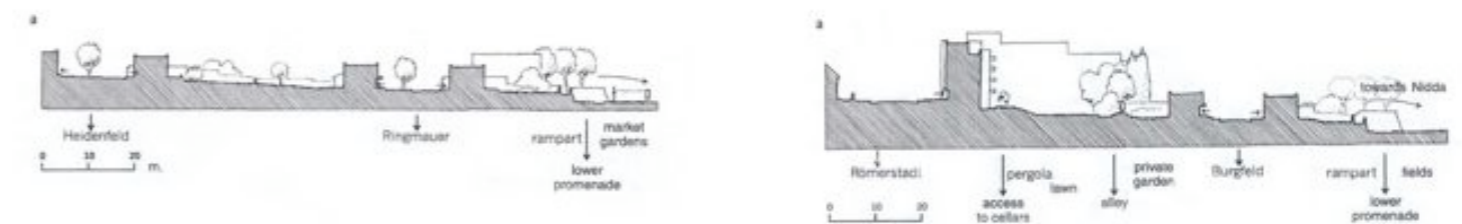


Figure V.57: E. May, Siedlung Römerstadt: a section showing the use of a sloping site and the distribution of collective areas.
(original image from figure 38. P. Panerai, J. Castex, J.C. Depaule, I. Samuels, "Urban Forms, The Death and Life of the Urban Block", Architectural Press, Oxford, 2004, p 100)

Panerai, Castex, Depaule and Samuels conclude: *"There was a clear relationship between the building and its territory -a practice confirmed by the formation of some plots for use but not for ownership where they did not exist previously. (...) The façades of the buildings were differentiated by defining and controlling the access façades and by allowing private initiatives on the rear façades. On the other hand, any relationship with the street and any attempt to connect with the rest of the city was abandoned. There the suppression of the small private gardens on favour of a common lawn was combined with a weakening of the differentiation between façades at the same time as the standardisation of the block of flats produced far more uniform elevations. Private spaces were then provided only inside the dwellings and by a balcony. Public space became less and less differentiated and occupied the whole of the un-built terrain"*¹⁷

¹⁷ P. Panerai, J. Castex, J.C. Depaule, I. Samuels, "Urban Forms, The Death and Life of the Urban Block", Architectural Press, Oxford, 2004, p 113

In other words, the authors would have preferred a deeper depth configuration, with alternating collective values, stimulating differentiation and personalisation possibilities. The main point of attention is the very location and the amount of collective elements within the project, together with its relation to private areas, road accessibility. Without direct access to the collective areas, the “*spirit of sharing*” loses part of its value. With this particular approach of the “open block” as a territorial cluster, the condition of enclosure loses importance while the combination of different types of organising space with its cross-sections gains strength to define urban complexity.



Figure V.58: E. May Römerstadt, Frankfurt 1927-1929: different relationship between multi-family (left) and single-family (right) housing block and the backyards: different model of proximity and appearance of sequential gaps. (image Google Earth)

The “opening” of the urban block, or the insertion of collective areas within the system, can be also seen in J.J.P. Oud’s project for Kiefhoek, Rotterdam, 1925-1929 where the appearance of the interior lanes and its resulting **dual orientation**, added territorial complexity.



Figure V.59: J.J.P. Oud’s Kiefhoek project, Rotterdam, 1925-1929

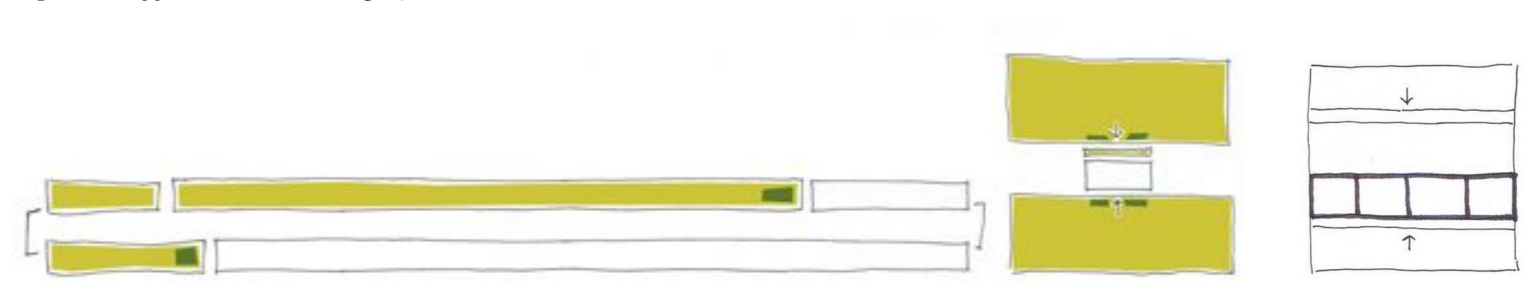


Figure V.60: J.J.P. Oud’s Kiefhoek project, Rotterdam, 1925-1929: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

The depth value of the territorial configuration does not change drastically by the introduction of the lane, though its complexity changes because of dual orientation. Many projects (see previous: dual orientation introduction by R. Neutra, C. Stein/H. Wright or the Izmir urban growth model) use dual orientation to add complexity to the project, as opposed to the integration of larger structural collective areas.

Besides models of enclosure, the position, the character and the way of delimiting collective spaces within a depth configuration, complexity within the urban project can depend on the very combination and stratification of different strategies of collectiveness, which eventually locates the discourse on depth on a bigger scale.

Taking this into account, the following chapters concentrate on the use of “**collective strategies**” as an active design tool and its relation to scale.

vii. Collective housing and scale: the intermediate size

Like Bijlsma and Jochem Groenland¹⁸ present a coherent study of collective structure within residential projects: they look for the relationship between **scale and collective structure**. They argue that the collective areas should coincide with the **intermediate scale**.

They review the Dutch history of experimenting with collective housing projects that goes back to the primitive typology of the “*longhouse*”¹⁹, a 6 by 6 meters hut where people and animals shared the same space: there was no division within this sheltered structure, only a few subtle functional elements to suggest the owners to gather along the fireplace while the livestock stayed at the other end of the space.

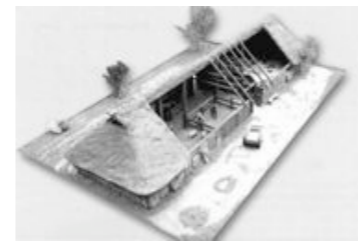


Figure V.61: woonstalhuis, Dutch housing typology of a shared structure where animals and owners were housed under one single roof.

They further comment and compare Amsterdam’s 16/17th century urban fabric with the canal house typology (see as well previous chapters) that was anchored in the city’s urban fabric by a flexible façade as collective interface. They also refer to the later extension plans by Berlage and Van Eesteren for the city of Amsterdam and the appearance of the urban block in Oud’s proposals as one of the first attempts to design the intermediate scale in an accurate way. Emphasising on the importance of the intermediate scale of collective housing production, the authors refer to Joseph Stübben’s (1909) argument that the process logic of town building that starts with big scale infrastructures and regional area delimiting, seems to arrive to the scale of the individual dwelling only at the very end of this process, often creating **problems of integration** or appropriation flexibility. For that reason, he proposed the simultaneously developing of small scale and big scale strategies to integrate many shared elements within town planning, and reinforce the rhythm and character of the individual dwelling. This simultaneous design process introduced the idea of the intermediate scale, the authors argue.

Many 19th century planners focused on tracing boulevards or streets and delimit urban blocks to achieve integration at intermediate scale, as A. Cerdà did in Barcelona (Spain) or Baron Haussmann did in Paris (France). In the last example, the collective space was located in the street, boulevard or park, while the urban block incorporated several overlap scenarios towards the more individual use of space inside.

¹⁸ L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008

¹⁹ translated from original Dutch word “woonstalhuis”

However, for Like Bijlsma and Jochem Groenland, the real acknowledgment of the importance of intermediate scale arrived with Team X doctrine, as opposed to the previous modern scale desintegration models that erased vocabulary of “*at the corner*”, “*on the street*”, “*next door*”, etc.

An important reference is Aldo Van Eyck’s understanding of collective spaces at intermediate scale when he is involved in the Amsterdam Jordaan renewal work in the 1970’s: “(...) (*We*) sought to give more definition to the mechanisms that mediate between the public and the private dimension, by making localised incisions in closed building blocks, in order to involve the inner courtyards in the public life of our city (...)”²⁰

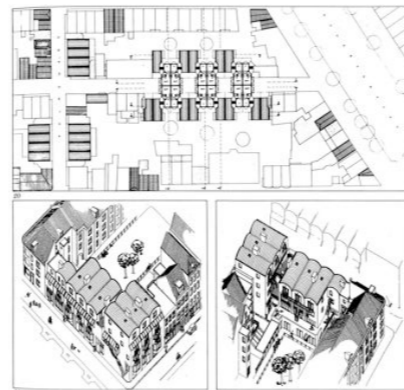


Figure V.62: Aldo Van Eyck, Theo Bosch, Lucien Lafour and Guus Knemeijer, 1975 Infill Housing and shops, Jordaan district, Amsterdam (image from article by Oriol Bohigas “Aldo Van Eyck or a New Amsterdam School”, in *Oppositions*, Summer 1977, n9, Transl. by Lydia Dufour.)

Van Eyck’s ideas reinforce the thesis of the authors that collective areas should be carefully treated especially in an intermediate size, that is focusing on the scale between the domestic and the urban scale. They argue that providing public gardens, squares or streets, only at a bigger scale, combined with the accurate treatment of public/private boundaries at the small scale, is not enough to guarantee successful developments. The authors deplore recent decrease of **scale blending** and the growing appearance of “*monocultures of terraced single-family homes*”²¹

However, next to the projects of the elite urban design masters, the reality of Dutch planning and design practice shows that most projects are based on the archetypical Dutch dwelling, being the terraced house with separate individual access and a private backyard. The authors refer to Suzanne Komossa and Han Meyer²² that proclaimed earlier that individual street-level entrance to the dwelling is one of the main typological constraints, even within the development of the Dutch urban block, as can be seen in M. Brinkman’s Spangen or J.J.P. Oud’s Kiefhoek project. Similar pattern of access distribution can be found in the proposed batteries of front doors in Berlage’s Amsterdam South Plan or W.J. Neutelings’s more recent projects.

viii. Collective structure, overlap and intermediate scale

L. Bijlsma and J. Groenland²³ present a similar study of historic residential projects to the previously mentioned review of David Mackay. However, the main purpose of this study is to establish a series of categories of collective housing projects that focus exclusively on the intermediate scale. They start with John Wood’s or Joseph Gandy’s farm workers

²⁰ A. Van Eyck, quoted in L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, Infill Housing and shops, Jordaan district, Amsterdam, Aldo Van Eyck, Theo Bosch, Lucien Lafour and Guus Knemeijer, 1975, p18

²¹ L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 19

²² S. Komossa, H. Meyer, “Atlas of the Urban Block”, Bussum, Toth, 2005, p8

²³ L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008

housing projects from the beginning of the Industrial Revolution, where the plans show a repetition of an individual cell for each worker.

They further refer to Fourier's Phalanstère, Godin's Familistère or Ledoux' proposals for industrial housing enclaves based on collective use of space. They point out Fourier's desire of architectural unification of the collective and add that his "*maisons de campagne*" illustrate his struggle to distinguish various uses within an overall architectural structure: his design focused on expression of architectural unity with increasingly separation of the private domain"²⁴ It is this unity that emphasises the collective elements that can be seen in floor plan (there is a collective dining and billiard room), the hierarchy of spaces, the distribution of the entrance areas and the proposed volume and structure of the façades. They read this project as an architectural structure of open and enclosed spaces and value the high proportion of collective spaces.

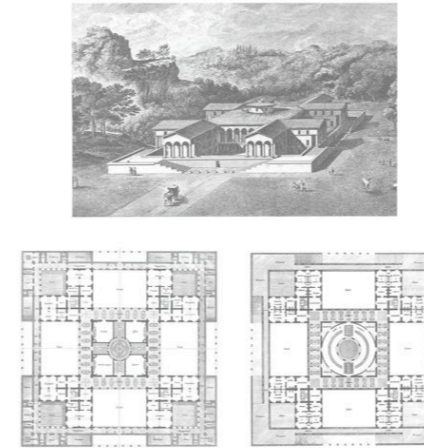


Figure V.63: C. N. Ledoux: Cénobie Chaux 1870

(original plan from L. Bijlsma, J. Groenland, "The Intermediate Size: A Handbook for Collective Dwellings", SUN, Nijmegen, 2008, p114)

The authors, L. Bijlsma and J. Groenland, further regret that within the doctrines of modern architecture, collective structure at an intermediate scale was reduced drastically, as it did not fit in rational and efficient planning of urban projects. Collective services did get introduced, but only at the level of the building that was understood as a "*machine à habiter*", a container of all needed functional devices to survive in the contemporary city. At the other hand, open spaces in between rationally designed building blocks did obtain a certain collective dimension, even if the **abstraction** of its spatial quality took over the spontaneous sharing of streetscapes. Collective spaces obtained an abstract dimension, detached from any human scale reference. It takes till the end of the 1960s with TEAM X manifests and later post-modern approaches to recuperate the idea of collective spirit, seen as a real urban feature, not a building-dependent obligation of efficiency.

