

VI. Conclusions: Depth configurations

i. A complex framework for depth

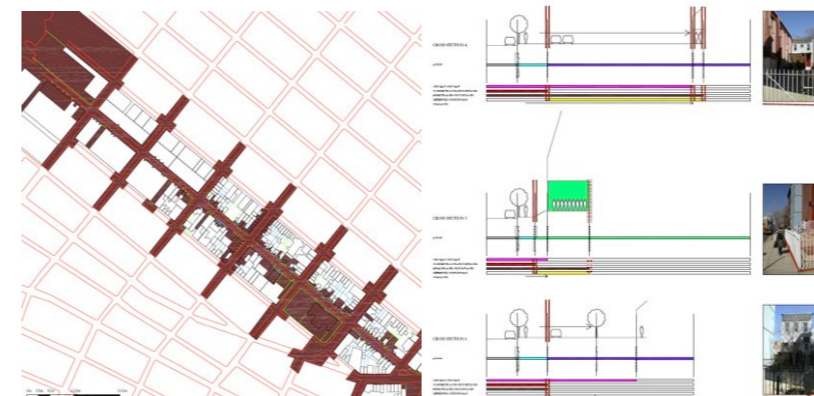
Depth is related to models of space organisation in ever-changing aggregated, included or overlapped territories: defining and controlling access provides territorial control. Territorial mechanisms are based on creating asymmetrical relationships: **territorial control** tends to establish vertical relationships that avoid equal or indifferent accessibility between different space users at all scales.

Hierarchical as well as non-hierarchical reading of depth suggests the existence of **configurational systems**, with several determining urban parameters and simultaneously operating agents. Both theories coincide in the importance of depth and the permeability within spatial configurations.

More traditional reading of depth configurations uses hierarchy to explain systems of included territories: rank, position and order of urban elements define territorial hierarchy based on dominance and enclosure. The mentioned parameters to design or read depth are dual orientation and territorial overlap. Within this conceptual approach, the present of shared space is described as the main element that defines changing depth values within a configuration.

Other territorial theories focus on the role of an element within a solid **relational system** and emphasise non-spatial and non-hierarchical factors. In this discourse, distribution, interchangeability and relative position are mentioned as elements that can change depth values.

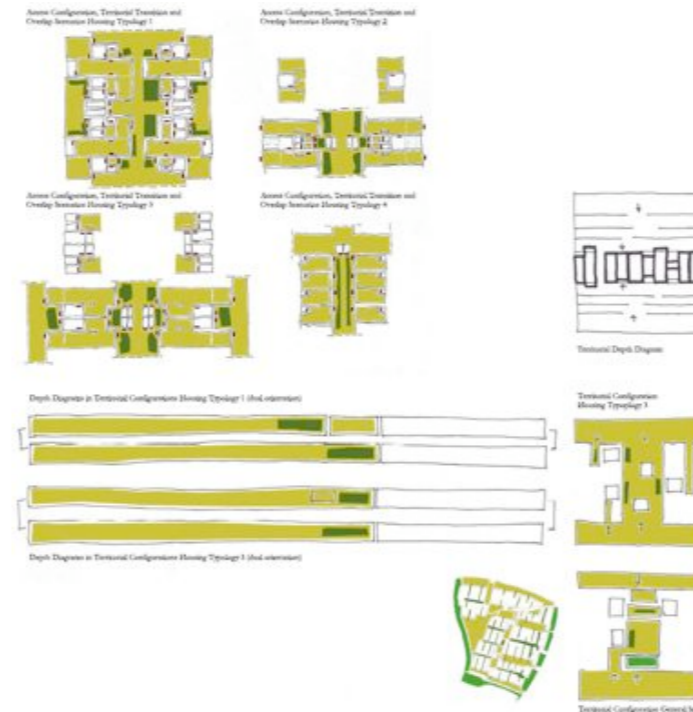
The non hierarchical reading however, offers another important issue: the idea of **integration value** to measure the qualitative dimensions of depth configurations. Linking this with the previously mentioned presence of shared spaces within an urban project, we can conclude that it is **the structural role, the position and the specific character of shared spaces within a configuration** that affects depth. Various case studies at different scales show the importance of shared spaces in urban projects and prove the mentioned statement.