Like Bijlsma and Jochem Groenland seek to link the idea of collective spaces with that of **overlap**, all at an intermediate scale: "*The aim of intermediate size collective buildings is to link up domains through overlapping use, without causing the buildings to lose their autonomy or identity*"²⁵. They mention Hans Paul Bahrtd's "*Grosstadt*"²⁶ concept of 1960 where the sharp division between the private and the public domain is a crucial subject: "*A city is a system in which all life, including daily life, reveals a tendency to polarise, to unfold, in terms of social aggregations which are either public or private. The public sphere and the private sphere develop in a close relationship without losing their polarisation, while sectors of life that can not be characterised as 'public' or 'private' lose their meaning*" The authors question this idea of sharp division and move towards Castex, Depaule and Panerai's ideas that define the essence of typology as the **overlap between two domains**. Their definition of typology focuses more on the role of the plot as a precondition for urban dynamics. Here they concentrate not on elements of buildings or on the architecture devices but on overlapping, differing uses within a single architectural structure. "*Do not see a settlement simply as*

²⁴ L. Bijlsma, J. Groenland, "The Intermediate Size: A Handbook for Collective Dwellings", SUN, Nijmegen, 2008, p 29

²⁵ L. Bijlsma, J. Groenland, "The Intermediate Size: A Handbook for Collective Dwellings", SUN, Nijmegen, 2008, p 33

²⁶ H. P. Bahrtd, "Die Moderne Grosstadt: Soziologische Überlegungen zum Städtebau", Hamburg, 1961

*a collection of built objects but also conceive of it as a habitat, as a living whole whose internal relationships are determined by social life*²⁷ This fits with Henri Lefebvre's²⁸ identification of three kinds of domain in urban life: the private, the everyday (or **collective**) and the public domain, considering the three levels simultaneously present. *“In the residential building a series of communally used spaces - doorways, halls, vestibules, staircases, inner courtyards - are inserted in between the public and the private domains, totally altering the way people live. In the city, an element that adjoins the street is no longer a house but a building that includes several dwellings. The housing cell for the patriarchal-type family is replaced by a sum total of cells housing families with a different way of living that is typical of urban life”*²⁹ In other words, the authors try to prove the increasing importance of the private/collective/public distinction at an urban scale. This relates to the previously mentioned concept of “collective space” by Manuel de Solà-Morales that acknowledges public space used for private activities and at the same time takes into account private space absorbing collective use. Using the conceptual framework of collective space, they propose a critical but systematic use of the **intermediate-sized housing block** that relates to the public realm via **overlapping domains**. They conclude: *“We are convinced that the intermediate size, with its distributive indifference, its oversized architectural structure and its overlap between domains, has great potential to create urban dynamics in the housing environment”*³⁰

Nevertheless, some critical remarks should be made to these proposals: as studied before, **ambiguous boundary definition and territorial overlap scenarios are no synonyms**. Within a project, a boundary can be less clearly defined without producing an overlap, even if territorial transitions (the presence of systematic reductions or extension of collectiveness of space) appear. On the other hand, boundaries can be well defined and separate in a clear way public from private spaces but still allow a combination with several overlap scenarios. In other words, collective spaces and overlap scenarios are two different concepts that do not always coincide. As a consequence, one can question the forced relationship between collective structures and the intermediate size: the collective structure of a project is necessary present **from the domestic till the urban scale** to guarantee urban coherence and to stimulate a healthy balance in private/public space production.

ix. Monoliths, ensembles and additives as part of a collective strategy

L. Bijlsma and J. Groenland continue with the classification of three kinds of “clustered forms”: a series of “**monoliths**”, of “**ensembles**” and of “**additives**”. The first series consists out of villa-type buildings: atrium villa's, porticum villas, courtyard villas and corridor villas. Examples they show are Fourier's Phalanstère of 1847, a residential palace for the working class with collective functions in the plinth and individual apartments in the upper floors. Other examples are Serlio's Grand Ferrare, of 1546 with the appearance of the “*cour d'honneur*” and the definition of the “*hotel particulier*”-type, so popularly spread out all over the city of Paris and defining a territorial layer within the residential urban residential projects. Another example of “**monolith**” projects is the earlier mentioned proposal for an atrium villa at Cénobie by Claude Nicholas Ledoux in 1790.

The second category of “**ensembles**” is defined as a volume grouped around a specifically designed outdoor space. Most often, the central area is intimate and physically enclosed. Here, the authors mention, the key feature is the delimitation of areas: *“the transition between public and private domains by the collective nature of the outdoor space”*³¹ Examples are the Flemish Begijnhof, Berlin's Privatsstrassen or Barcelona's private “*pasajes*” located within the Ensanche area.

27 P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, epilogue by H. Engel, “Beeld en Structuur” Dutch edition, p 278

28 H. Lefebvre, “La Production de l'Espace”, Anthropos, Paris, 1974

29 P. Panerai, J. Castex, J.C. Depaule, I. Samuels, “Urban Forms, The Death and Life of the Urban Block”, Architectural Press, Oxford, 2004, epilogue by H. Engel, “Beeld en Structuur” Dutch edition, p 278

30 L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 41

31 L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 52

The category of “**additives**” corresponds with a number of identical housing units, grouped together: the outside has the appearance of a whole while the inside has a more fragmented character. “*The ideology is twofold: at the interface between collectivity and individuality. Standardisation of private use goes together with collective representation*”³² An example of this category is John Wood’s or Joseph Gandy’s proposal for farmer housing projects as in the Royal Crescent project in Bath, 1767-1775. The three categories relate to levels of aggregation or integration of shared territories within a configuration.



Figure V.64: Royal Crescent, Bath by John Wood, 1767 1775, example of additive collective housing project

Finally, the authors present a series of organisation principles of collective housing projects, starting with **variety** in development and the appearance of the plot, exhibiting flexibility. The next principle is the **enclave** while the third one is about the **scale and size** of a specific urban fabric: the autonomous plot, the block city, the American grid, Garden City grid, open grid, specific grid, enclaves and closed enclaves.

“*Because of its collective or introverted character, the intermediate size can be typified as a capsule, or an enclave. The tendency towards encapsulation and enclosure is usually seen as a loss of urbanity and a threat to the public domain. Fear has given rise to mechanisms of defence, exclusiveness and exclusion which could turn the world into an archipelago of isolated entities, fortresses, gated communities, enclaves, enclosed complexes and so on*”³³ Lieven De Caeter agrees and argues that the relationship to the “*locus*” has been lost in the process: the capsule is an independent entity adrift in public space, which can be thought of as “*junk space*”, devoid of all identity or meaning. He adds that the **scale, permeability and use of the unit** are of crucial importance: “*the intermediate-sized building can introduce stratification into the fabric and create links between different networks and domains. (...) In this sense the intermediate-sized model, embedded in an urban housing culture that exists by virtue of the locus, can provide a European response to the American gated community*”³⁴

L. Bijlsma and J. Groenland conclude their study of collective housing projects by defining a **collective strategy**. According to the authors, collectivity depends on the architectural size: its volume, the level of enclosed-ness, the sequence of spaces, the presence of diffuse intermediate spaces and gradual transitions from public to private and finally, the very use of space as referring to private or collective appropriation. They add that there should always be a **recognisable collective space**, with an oversized element such as a courtyard, a hall, a monumental staircase, a patio or colonnade, whose boundaries may be firm or diffuse. These spaces should be permanently shared and provide a constant filter to the public domain. Besides that, there should be multiple entrances to private spaces and private spaces of various kinds and sizes can be linked up, because of dividing elements, or can have a linking effect. Last but not less important, they propose that the volume should be both single and multiple: “*the purpose of the design study is to seek variety, elasticity and flexibility. These may be found at various levels of scale.*”³⁵ To illustrate these ideas, they use plot strategies, enclosure strategies and urban planning framework strategies to modify existing urban projects at intermediate scale.

32 L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 54

33 L. De Caeter, “De Capsule en het Netwerk” in Oase, n° 54, 201, p 122-133

34 L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 77

35 L. Bijlsma, J. Groenland, “The Intermediate Size: A Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 175

The reading of the use of collective structure as a practical design tool offers new perspectives for the urban project and diminishes the passive reading of depth in urban projects. However, collective strategies should be defined at all scales, not only at the intermediate scale, and should accompany a rethinking of public/private distinctions.

Within this previously mentioned study, the authors focus strongly on the idea of collective space, but see it as an intermediate space between public and private space: collective space always being “sandwiched” between public and private areas. All schemes, plans and comments refer to this idea of “*intermediate space*” that preferably should be situated at the “*intermediate scale*” to guarantee success. However, an alternative reading of this series of cluster projects might start with the assumption that collective space is the (ever changing) total of public or private properties, more or less accessible, with an attached, inverted or contrasting use, seen as a **continuous horizontal interface** at the scale of the urban project, defined by time-dependent boundaries. Being coherent with this concept, we might systematically redraw some historic and contemporary projects to disentangle depth configurations and unveil the collective structure’s nature. This means we follow the previously tested analysis of domestic sequences to describe and compare depth configurations at a larger scale.

x. Collective structure and depth: aggregation model

The first group of cluster projects illustrate depth configurations based on **aggregation**: urban (residential) projects are laid out as adjacent individual territories. However, some subtle strategies are applied to stimulate collective use of space, sometimes adding a small shared outdoor space, sometimes configuring houses as compound cells: the collective structure obtaining more structural characteristics. Those projects often relate to 19th century industrialisation processes that experimented with labourers housing issues, based on low-cost construction, proximity to production nuclei and resulting in groups of basic small dwellings.

John Wood’s earlier mentioned proposal represents a simple small-scale cluster configuration: within an open field, attached buildings would be constructed with a shared entrance for its inhabitants. The individual depth configuration is simple and is not based on included territories: here, individual territories are aggregated and the very sequences slightly touch at the point of entrance. The project allows an easy distribution and flexibility. The configuration is characterised by the high amount of shared spaces within territorial transition, introducing areas of overlap at the individual entrance area.



Figure V.65: John Wood’s farm workers housing proposal, 1806: territorial structure and access configuration.

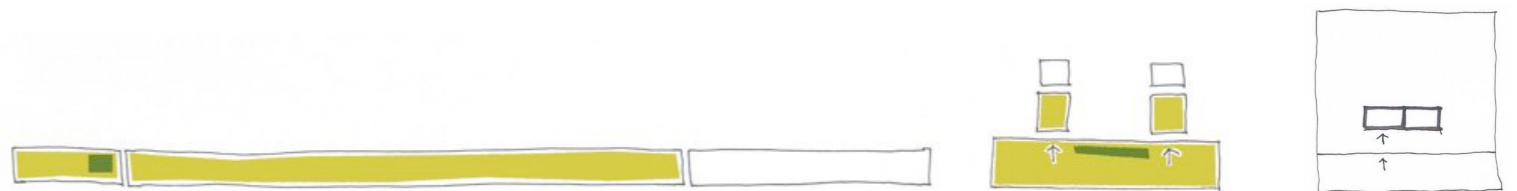


Figure V.66: John Wood’s farm workers housing proposal, 1806: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

A similar pattern, even though obtaining a more complex configuration, can be seen in Joseph Gandy’s proposal of 1806 to locate various dwellings under one single roof. As a set, four individual dwellings are combined to guarantee a balanced

intimacy-publicness balance. Studying the collective areas within the project, we can mention the high proportion, besides the systematic appearance of overlap areas between the different constructions.

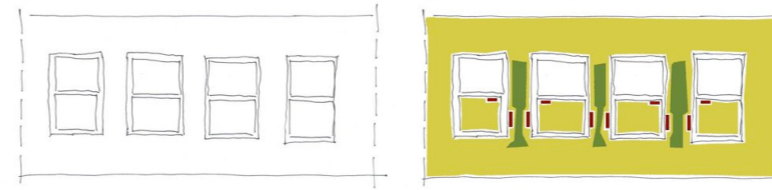


Figure V.67: Joseph Gandy's farm workers housing proposal, 1806: access configuration.

The individual entrances are laid out in that way that they coincide with the in-between space, turned into an overlap area. The 2 middle dwellings even obtain dual orientation and part of them could be used as walk-through living-rooms. The depth configuration is similar to the previous example, even if here the approach moment is postponed to build up to a collective area just before entering the individual area. The very position of the blocks and guarantee of privacy through a simple depth configuration, allows a flexible and spontaneous use of space.