As a result, we can say that depth does not only depend on the amount of territorial boundaries crossed, or on the amount of collective spaces within a sequence, but on the way of **configuring shared spaces** within a project: it is the integration value of the shared space that defines the quality of the depth configuration. In other words, depth does not depend on private-public distinction but on the qualitative reading of **collective spaces within an area**, defining carefully the level of sharing within a project. We could say that increasing the amount of collective spaces does not necessarily increase the value of depth: this depends on the configuration of proximity and permeability of the project at different levels.

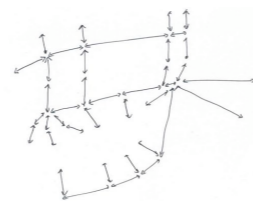
Various case studies and references prove urban interface to be a (time dependent) **horizontal transactional collective** space, containing long and short territorial transitions, included or overlapped territories, sequential gaps or critical

adjacencies, and varied cases of dual or multiple orientation. Collective space is no necessary synonym for territorial overlap scenarios, it can contain them.



Contemporary understanding of complexity again points at non-hierarchical reading of the built environment and suggest **multiplicity and simultaneity** in urban projects: predefined linear depth sequences, forced as continuous movements do not necessarily have to be an obligation. The acknowledgement of the **emergent** character of configurations, that is not completely dependent on top-down design or planning strategies, helps to define flexible and sustainable environments.

ii. Spacing mechanisms and proximity



Linked with the idea of collective spaces, different recipes of **spacing mechanisms** define **proximity** within the territorial configuration: case studies and references prove depth to be not only dependent on access configuration but on sets of **relative distances**, stretching or compressing programs and building within the configuration. From personal to more public distances, access can seem more easy or more restricted, depth can seem higher or lower. Privacy is detected as the motor of these spacing tactics: besides territorial desires, space users seek to differentiate intimate from collective areas at all scales. In-between spaces, buffer spaces, sequential gaps, voids became increasingly important within the organisation of the built environment. Preferably, **larger distances** in between neighbourhoods, properties, buildings or different programs are applied to guarantee territorial control as a part of territorial segregation and specialisation tactics. At the same time, we detect a **diminishing interest for integration and overlap**: since modern planning principles, segregation and separation seems to have become a constant factor: a tendency of progressive distancing is detected. Case studies showed that in the history of urban projects, depth has generally increased as not-structural buffer areas

were inserted systematically. Only some commercial projects try to reduce territorial depth, as easy access is linked with economic success.

These spacing tactics refer to larger physical distances, not to the appearance of structural gaps within a configuration. Even if we could justify an acceptance of structural gaps or voids in contemporary landscapes, recent urban projects seem to avoid discontinuous sequences because of the fear of losing control in these less defined intermittent areas. Often, urban projects are territorially over-designed while pre-planned appropriations discourage personal alternative territorial readings.



From personal space imposition till processes of large scale territorial segregation, proximity depends on physical, visual and territorial spacing tactics, influencing different ways of defining boundaries (a deep configuration is more than a long sequence). Models of proximity explain existing qualities and disentangle urban growth of urban projects from the scale of the domestic sequence till urban developments. Models of proximity influence the reading and design of depth, next to specific recipes of access configuration.

iii. Changing boundary delimitation

Delimiting boundaries reduce the risk of territorial conflict. Recently, even if some theoretical voices advocate collapsing intramural and extramural oppositions, the way of delimiting boundaries has been **radicalised**: as part of increasing territorial offset strategies, property delimiting walls are thicker, fences are higher, locks are added. In a way, the mentioned increase of territorial depth is not proportional with the way boundaries are treated: a general intensification of delimiting boundaries is noticed. Simultaneously, overlap scenarios are avoided and substituted by well planned territorial transitions of clearly separated territories. Ambiguously defined boundaries are generally avoided in new urban projects, independently from the scale of intervention. However, many projects do illustrate the possibility to organise space without over-codifying the territorial structure: invisible or subtle boundaries can sometimes be more efficient than explicitly stressed territorial borders.