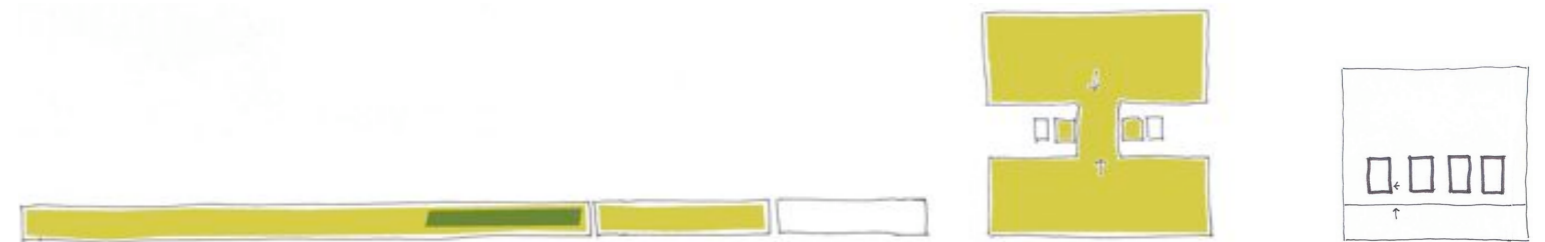


Figure V.68: Joseph Gandy's farm workers housing proposal, 1806: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

xi. Collective structure and depth: introverted model

C.N. Ledoux' revolutionary program as a development of the Palladian "*villa suburbana*", combining agrarian functions with housing, eventually presents a project that depends and relies on **collective space with a higher integration value**: the collective space shows a structural quality as it distributes main circulation patterns and proximity to all individual territories from this collective space is low. Territorial depth diagram shows a long sequence from the street till the individual apartments, not because of the application of territorial boundaries (or because of territorial transition) but here because of the blown-up scale and the continuity of the proposed collective spaces: the various exterior entrance gates connect with the central hall, and circulation on all levels and include various overlap scenarios that obtain a more individual character.

The central collective spaces obtain a higher accessibility while the perimetrical spaces maintain a more domestic atmosphere. Territorial depth diagram is short and simple, while visual and physical depth stretch the mentioned sequences. The high integration value of the collective structure provides a balanced reading of the individual/collective gradient, as well as the public/private relationship.

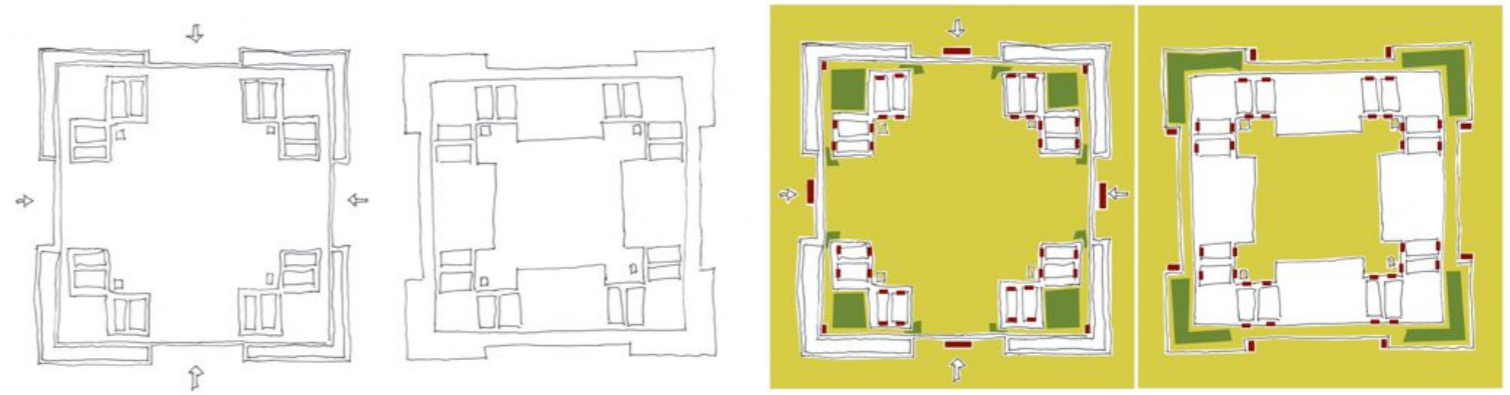


Figure V.69: C. N. Ledoux: Cénobie Chaux 1870: territorial structure and access configuration (left: ground floor; right first floor)



Figure V.70: C. N. Ledoux: Cénobie Chaux 1870: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

The high integration value of the central courtyards and other adjacent open or semi-open spaces, and the coincidence with a central location of those spaces, announces another model of cluster-based territorial configurations: the **introverted model**. During the history of urban projects, many experiments have been done to test the efficiency and flexibility of interior-courtyard-based projects. In a way, these urban projects try to solve intimacy and sharing spaces by introverting traditional models.

A historic example of this model is the “*begijnhof*” typology, like the “Hofje Van Wouw”, a group of almshouses built around a central U-shaped courtyard, in Den Haag, Netherlands, around 1647. Here, some individual cells are gathered around a central collective open space from which the cells have access. The relationship between this shared space and the individual dwellings is defined by an overlap area, stimulated by the semi-domestic atmosphere in the courtyard which invites the users to appropriate the in-between space easily.

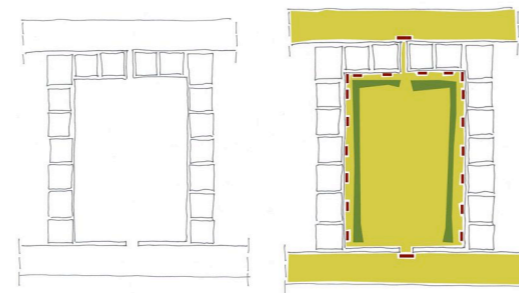


Figure V.71: Hofje van Wouw, Den Haag, Netherlands, 1647: territorial structure and access configuration

Depth configuration is simple and the sequence obtains a higher proportion of collective space, reducing the individual use of space to a minimum. This particular example is also characterised by a **dual orientation**, as the courtyard is accessible from two sides, even though always territorially bordered by a gate or a fence.

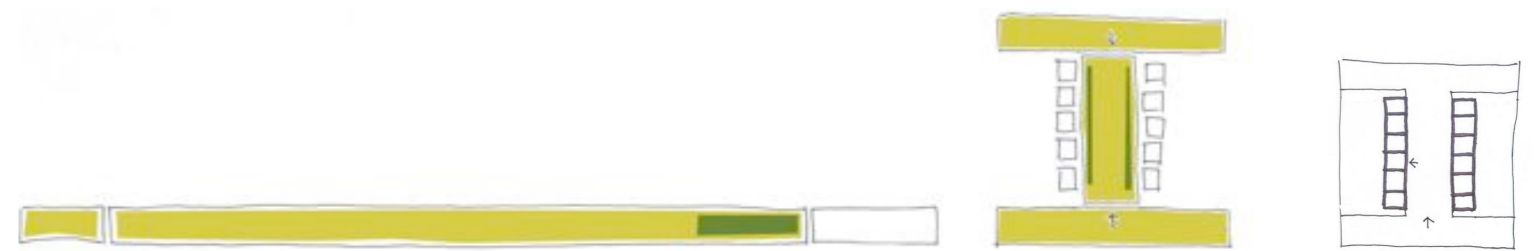


Figure V.72: Hofje van Wouw, Den Haag, Netherlands, 1647: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

In many central European regions, the typology of the “*begijnhof*” was reproduced many times within the dense urban fabric, especially because of their relation to religious closed communities with a strong presence in society. However, during the 19th century and the related industrial revolution, emphasis was on providing cheap, community-based neighbourhoods within the urban centre to increase accessibility to the centrally located factories. A good example of this micro-neighbourhood within the urban fabric, are the “*beluiken*”, situated in the city of Gent, Belgium, around 1845.



Figure V.73 : Beluiken gent, 1845: series of identical cottages adjoining a communal access area or inner courtyard with shared facilities. (image after M. Smets, study in 1976, reproduced in L. Bijlsma, J. Groenland, “The Intermediate Size: Handbook for Collective Dwellings”, SUN, Nijmegen, 2008, p 164)



Figure V.74 : Beluiken gent, 1845: contemporary Beluiken, city of Gent, Belgium

This historical cluster typology shows a depth configuration with a higher value because of the amount of shared space as a central distribution system (it could be seen as the equivalent to the corridor) but above all, because of the domestic scale of the space, which makes it easier for the residents to inhabit, personalise and appropriate the available overlap areas. Here, neighbours gather, let their children use the courtyard to play, store bikes, or share a small vegetable garden.



Figure V.75: Beluiken Gent, Belgium 1845: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

More recent projects, based on the same principle, can be found during the years 1960-1970, with the rediscovering of the neighbourhood unit and the preference for smaller scale development as reaction to previous modern ideologies. James Gowan and James Stirlings' Trafalgar Road project in Greenwich, London, 1963-1969 is a good illustration. In this project, four blocks of dwellings defines a central courtyard that provides access to all dwellings. The interesting part of this configuration however is the **combination of different formula** into one project. According to the side you approach the project from, you pass along some communal gardens without any specific use, except offering physical distance from the main road (spacing mechanisms). These spaces are used as **sequential gaps** within the depth configuration. Approaching the project from the other side, the transition is more direct and smooth: besides more generous openings towards the courtyard, sequential gaps are replaced by communal spaces, where residents park their car or bike, or where the neighbour's children play.

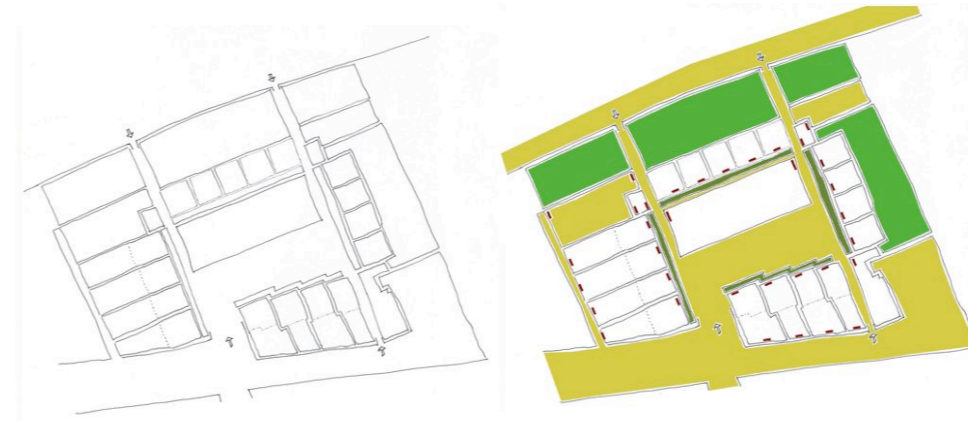


Figure V.76: James Gowan and James Stirlings' Trafalgar Road project in Greenwich, London, 1963-1969: access configuration of general set-up.

Besides this offered variation, the architects oriented part of the dwellings towards the courtyard, giving single access from it, while they offered **dual orientation** to some other dwellings: in this case, residents can enter their property through the shared courtyard or through a private garden that is oriented towards the more perimetrical alleys.

The housing typologies as well present a certain variation: there is a combination of ground floor apartments with access to a private garden, on higher levels situated apartments, till duplex apartments, all accessible from corridors running along the interior side of the courtyard, increasing social control for the cluster. Interesting is the provision of **overlap scenarios** at the level of the courtyard, possible thanks to the set-back on the ground floor: a flexible area for residents to appropriate part of the available space.

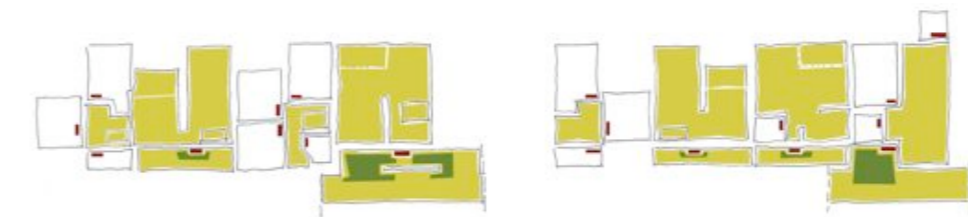


Figure V.77: James Gowan and James Stirlings' Trafalgar Road project in Greenwich, London, 1963-1969: access configuration of two major housing typologies (represented on four different levels).

The depth configuration shows a higher proportion of collective spaces with a clear reading of overlapped territories. The combination of small variations in overlap or accessibility helps to personalise and inhabit the spaces.



Figure V.78: James Gowan and James Stirlings' Trafalgar Road project in Greenwich, London, 1963-1969: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

Willem-Jan Neutelings' Hollainkazerne (Gent, Belgium, 1990) describes a similar pattern of **introverted configuration of collective spaces**, however with an **increased level of complexity**. The central courtyard in this project is a clear reference to the typology of the "Begijnhof", to be found many times in the same area. Here, the social housing project was erected on a former military site but the architect wanted to change the structure of permeability and proximity by using the concept of the "Begijnhof". As a result, the central collective space is accessible from three points: one situated towards the "urban side" of the project, the other towards the riverside, where gates limit access. Once inside the courtyard, different scenarios are possible: you might have direct access to individual gardens and related dwellings, or you walk through a gate and enter an outdoor hall that leads you towards the higher situated apartments and duplexes. Some dwellings obtained dual orientation as they can be reached directly from the courtyard or through the outdoor halls. Some dwellings are accessible through the façade at the street side; these are the only ones not having an individual garden. We detect another included territory as the courtyard contains a shared facility with multiple access from the courtyard.

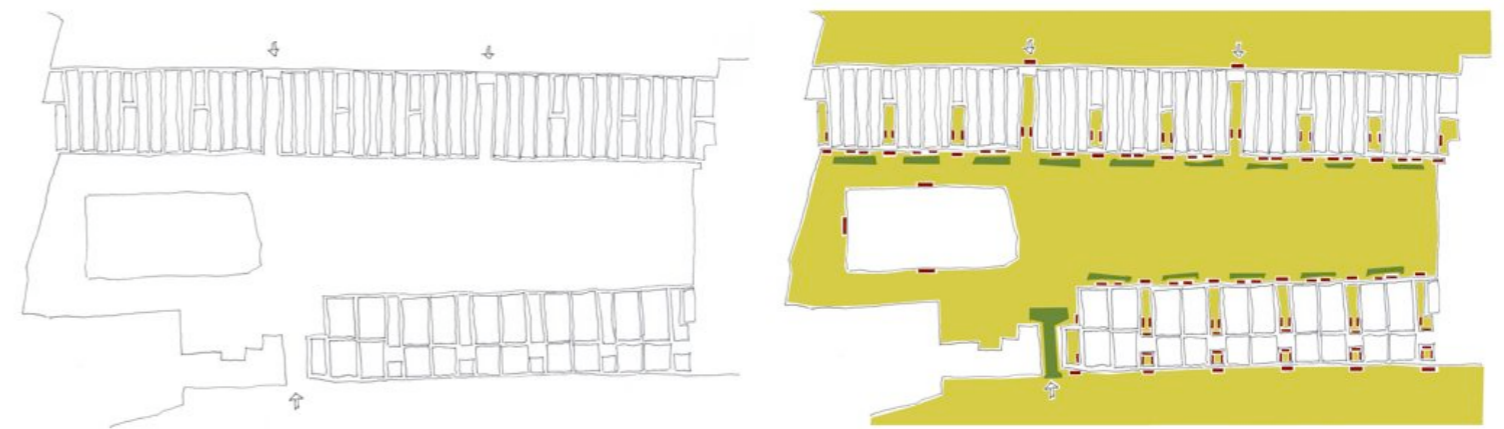


Figure V.79: Willem-Jan Neutelings' Hollainkazerne, Gent, Belgium, 1990: territorial structure and access configuration.

The interesting part of the configuration lies in the individual or collective appropriation possibilities offered through the distribution of **overlap scenarios** along the interior perimeter of the central courtyard. The formal obligation to enter the dwellings through the courtyard for almost all the dwellings, guarantees relatively high levels of social control and dynamic character of the cluster configuration.

The used housing typologies show a coherent structure with the general set-up of the configuration. Rather extremely high proportions of collective areas are found within the domestic depth configurations that obtained a clear and simple structure.

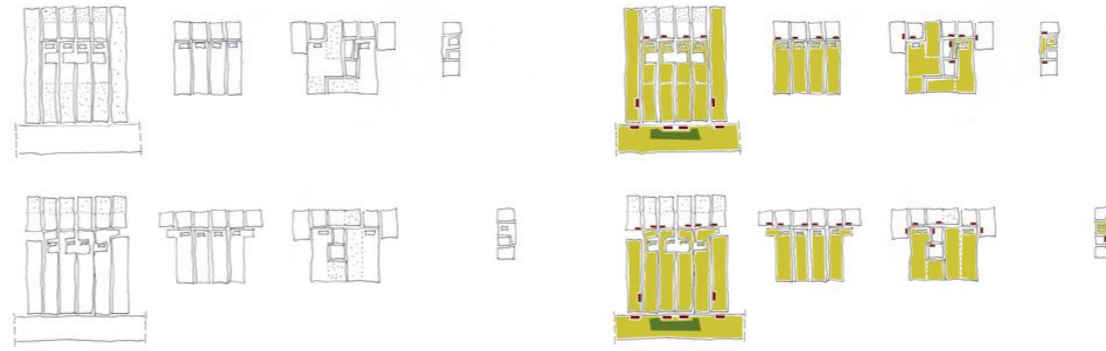


Figure V.80: Willem-Jan Neutelings' Hollainkazerne, Gent, Belgium, 1990: access configuration of housing typologies

Clear territory boundaries define territorial transition, more than in the previous projects, while **combined with individual or collective overlap areas**. The project guarantees individual property combined with shared territories. Here, the depth configuration obtains more complexity through variation and combining depth sequences: each level of the project has a different configuration with different appropriation possibilities.

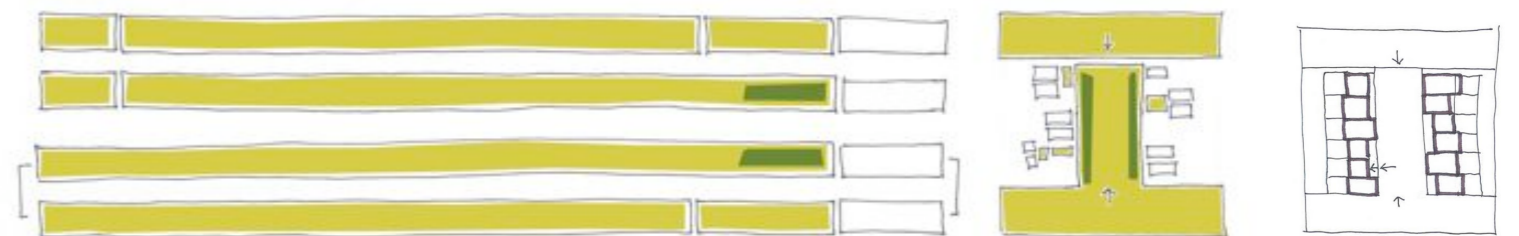


Figure V.81: Willem-Jan Neutelings' Hollainkazerne, Gent, Belgium, 1990: depth diagrams in territorial configuration (top-down: typology north access through shared halls; typology north direct access through courtyard; typology south dual orientation), territorial configuration and territorial depth diagram for general set-up.

The earlier mentioned social housing project by Alejandro Aravena in Iquique, Chile, 2003-2004, shows similar qualities, even if in this case, the courtyard is divided into four smaller **collective space units**. As said before, the architect's main interests was to preserve flexibility in time to allow the 100 families to expand or transform their dwelling according to their financial possibilities or social needs.

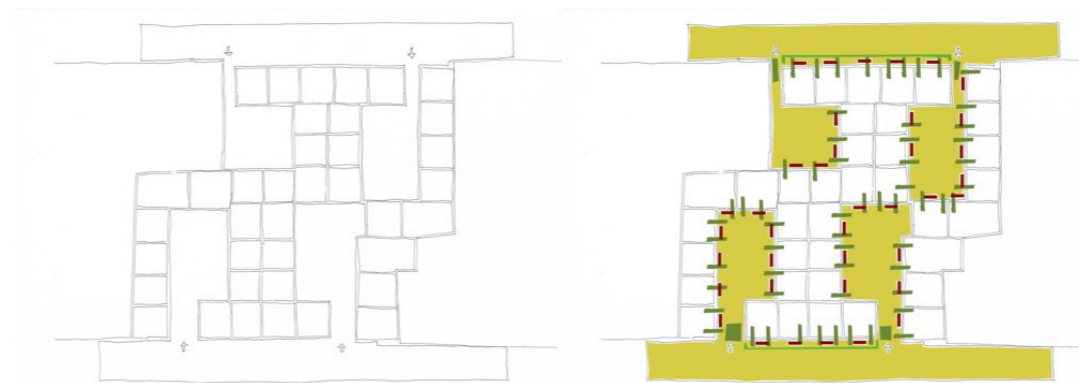


Figure V.82: A. Aravena: Iquique, Chile, Residential Project, 2003-2004: access configuration

The architects played with the idea of offering various central collective courtyards, reduced in dimensions to allow small-scale appropriation, but at the same time, combine this with a series of **singular overlap areas** to fill in at the owner's own rhythm. The access configuration shows a well controlled distribution of access along the patios and increase social

control. The dwellings situated toward the adjacent streets, were given a special treatment and provided with a narrow sequential gap to allow higher physical distance from the street till the intimate areas of the particular dwelling.

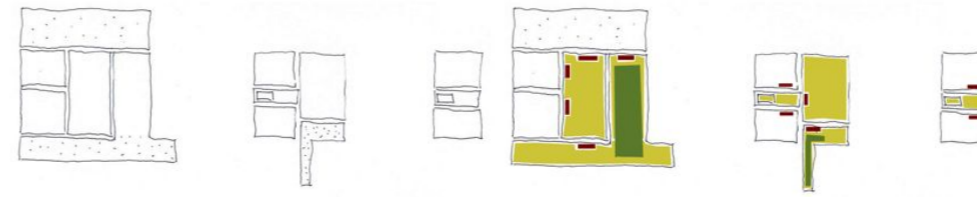


Figure V.83: A. Aravena: Iquique, Chile, Residential Project, 2003-2004: access configuration housing typology (first scheme shows the ground floor apartment while the other schemes represent the first and second floor of the duplex apartment)

The used housing typologies, the ground floor apartment with access to the backyard, the open space as an individual overlap area and the upper duplex apartment with the setback and connected staircase, are mainly defined by overlap scenarios and collective use, **less by territorial transitions** as there are less explicitly determined territorial intervals. Depth configurations show a clear demarcation of territories, even if overlap scenarios dominate the general set-up. In this project, individual use of space is well balanced with collective use of space.

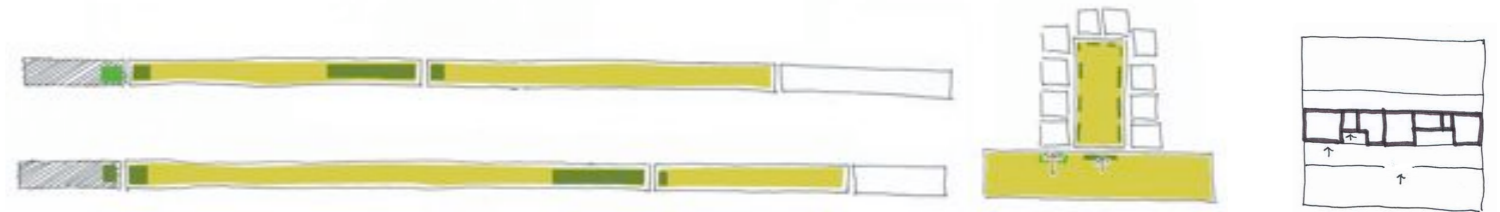


Figure V.84: A. Aravena: Iquique, Chile, Residential Project, 2003-2004: depth diagrams in territorial configuration (above ground floor apartment reachable from street, below ground floor apartments accessible from courtyard), territorial configuration and territorial depth diagram.

Nevertheless, different territorial configurations can be detected, even when the cluster is based on a similar idea of a central courtyard or introverted use of space: the design strategies used in the 1980s to plan the Olympic Village as a new residential project within the Poble Nou district in Barcelona (Spain), show different outcomes. A closer look at some of the constructed urban blocks reveals residential space production based on a systematic use of **collective courtyards**³⁶, as in the case of the urban block between the Avinguda del Bogatell, Carrer de Joan Miró, Carrer de Zamora and Carrer del Doctor Trueta. Here, an entire residential block was built, taking the street as well as the central courtyard as access points. Residents have various options to enter the building: first, they might use the indoor collective halls and staircases. These are provided with a high visual depth as one can see the deeper situated privatised courtyard to which the hall gives direct access. A second possibility is to enter through some outdoor passages situated on the corners of the block, that lead towards the interior courtyard from which one has access to the previously mentioned staircases. Considering these options, we might refer to **dual orientation**, even if it is the indoor staircase that obtained this status, not necessarily the dwellings themselves. A third option is to get directly to the central courtyard, passing through a gate, situated at the Carrer de Joan Miró and provided with a relatively high setback from the street, combined with direct access passages to the parking space, built under the courtyard. The courtyard itself is an **included territory**, that is defined by a continuous boundary of fences, walls and gates. The walls in the courtyard are the separating elements between the collective courtyard and the private gardens, part of the property of the ground floor apartments. Only at the corners some commercial activities were planned at floor level.