Many designers or architects only recognise areas of territorial overlap as rather static, independent units, as fully recognisable entities or spaces, which implies a permanent geographical position and definition of its boundaries. However, some historical and contemporary examples have shown that, even if territorial overlap in some cases can obtain fix boundaries and position, this is no *conditio sine que non*, as overlap scenarios can also appear as time-dependent appropriations without permanent spatial occupation.

Recent phenomena point at increasing interiorisation and privatisation of urban space generating a radicalisation of boundary delimitation with two possibilities: complete visual exposure versus blinding boundaries. This can be applied to projects at small scale or can be seen in the case of urban parks that change the character and transparency of its delimiting boundaries.

iv. Territorial configurations as urban systems

Various case studies show a **systematic application** of individual or collective interfaces: structural repetition of types of access configuration or delimiting boundaries allow a **coherent reading** of the built environment. Patterns are detected, related with social or cultural references. Many recent middle class residential neighbourhoods tend to organise space through well orchestrated sequences, avoiding all possible risk for territorial interpretation: allowing multiple choice options within territorial configurations is considered a risky operation. Projects built for higher social classes try to explicitly exclude unwanted visitors from fortified enclaves, based on the use of extremely large distances: often territorial depth seems to stagnate or decrease while physical distances enlarge. Many neighbourhoods inhabited by lower social classes force inhabitants to share spaces by configuring shorter sequences, as a result of laying out smaller properties. Here, overlap scenarios are situated outside the territorial boundaries, related with the public realm. This model often becomes part of a socio-cultural code and is understood and accepted (only) within the community.

Social integration is a decreasing tendency within contemporary landscapes of programmatic and typological specialisation and increasing segregation, changing the reading of depth in urban configurations.

Obsession about security, image and privacy seems to take over initial territorial mechanisms. Related to this, space codification became more specialised and less subtle: territorial interpretation is avoided.

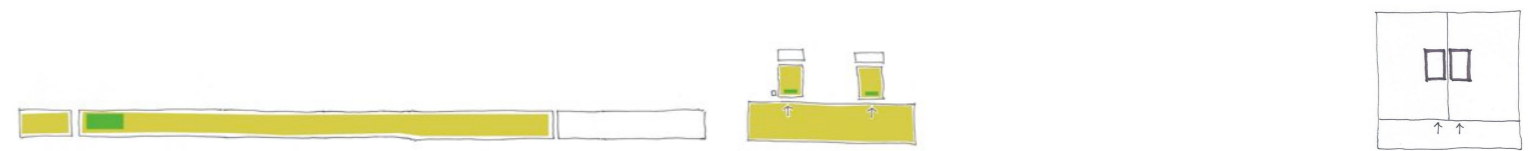
v. Collective structure

The presence of **shared in-between territories** in urban projects increases their territorial depth value. However, this conclusion refers to a rather quantitative understanding of depth configurations that not always explains the real value of depth. Domestic sequences, territorial clusters and street-related configurations were studied to unveil the **qualitative characteristics of depth configurations** at different scales.

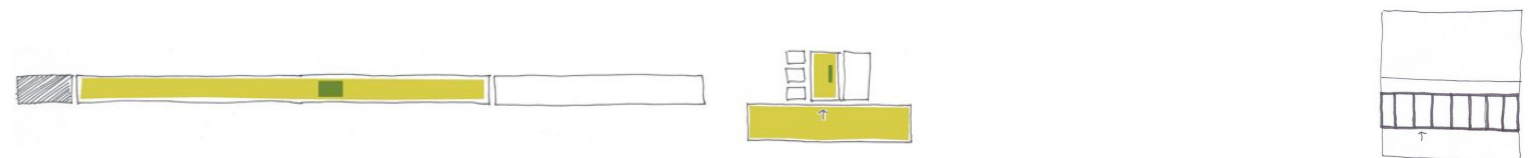
A historical review of domestic depth configurations explains the **changing role** of collective spaces within domestic depth configurations: ancient or pre-industrial housing typologies (like late medieval mansions or 17/18th century palaces) defined more continuous sequences that were less dependent on territorial boundaries. In these cases, depth experience was defined by the changing spatial qualities and temporal variation in access restriction. Depth did not depend on the use of corridors: high integration value was no synonym for corridor-based set-ups. We conclude that complexity did not depend exclusively on functional specialisation and segregation but on time-related **territorial suggestions of integrated or overlapped territories**. Later projects (from 18th and 19th century on) illustrate further specialisation and rationalisation resulting in an increased use of spacing mechanisms and excessive territorial delimitation that seemed to substitute the previous flexible configurations, simultaneous to an increasing obsession for absolute privacy. Besides that, systematic study of various domestic configurations proves depth to depend not only on public/private distinction but on the way collective space is integrated within the project. For each housing typology, a systematic drawing was made of its containing aggregated, integrated or overlapped territories with a later indication of (higher of lower) levels of collectiveness. This particular methodology allows detecting some patterns related to the amount, location and structure of collective space in the studied domestic depth configurations: strictly quantitative reading of the collective spaces does not explain the configuration.

Depth sequences do not necessarily coincide with long territorial transitions, that is a linear, systematic and predefined reduction of collectiveness and obtaining a regular rhythm. Other tactics define depth experience: multiple orientation, integration value, territorial interval defined by overlap scenarios and sequential gaps and spacing mechanisms can be seen as complementary to territorial boundaries defining territorial transitions. We can detect a **decreasing level of complexity** in some contemporary popular housing typologies (except from some singular architectural experiments), with **less subtle territorial codification**, allowing less user's interpretation. Contemporary domestic sequences show **less multiple choice strategies** and are more functionally based: in many projects, the integrated value now depends on simple corridor elements. There is an apparent 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. There is a 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. Spacing mechanisms as pure buffer strategies seem to have taken over. However, for the high-class detached housing typologies, 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. In this case, 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).

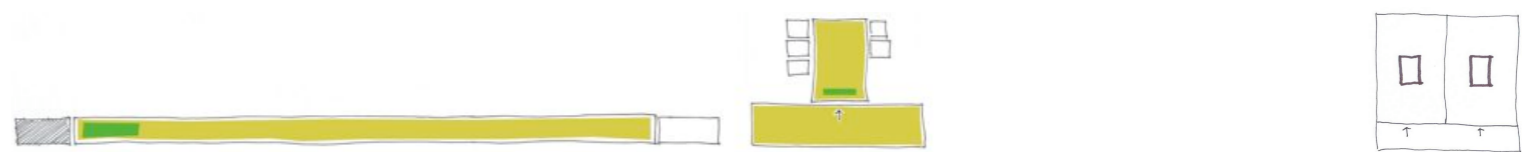
The studied examples show some projects with a very **simple configurational structure**: historical as well as many contemporary projects are based on this model that allows an easy territorial reading. Other projects illustrate a higher complexity, based on **territorial transition**, defined by an interval of territorial boundaries, with or without the combination of overlap scenarios or sequential gaps. This seems to be a very popular depth configuration in recent projects as there is no doubt about the collective level of the occupied territory. Another group of projects shows a territorial complexity, this time not based on pure territorial transition but on **systematic use of overlap territories and constructive spacing mechanism**, allowing a more open reading of the project. The last group of projects share the combination of different depth sequences to define the territorial configuration: multiple options define the project's complexity. In the last case, depth configuration does not depend on long territorial transition of explicit spacing mechanisms but is defined by the very combination, overlap or crossing of multiple sequences.