³⁶ about this topic see: A. Ferrer, N. Calavita, "Behind Barcelona's Success Story" in *Citizen Movements and Planners' Power* Journal of Urban History, volume 26, n. 6, 2000

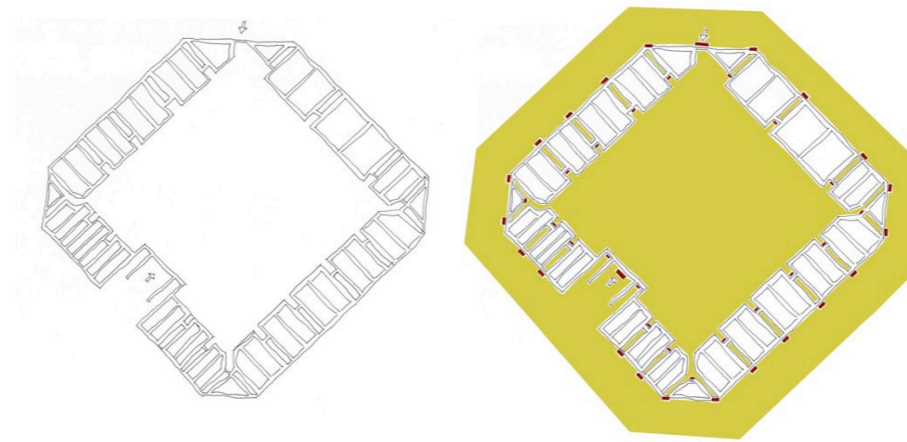


Figure V.85: Residential Block, Avinguda del Bogatell, Poblenou, Barcelona (Spain): access configuration

The depth configuration in this case is defined exclusively by a sequence of **territorial transition**: the systematic and progressive **exclusion of users** along the sequence from the street as the most collective area to the individual apartment as the most individual territories. **No overlap scenarios** are planned within this territorial configuration: all transitions are defined by gates, fences or walls. Besides that, all territorial boundaries are explicitly stressed by size, position, graphic indications or technological devices. **Hard territorial boundary demarcation** seems to be the base of this residential real estate operation.

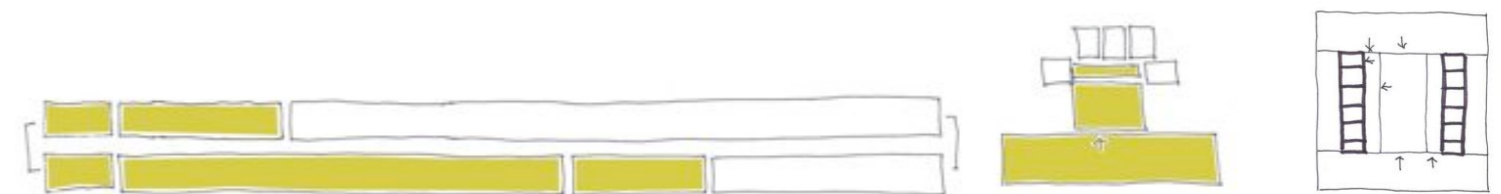


Figure V.86: Residential Block, Avinguda del Bogatell, Poblenou, Barcelona (Spain): depth diagram in territorial configuration (above sequence from street side, below sequence through courtyard), territorial configuration and territorial depth diagram.

Within this configuration, depth diagrams depend on a medium amount of collective space that is defined by territorial transition without presence of overlap or sequential gap scenarios.

Another study of residential building block within the same area illustrates a different model of space production. The residential block is the result of a posterior completion with a new building of a previously semi-open block: it is defined by Carrer de la Marina, Carrer de Joan Miró, Carrer del Doctor Trueta and Avinguda del Bogatell. The Western part of the block consists out of various apartment buildings facing the Carrer de la Marina and private backyards towards the central courtyard of the block. The North-East part of the block is defined by recent residential development, facing Carrer de Joan Miró and the adjacent avinguda. In this case, the central courtyard is public property and organised as a collective park for the complete neighbourhood.

However, curious is the fact that in this case the courtyard is **not used for access**: from the courtyard it is impossible to reach the new building block faced North-East, neither is it possible to have access to the private backyards, situated at the Western side of the courtyard.

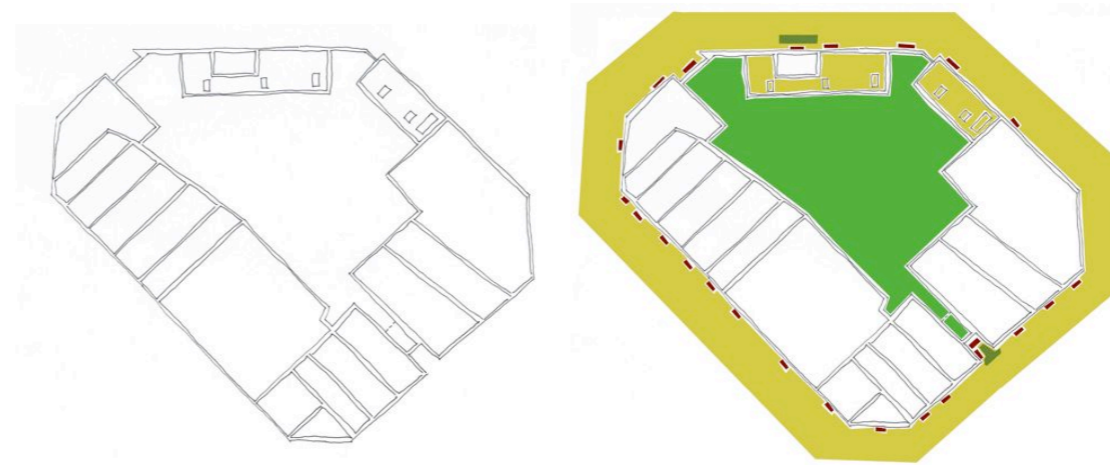


Figure V.87: Residential Block, Avinguda del Bogatell/Carrer de la Marina, Poblenou, Barcelona (Spain): access configuration

It is a walk-through interior courtyard that provides air and space between the residential buildings but has **no territorial integration value** whatsoever. This park-space is closed off at night, even for the surrounding residents. As a consequence, this collective space can be seen as a **sequential gap** without any distribution function for the block or the neighbourhood. Within this configuration, depth is territorially low: neither territorial transition, nor overlap scenarios define this courtyard-based depth configuration. Depth is only defined by **visual depth**, as part of the ground floor spaces in the new residential buildings are left open and provide transparency, and physical depth, as a generous space is provided for the neighbours. In this case, even if at first sight this seemed to be another cluster project, it seems to be nothing more than an interesting semi-accessible building block with perfect light and ventilation conditions.



Figure V.88: Residential Block, Avinguda del Bogatell/Carrer de la Marina, Poblenou, Barcelona (Spain): depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

xii. Collective structure and depth: multiple model

Another model of cluster configuration introduces a less clear morphological set-up but allows multiple access sequences. We take the example of the residential project by Hely, Bell and Horne of Saint John's Village in Glebe, Australia, 1962-1964. This particular housing project for young and elderly people plays with the combination of community and independency, as D. Mackay³⁷ mentioned. The main entrance to the **enclosed** residential territory is defined by three main gates: one for pedestrians and cars in between the residential building blocks and the church, another one a few more meters to the west of this gate and a third entrance that is situated at the Northern side, the entrance/exit to the park, situated behind the project. The area is clearly divided into two zones: one with the actual residential program and the other, situated at the North-East side, containing the church and rectory building. In between those two area, the main entrance area is situated, coinciding with the parking area for residents and visitors, from which one can access freely the main central courtyard to the left that penetrates between the collective residences. Those are organised by 6

37 D. Mackay, "Viviendas Plurifamiliares: De la Agregación a la Integración", Gustavo Gili, Barcelona 1980, p78-81

mini-clusters of each 4 to 6 housing units with two levels height, related to a sheltered mini-patio as shared entrance hall. This hall can be accessed through the central courtyard or in one case through the street, as that one contains the central facilities and administration of the residence complex. However, the complexity and multiplicity of this particular project lies within the **dual orientation** of each individual cell: each one can be reached through the shared entrance hall or either directly from the central courtyard. Considering the difference in collectiveness between the courtyard and the shared entrance halls, we might even speak of a **case of territorial overlap**. The very orientation and morphological composition of all blocks however allow some of the individual cells to have access as well to a system of backyards, shared between residents of different mini-clusters and subdivided in a subtle way by the building composition itself.



Figure V.89: Hely, Bell and Horne's residential design for Saint John's Village, Glebe, Australia, 1962-1964: access configuration of general set-up (based on original plans and sections as reproduced in D. Mackay, "Viviendas Plurifamiliares: De la Agregación a la Integración", Gustavo Gili, Barcelona 1980, p78-81)

The very building position allows individual and collective appropriation possibilities at both sides of the mini-clusters: **overlap scenarios** define an **almost continuous boundary** of the central courtyard.

The residential typology consists out of an entrance hall, shared by the two residents, that gives access to a shared kitchen and bathroom. From there on, the individual private area is delimited. There is a clear and easy readable territorial set-up at a small scale as well as at a bigger scale.

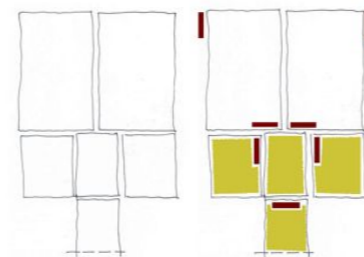


Figure V.90: Hely, Bell and Horne's residential design for Saint John's Village, Glebe, Australia, 1962-1964: access configuration of residential typology (based on original plans and sections as reproduced in D. Mackay, "Viviendas Plurifamiliares: De la Agregación a la Integración", Gustavo Gili, Barcelona 1980, p78-81)

The depth configuration shows an extremely high proportion of collective spaces with a combination of territorial transition, overlap scenarios and sequential gaps. The provided dual orientation increases the **level of complexity** within the territorial configuration, stimulating **simultaneity and multiplicity** within the project.



Figure V.91: Hely, Bell and Horne's residential design for Saint John's Village, Glebe, Australia, 1962-1964: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

This last project could be seen as representative for the category of collective space configuration of multiple configurational models, looking for territorial complexity.

xiv. Streets and clusters

Till now we have studied cluster configurations, mostly based on collective space around a central courtyard, as one unit or divided and distributed along the site. However, cluster configurations can use the street as a main organising principle, combining or even substituting the central courtyard typologies as studied before.

The first example shows an urban project based on collective spaces, where we detect a combination of a central courtyard while acknowledging at the same time the street as a main design principle: Michiel Brinkman's Spangen project for the city of Rotterdam (Netherlands), 1919-1920. Here, the architect laid out a residential program that at a bigger scale aimed at the morphological definition of a streetscape-based urban block with a collective courtyard in its centre, reinforced by forcing entry through this shared space. However, the limits of this interior courtyard are defined by private gardens, adjacent or connected to the ground floor apartments. Shared passages cut through those gardens leading towards the neighbouring entrance doors of the ground and first floor apartments (see depth study of domestic sequences before). These long collective passages help to divide and organise the system of ground floor aggregated territories. Through the courtyard, one has access as well to well distributed staircases, leading to **an elevated street**, giving access to duplex apartments. From the street side, one can only enter the courtyard or the staircases: ground floor apartments can be reached only through the shared courtyard.



Figure V.92 : Michiel Brinkman's Spangen project, Rotterdam (Netherlands), 1919-1920: site

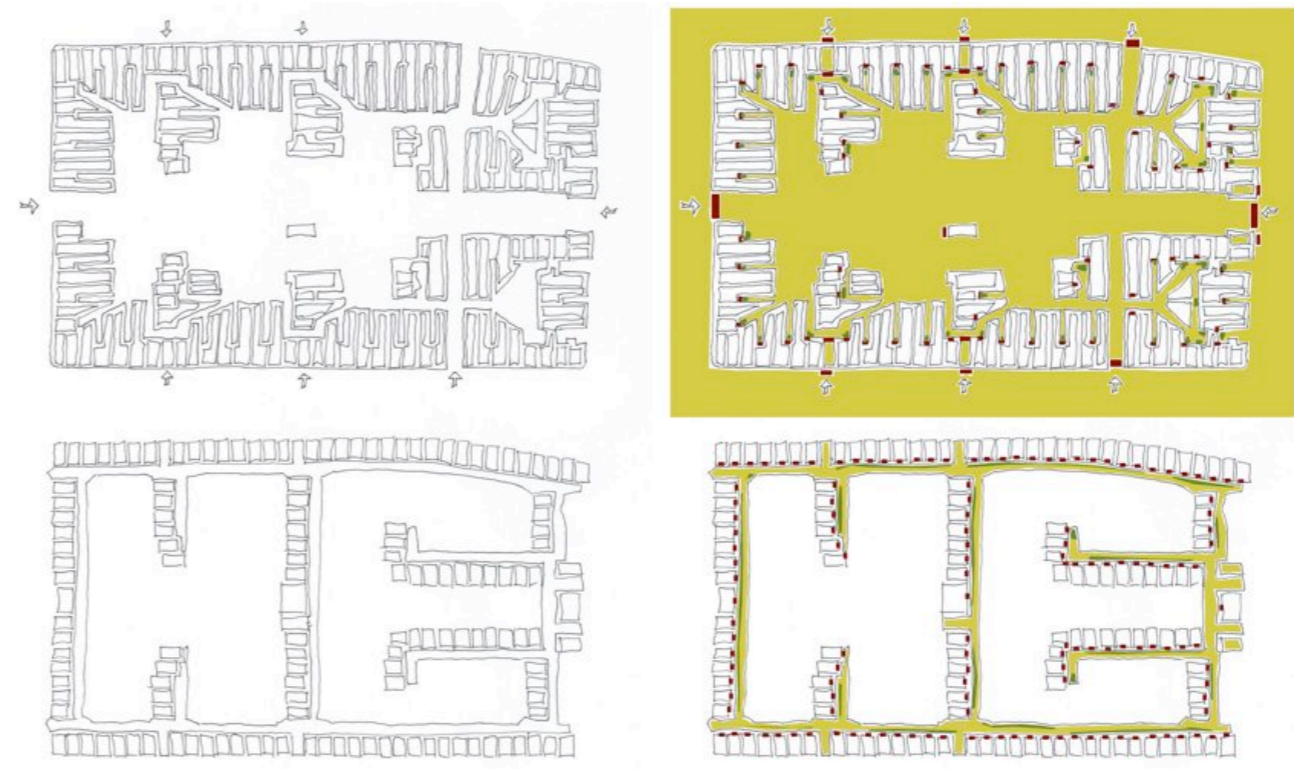


Figure V.93 : Michiel Brinkman's Spangen project, Rotterdam (Netherlands), 1919-1920: territorial structure and access configuration