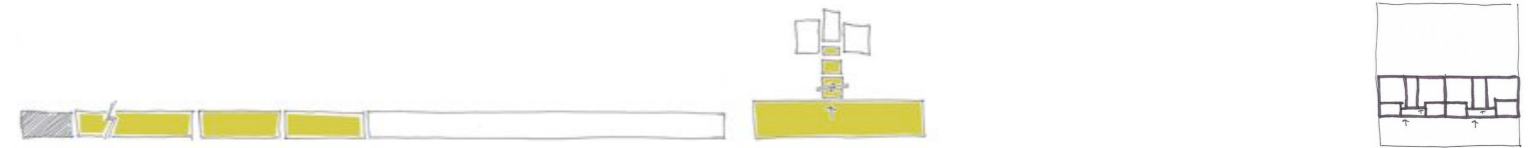
Simple configuration: E. Cacheux & E. Müller, Housing for labourers, 1853



Simple configuration: H. Tessenow, Residential project Dresden, 1919



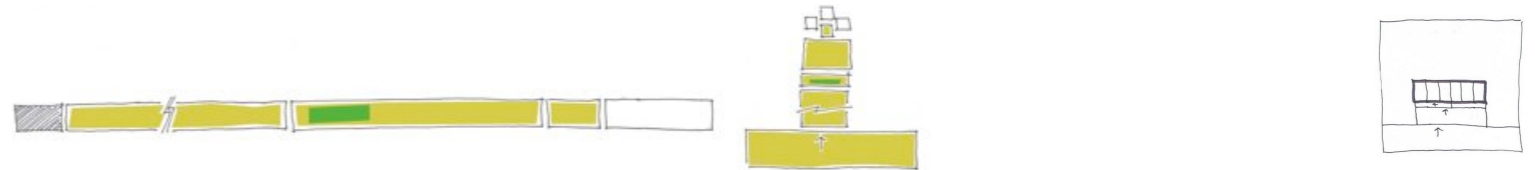
Simple configuration: Recent popular suburban real estate typologies, Area Metropolitana de Barcelona, 2008-2009



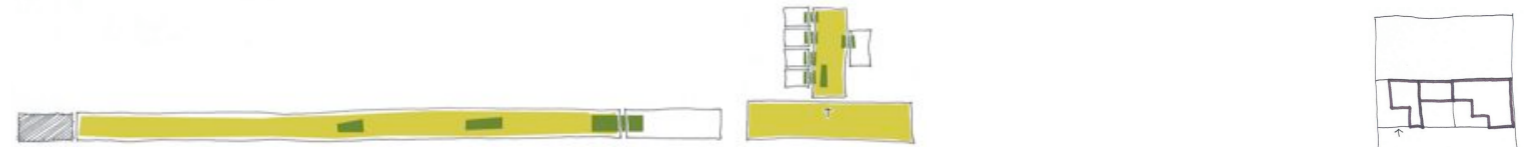
Territorial transitions: Recent popular urban real estate typologies, Area Metropolitana de Barcelona, 2008-2009



Territorial transitions with overlap: Alvar Aalto, residential project Hansaviertel, Berlin, Interbau 1957



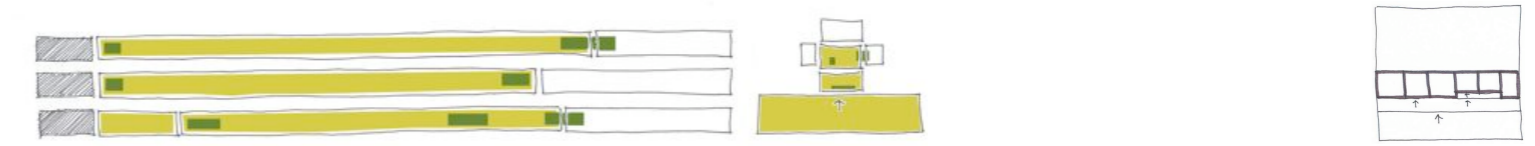
Territorial transition with sequential gaps: Ove Arup & Berthold Lubetkin, London Highpoint, 1934-1935