It is interesting to detect an irregular shape and distribution of the central courtyard that in this case does not appear as a simple geometric device: it seems to **adapt, stretch or shrink to the needed scale**. The interior streetscape has a more informal and irregular appearance, contrasting with the more formal, smooth and continuous street alignment of the exterior façade of the urban block. The collective courtyard can be closed off at night to restrict unwanted users of the space. The design of the monumental gateways or arches one has to cross or walk through to get till the interior courtyard seeks to stress the change of territorial value within the project.

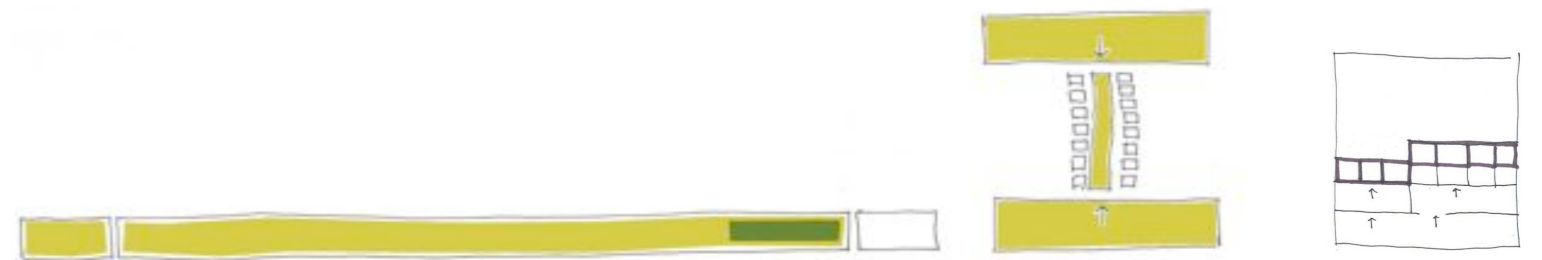


Figure V.94: Michiel Brinkman's Spangen project, Rotterdam (Netherlands), 1919-1920: depth diagram in territorial configuration, territorial configuration and territorial depth diagram.

The elevated street, giving access to the duplex apartments, tries to reduce the public dimension of that space and at the same time stimulates **spontaneous appropriation** of the outdoor spaces at the elevated level. The achieved domestic qualities of the space define a set of **overlap scenarios** the inhabitants seem to appreciate. This level of collectiveness is compensated by providing an **individual access to all dwellings**, independent of the location, orientation or size.

The resulting depth diagram shows a project with a complex visual, physical and territorial configuration. The collective parts of the project represent a high percentage of space and are reinforced by the planned or allowed overlap scenarios: the elevated street as well as the interior courtyard obtained both a high integration value. The multiplicity of combinations and sequences adds an added value to the territorial set-up.

xv. Streets as clusters and the case of open territorial transitions

J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's winning design for the new residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974, shows a particular interest for using **streetscapes as territorial clusters**. Collective space is not only distributed through courtyards but through the changing **thickness** of the new neighbourhood's streets. It is D. Mackay¹ pointing out the special relation between **community and spontaneous activity** within the built area. The general set-up of the project is characterised by a relatively compact configuration of low height and all design strategies aim at **increased social contact**, first among residents and second, with visitors to the area. Within the area we detect, besides a residential program, a commercial centre, various administrative, cultural and social centres, combined with more basic shared facilities (laundry, kindergarten, etc).

One reaches the project through four major areas, designed as reception areas for pedestrian as well as vehicular access. Except the Northern side of the area, some buffer areas are planned as **sequential gaps** within the approach sequence, meant as protection areas at a bigger scale to provide social and territorial distance. Once inside the mentioned reception areas, an interesting transition is planned towards the more small-scale areas by a perpendicularly oriented system of parallel streets or alleys that introduce an even more domestic scale. From there, another system of streets allows the residents to enter the very core of the project at the scale of the dwellings. Within this project, neither of these territorial transitions is pedigreed or forced: it seems that all residents or visitors are invited to **choose the wanted sequence**. The territorial boundaries of the different areas are not explicitly defined, nor read: the **urban cues are subtle and inviting**.

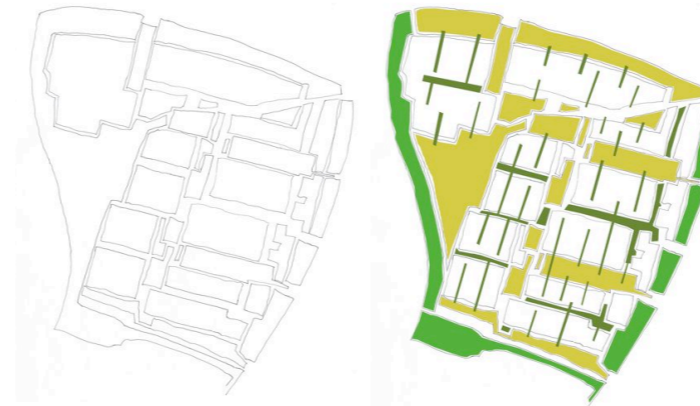


Figure V.95: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood in Galgebakken, Hebstederne (Denmark), 1969-1974: access configuration of general set-up

At a smaller scale, we detect the importance of the street as a cluster: groups of buildings are organised in that way that they define a new typology of urban block but without forcing a strict street alignment, neither did the architects oblige a constant thickness of the street. Different street typologies, based on communal space use, are combined to offer an interesting variation of cluster configurations. Besides that, orientation of the individual buildings, as well as of the streets, turns the wandering through the neighbourhoods into a non-repetitive experience, an urban sequence or **territorial rhythm** with **changing interval** and constructive spacing mechanisms.

A closer look at the street configuration illustrates a coherent and socially controlling access distribution, allowing **entrance personalisation** and at the same time sharing some **set-back collective spaces**.

¹ D. Mackay, "Viviendas Plurifamiliares: De la Agregación a la Integración", Gustavo Gili, Barcelona 1980, p134-137

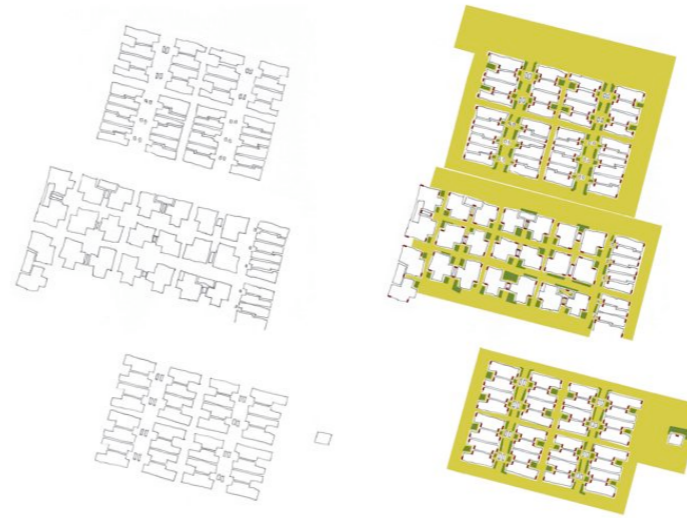


Figure V.96: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974: access configuration of urban block configuration

The very composition of the different housing typologies as domestic systems of **included and overlapped territories** stimulates a spontaneous yet controlled use of urban space. The endless variety of appropriation possibilities, changing morphological set-up and related sets of distances, together with scale variations, turns this residential project into a successful urban experiment of depth configurations. The deliberate system of **flexible distances**, always coherent with the planned program, means an added value to the structure of the collective space.

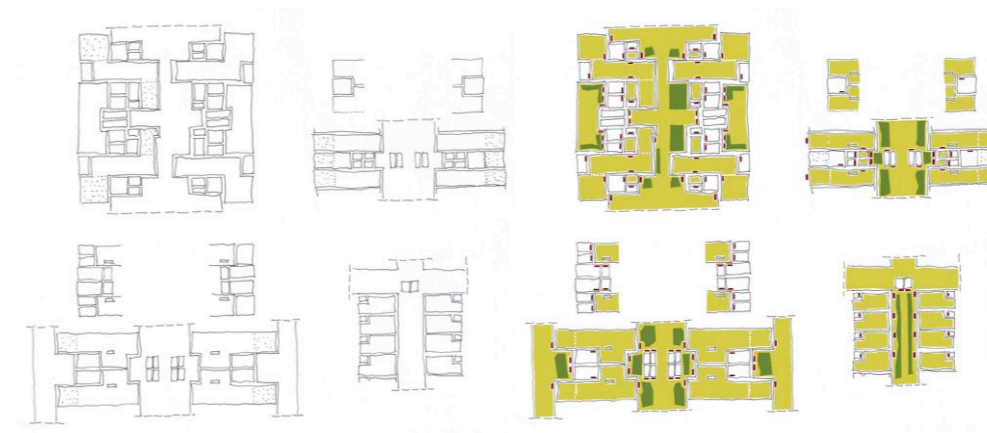


Figure V.97: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974: access configuration of different housing typologies (from left to right, above to below housing typologies 1, 2, 3 and 4)

The offered housing typologies are mostly based on **territorial transition**, however without too sharp demarcation of the included territories. Besides that, most dwellings obtained **dual orientation**, combined with several **outdoor overlap scenarios** between areas with changing collective dimension. Inside the dwelling, depth configuration has a relatively high proportion of collective spaces but with a surprisingly traditional set-up, based on territorial transition and even the appearance of a distributing corridor-like night hall, before entering the sleeping rooms. All dwellings are divided into 2 basic sectors: an area oriented towards the exterior (hall, playrooms, eating area, kitchen): towards the collective garden as an extension of the property. The second area is more complex, closed and private (living area, bedrooms...). In some areas, every 2 or 4 families share a private garden (typology 2 or 3). It is mostly the outdoor configuration that allows the flexibility in use, **blurring traditional public-private distinctions** in the neighbourhood.



Figure V.98: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974: depth diagram in territorial configuration (detail of sequence in housing typology 1)

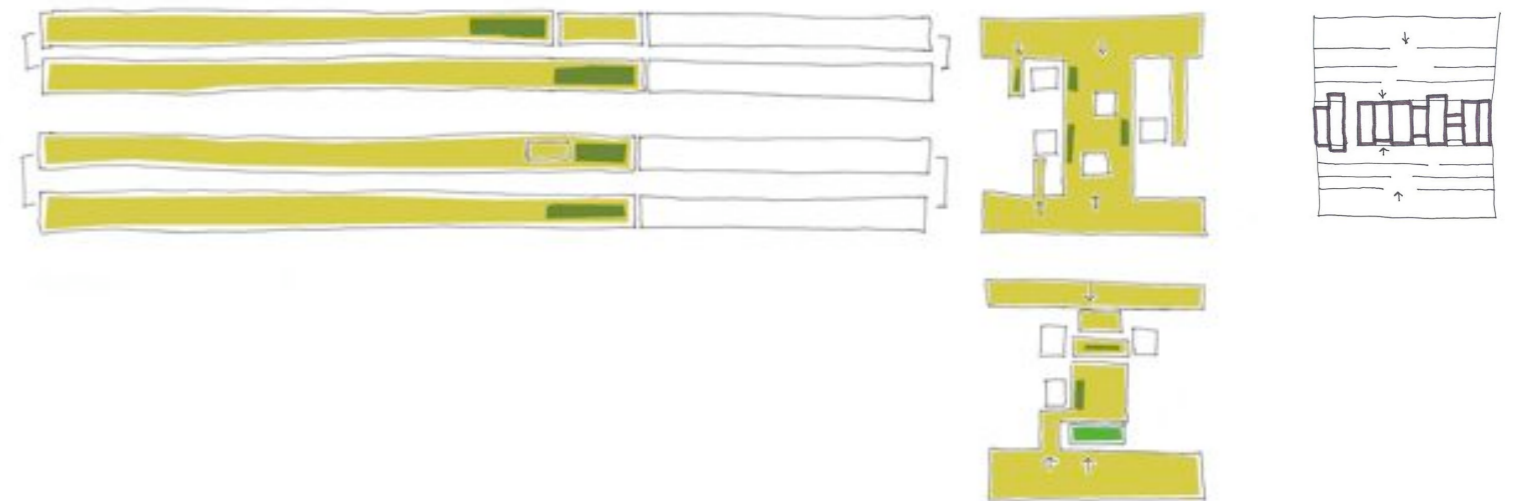


Figure V.99: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974: depth diagrams in territorial configuration (above representing typology 1, below typology 3), territorial configurations (above for housing typology 3, below for general set-up) and territorial depth diagram (general set-up).

The depth configuration shows at all scales a great **variation** in possible sequences, linked, overlapped or crossing each other to add complexity to the configuration. Most typologies of streets, alleys or squares, as well as all typologies, seem to have the right balance between individual and collective areas, divided -not separated- in a subtle way, each time combined with overlap scenarios with different size, scale and orientation. We call this a project an example of a configuration based on an **open territorial transition with flexible boundaries**. Variation within the territorial configuration, based on overlap scenarios, sequential gaps and a simple access configuration helps to add urban complexity to the neighbourhoods' system of **horizontal interfaces as a collective structure**.

A different outcome can be detected with a residential project that at first sight seems to be based on the same principle of streets as cluster configurations, but that after studying the territorial set-up, shows different results. We can use the example of the residential Malagueira project by A. Siza between 1973-1977. Malagueira was designed as a suburban community of 1,200 dwellings on the outskirts of Évora (Portugal), an old Roman town of about 40,000 inhabitants.

Two existing neighbourhood communities, Santa Maria and Nossa Senhora da Gloria, had grown up along one of the radial roads leading out of the city, creating an East-West axis. A meandering stream running in a general North-South direction on this side of the city, passed between the two villages and this space was the site for the new community. Other traces of the former occupation of this area were used to define the structure of the area. The gridiron organisation of Santa Maria was the model for the layout of the new quarter forming a new street pattern of smaller fragments of a tartan grid of parallel rows of streets and alleys and back-to-back patio houses. The largest of these groups extends along the North edge of Santa Maria forming a long narrow zone opening to open public spaces along the stream. Other smaller fragments of the grid were attached to the ends of the original barriro, essentially enlarging the perimeter of the village. Still other groups were sited at different angles forming several separate neighbourhoods responding to alignments suggested in the landscape. The meandering interstitial spaces between neighbourhoods are part of the public open spaces that followed pre-existing paths and other features in the landscape, as the author mentions.

These areas between built-up regular clusters of houses, are used for community uses, shopping, parking, recreation, and pedestrian circulation.

Besides that, a system of raised concrete aqueducts connects the separate residential clusters and provides the infrastructure for water and electric distribution.



Figure V.100: A. Siza, Malagueira residential neighbourhood, Évora (Portugal) 1973-1977: territorial structure and access configuration: general set-up.

The general set-up can be drawn as a **system of collective territories**, based on pre-existing traces, natural and artificial infrastructures. The whole urban project consists out of a parallel street-network on a regular grid, carefully distributing individual access along the domestic streetscape. Here, we detect a model of **aggregated territories** with no interest for overlap areas at the level of the street: these are planned at a bigger scale as urban “collective rooms”, producing a discontinuous pattern within the open spaces. These big-scale urban spaces sometimes work as sequential gaps, other times defining a territorial transition between the different “rooms”, packed with residential program. These collective spaces obtain a **high integration value** with the big scale configuration, which is not the case for the interior streets as collective spaces, that obtained a rather limited **integration value**. Almost no overlap scenarios are contemplated within the streetscape itself: as mentioned before, this scenarios seem to happen at a bigger scale.

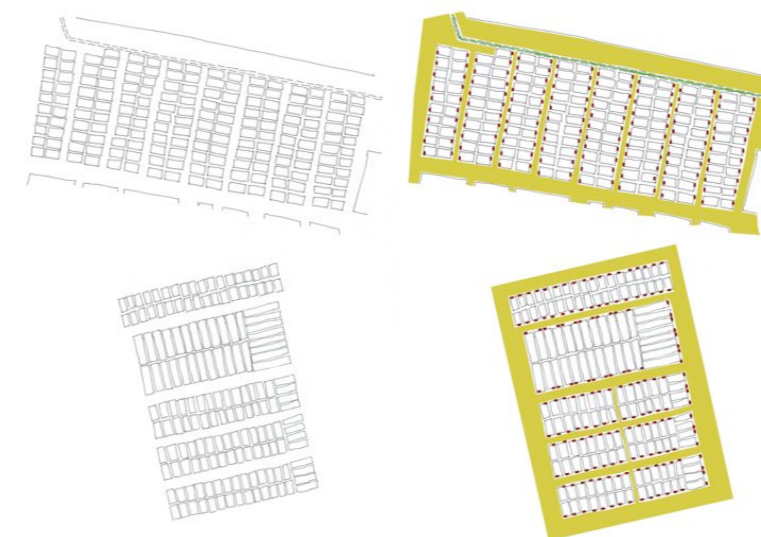


Figure V.101: A. Siza, Malagueira residential neighbourhood, Évora (Portugal) 1973-1977: access configuration urban blocks

The rows of dwellings in Malagueira, although they are only 2-stories high, share a back-to-back section with each facing a street. The dwellings at Malagueira are patio or atrium types with an L-shaped group of rooms on two sides of a small interior patio. There are two similar types, both built on an 8m x 12m plot, one with the courtyard in front and the other with the courtyard at the rear. Both have living, dining and kitchen spaces at the courtyard level with an interior stair leading to bedrooms and terraces above. The two types can be combined in several different ways resulting in different

patterns of solid and void. This manipulation of the paired combinations is a key to the rich concatenated rhythm that is achieved with a pallet of only two dwelling types. Wall heights vary from entry gate height, to the second floor height to a vent wall that is perpendicular to the street and extends to the height of the second floor roof. This range of wall heights coupled with the alternating position of the patios and terraces results in a rich three-dimensional composition. The construction follows the topography so the houses step along the street as well as stepping perpendicular to the street. This further adds to the **compositional variety**. Seen from a distance, the houses seem to be taller than just 2 floors as they step up the contours giving the impression of a much denser, taller, terraced organisation. The very limited pallet of doors and window shapes also vary in height with the contours furthering the concatenated organisation of walls. The houses are designed to be added on to over time by the occupants so that they can begin as a simple two room house built on one level that can be transformed into a much larger dwelling with several bedrooms, multiple baths, and roof terraces, as we studied in some previous illustrating case studies. The incomplete quality of the evolving houses within the walled volume helps break down the strict repetition typical of most low cost housing.

The configuration of the housing typologies shows a relatively high proportion of collective areas with no special attention given to indoor overlap scenarios. The complexity however seems to depend on the way of combining several parts of the program, introducing several cases of **dual orientation** for some rooms or corridors, sometimes combined with outdoor spaces. The calculated and programmed size flexibility of the dwellings helps to appropriate the dwelling easily. At the end, it became of an urban project of **private courtyards, simple streets and collective parks**, squares and strips, where territorial transition only seems to be defined at the biggest and the smallest scale.

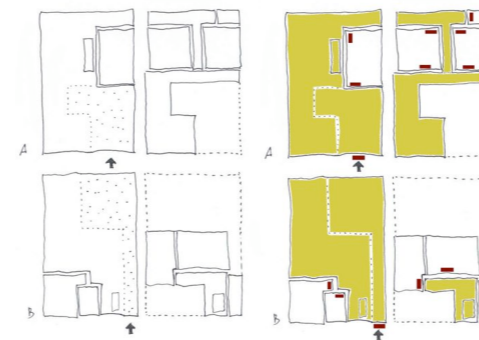


Figure V.102: A. Siza, Malagueira residential neighbourhood, Évora (Portugal) 1973-1977: access configuration housing typologies

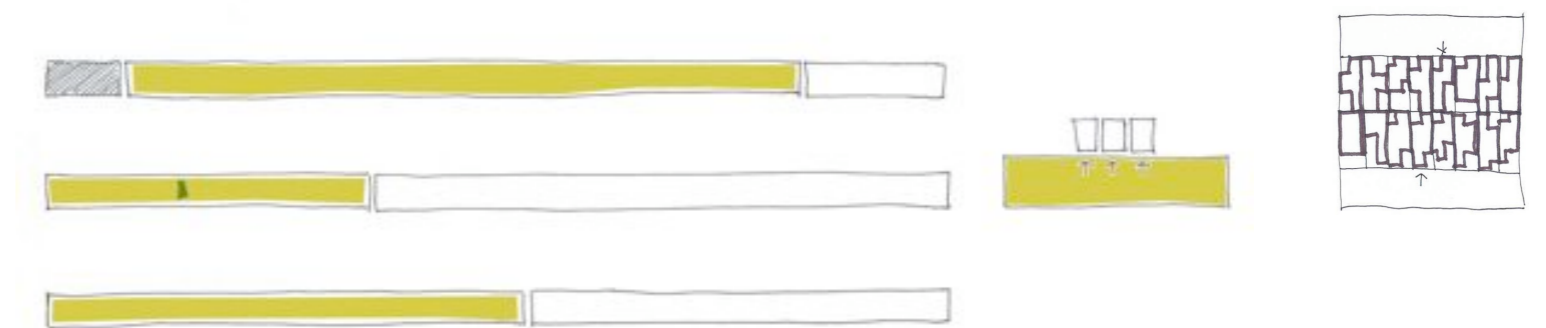


Figure V.103: A. Siza, Malagueira residential neighbourhood, Évora (Portugal) 1973-1977: depth diagrams (above: depth housing typologies; middle: urban blocks; below: general set-up) in territorial configuration, territorial configurations and territorial depth diagram.

Depth diagrams of the housing typology show simple sequences with a higher proportion of collective spaces where flexibility lies in the morphological complexity and available dual orientation, less overlap scenarios. The depth diagram at the scale of the urban block shows an even simple scheme with a minimal indication of sequential gaps, as a result of the planned viaduct crossing as an informal way of boundary crossing. No long territorial transition are planned: as mentioned before, the territorial set-up cherishes a simple and honest streetscape as a result of a repetition of clear depth

sequences. The general set-up's depth diagram and territorial depth diagram show again the simplicity of a project, based on small-scale variations at the level of the aggregated territories.

Indeed, this project shows no such complex territorial configuration at the level of the street, neither is the street understood as a complex cluster: this is orchestrated at a slightly bigger scale, as a configuration of "territorial rooms".

xvi. Streets as territorial configurations: the horizontal interface

As mentioned before in the chapter about the relationship between boundaries and depth, territorial street configurations are an essential part of urban systems. The previously mentioned projects show the idea of **streets as territorial clusters**: as containers of collective spaces with several boundary delimitation schemes. However, only studying streets as clusters might be too reductive, as there are other models of containing and distributing collective space within streetscapes.

The previously mentioned illustrating case studies in New York City and Barcelona offer a wide range of configuring collective spaces along streets, according to their appearance, structure and importance for the urban fabric.

As opposed to the centripetal structure of the cluster projects, here we detect linear territorial configurations with definition and demarcation of multiple boundaries (see previous chapter). The urban interface, as the dynamic boundary between public and private areas, might be redefined by taking into account models of **collective space production**. As opposed to S. Anderson's idea of level distinction and rather limited extensions of private or public areas, overlap scenarios as a form of sharing space deserve a treatment as an **autonomous entity and powerful device**, being more than an urban appendix of public space or a simple extension of the private realm. Besides that, instead of seeing the urban interface as a single or multiple vertical surface, we might consider it a **horizontal device**, reinforcing the idea of S. Anderson's **transactional space**. This **horizontal interface** is a surface, working in the horizontal direction, with an ever-changing position of its own defining boundaries, sometimes time-related, sometimes seen as a permanent feature, incorporating overlap scenarios, sequential gaps and manifesting itself as a long or a short territorial transition with clearly marked or rather slightly suggested territorial boundaries.