Configuration based on overlap scenarios and sequential gaps: T-house by Sou Fujimoto in Maebashi, Gunma (Japan), 2008



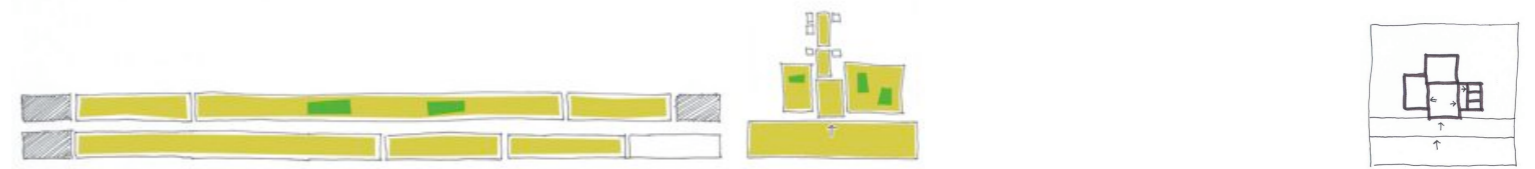
Configuration based on overlap scenarios and sequential gaps: Kitagata apartments by SANAA, Gifu, (Japan), 1994-2000



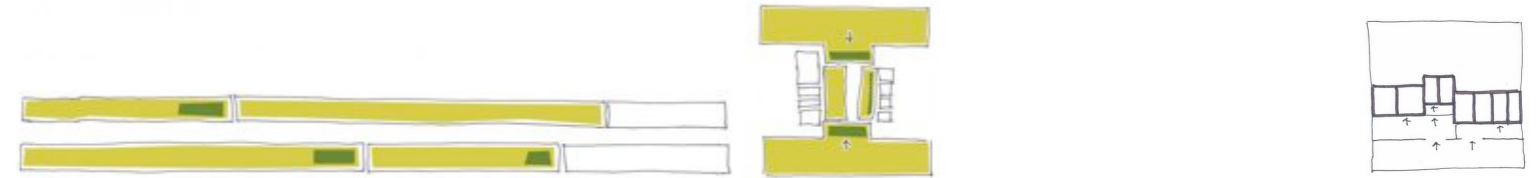
Configuration based on multiple options: Alvar Aalto, residential project in Helsinki, 1935-1939:



Configuration based on multiple options: M. Brinkman, residential block at Spangen, Rotterdam, 1919-1920



Configuration based on multiple options Herzog & DeMeuron's new Parrish Art Museum of Water Mill, 2006-2008



Configuration based on multiple options : Maki's Hillside Terrace in Daikanyama, Tokyo, (Japan) 1967-1969

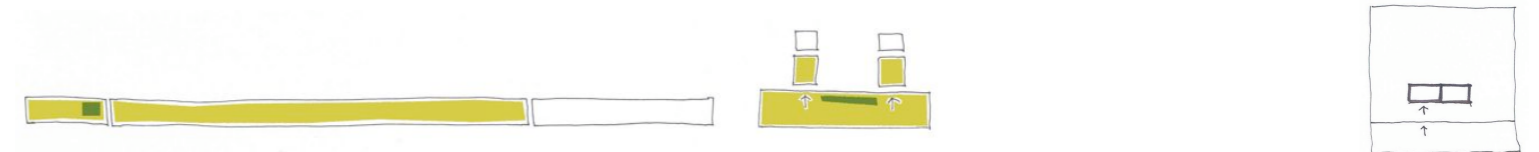
Within domestic sequences, being residential projects or other kinds of program, depth is only partly defined by the amount of shared spaces within the configuration. It is the very nature, the structure and position of those shared spaces that affects the reading of depth: access distribution, spatial 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. In other words, increasing the amount of collective spaces does not necessarily increase the real value of depth. Besides that, 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.