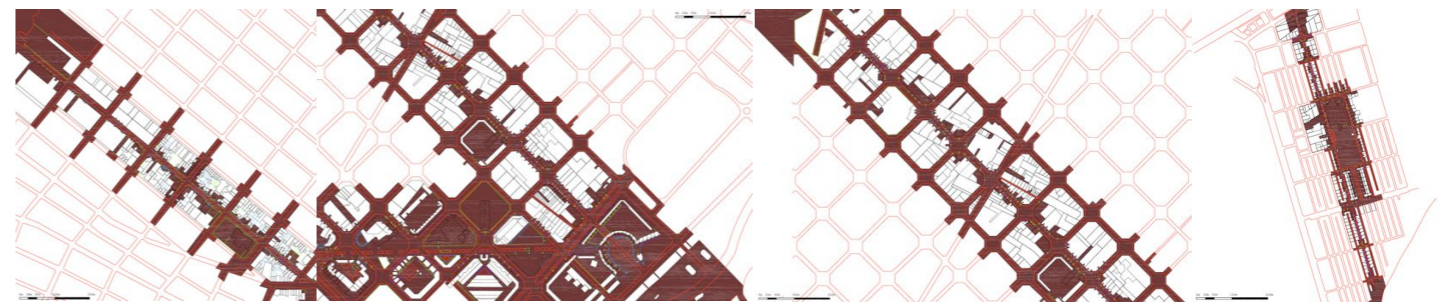


Figure V.104: Mapping of collective space or space with access restriction in the three studied areas in Barcelona and New York City (maps represented at the same scale) illustrates the possible variety of appearance of collective space as a horizontal transactional interface.

The mapping of (differential) collective spaces within the linear configuration of North 5th Street in Williamsburgh, New York City (United States), shows a horizontal interface with a rather irregular form and structure, as mentioned before. Its **pulsating dynamics**, sometimes penetrating deep and strongly into the defining morphology or in other cases operating through an almost **capillary** and **subtle** touching of more private properties, define the identity of the neighbourhood in transformation. The Avinguda del Bogatell sequence offers a different reading: here the horizontal interface does not only penetrate punctually into the more intimate areas of the project, but really cuts through the whole area: the collective surface can be read as a real **field**, eliminating the presence of entire urban blocks or reducing the presence of a building to an isolated fragment. Here, the scale of the horizontal interface is much larger than in the previous case. The Carrer d'Àvila map shows a similar structure as the Williamsburgh case, however, the scale of intervention is bigger and the

condition of the street grid remains almost intact, as opposed to some parts of the Williamsburgh case. The studied area in the Barceloneta neighbourhood shows, besides the different scale of the general lay-out of the area, a horizontal interface of collective space that seems to **coincide with traditional inside/outside distinction** or even the simple private/public gradient (based on property). However, as mentioned before, the specific model for this area depends on **time related small-scale carvings**, demonstrating a more subtle and at the same time **fragile** urban model of time-related collective space acupuncture.

The systematic mapping of differential collective space (that is the difference between traditional “public space” and collective space as the total of shared territories, independent from the property structure, in sections and diagrams indicated in yellow colour or in orange colour when there is a time dependency) as part of the collective structure of the studied areas gives different insights in the functioning of these linear cluster configurations. The Williamsburgh area shows an **irregular depth line** with **several small set-forward or set-backs** and a rather **irregular offset-profile**: sometimes the depth configuration depends on one single line indicating a short territorial sequence while just next to it, depth depends on several offsets, parallel to the street axe, defining various collective areas as part of a territorial transition of systematic reduction of collective use. Many of the local configurations are based on small scale **overlap scenarios** or **sequential gaps** (distancing, see previously studies sections). Besides the collective space related to the commercial activities on Bedford Avenue (that is near the middle of the sequence), a perfect balance can be detected in between the time related collective space and the permanent one, even though different scales of intervention can be detected. We recognise a **linear integrated configuration**, based on the use and form of the street itself.



Figure V.105: Detail of Boundaries and depth at the studied Williamsburgh area: differential collective space s (yellow and orange) and territorial depth (red lines), compared with the Poblenou Avinguda Bogatell area.

The Poblenou equivalent at the Avinguda Bogatell illustrates a different pattern: the configuration obviously does not depend on the designed avenue but is based on an **introverted model** of collective space production: the depth configuration complexity depends on the orientation of the accessibility, structured by many **territorial transitions of explicitly defined boundaries**. **Overlap scenarios and sequential gaps do not have a structural meaning** within the area. Visual depth lines are visually better controlled in the Williamsburgh area than in the Poblenou region that shows **many gaps in social control**.

The Barceloneta differential collective space (as a part of the total collective space) mapping shows an extremely high dependence on **time-related occupancy** while the visual control over depth lines is very high and except for one block, a continuous pattern. However, the depth configuration does not depend, as it was the case for the Williamsburgh model, on multiple offset depth lines, irregularly interrupted, but on a **regular repetition of the same scenario**, combined and with spontaneous overlap areas. Permanent differential collective spaces are not common, neither do they have a structural impact on the neighbourhood.

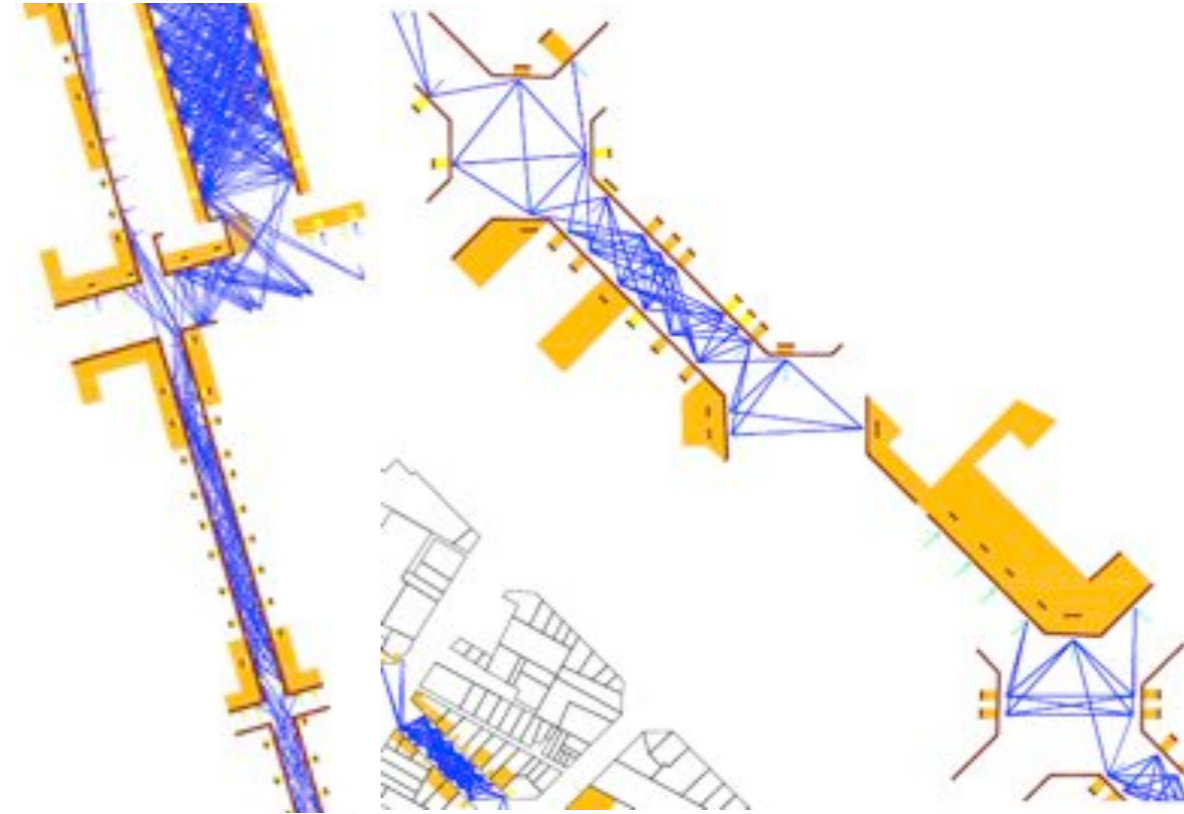


Figure V.106: Detail of Boundaries and depth at the studied Barceloneta area: differential collective space s (yellow and orange) and territorial depth (red lines), compared with the Poblenou Carrer d'Àvila area.

The depth configuration of the Poblenou Carrer d'Àvila area again shows a different model: small scale and big scale differential collective spaces vary, as a contrast to the absolute depth value that seems to be low and constant for the whole area, except for the Olympic residential strategies. The maps show a **lower visual control of the depth lines**: the visual configuration is **less integrated** and constant than in the Barceloneta case. This lack of visual control of access distribution might explain the lower levels of security and less lively character of the area the inhabitants seem to complain about.

The 4 maps lay out the **different structural qualities of collective space** within the studied streets or avenues as examples of linear territorial configurations and show other possibilities than cluster-related introverted collective strategies. The more spontaneous or pre-defined aggregation or integration of repetitive or singular territorial transitions, overlap scenarios and sequential gaps at different scales indicates the complexity of territorial configurations at urban scale.

The presented comparative maps for each of the four studied areas indicate the importance of a clear definition of the different used parameters, based on access restriction. The comparisons illustrate the **matrix-like coherence between proximity as a set of relative distances, permeability as a territorial access configuration, the nature of boundary definition, depth configurations and its visual control**.

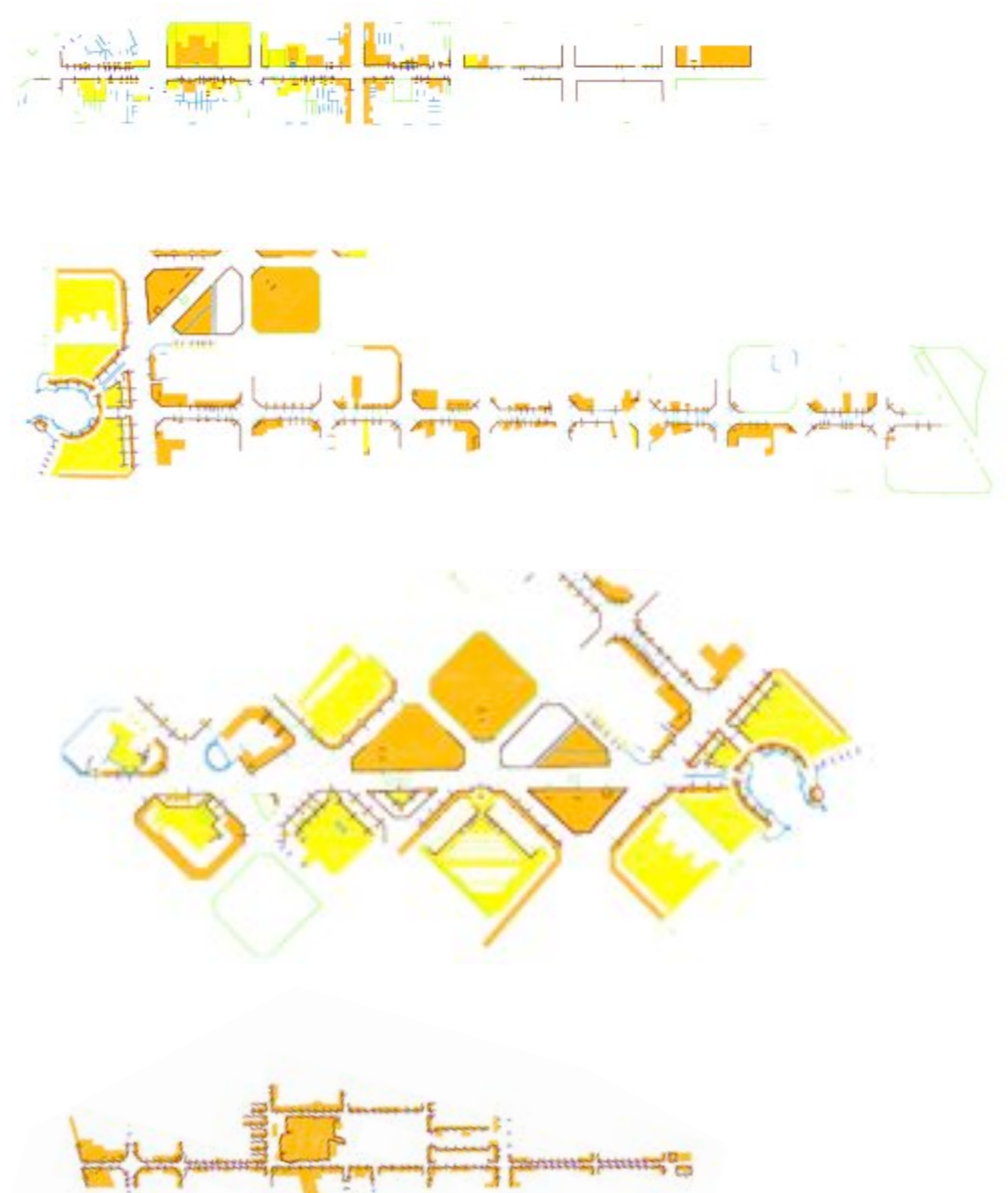


Figure V.107: depth configuration and (differential) collective spaces in the four areas (from above to below: Williamsburgh case, Poblenu Avinguda Bogatell case, Poblenu Carrer d'Àvila case and Barceloneta case) (maps represented at the same scale)