Next to the domestic scale, some projects at an urban scale use the idea of shared spaces or collective facilities as a real organising principle: the study of **territorial clusters** allows a more profound understanding of complex depth configurations.

Many historical urban design references dealt with the idea of simple groups of buildings or neighbourhood units, and related design tactics to stimulate cohesion and reduce social distances.

A systematic re-reading of some historical and contemporary proposals of clusters allows us to detect different types of clusters and a certain **flexibility of scale and position of collective spaces** within a territorial configuration. The structural qualities of collective spaces do not always depend on the central position within the sequence, neither do they have to be huge spaces. Collective spaces can occupy a starting, a central or a final position, as do territories with a more individual or private use and can have a minimal or more obvious presence within the configuration.

Within some studied cluster projects, we detect configurations based on **aggregation**: repetition and minimal insertion of collective spaces, not necessarily based on court-yard typologies.



Aggregated model and minimal insertion of shared territories: John Wood's farm workers housing proposal, 1806



Aggregated model and minimal insertion of shared territories: Joseph Gandy's farm workers housing proposal, 1806



Central and border position of shared spaces: Robert Owen: "Village of Unity", 1817

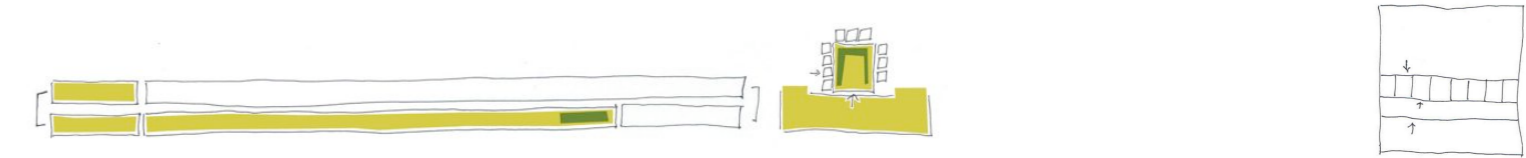


Central position of various shared spaces: Fourier's Phalanstère 1829

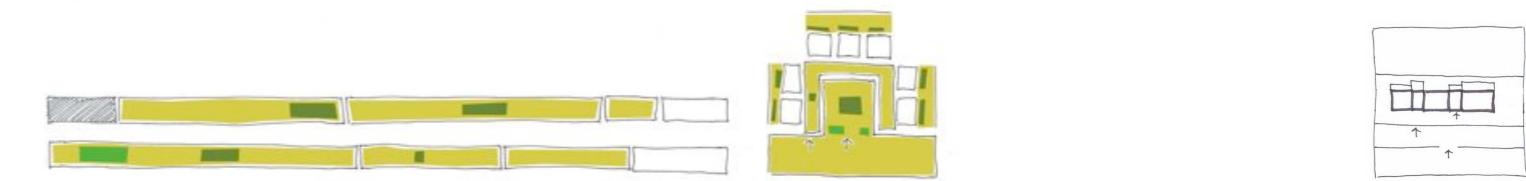


Central position of shared spaces with limited access: H.P. Berlage's Plan Amsterdam Zuid 1915-1919

However, most cluster projects do obey to the rule of centrally located and accessible shared spaces: here, **enclosure** is an important parameter of design. Some courtyard-based projects use a rather centripetal organising principle to define the cluster and illustrate an **introverted use** of collective spaces within the configuration. Some of them distinguish themselves by offering multiple options of access and movement through the project. Many cluster projects illustrate the ideological reference to a freedom of choice: sharing space is not always an obligation but an option: many cluster projects are defined by **dual (or multiple) orientation** where the users have the option of direct individual or shared sequences, allowing more appropriation possibilities.



Territorial clusters: dual orientation within the "kollektivhus" typology



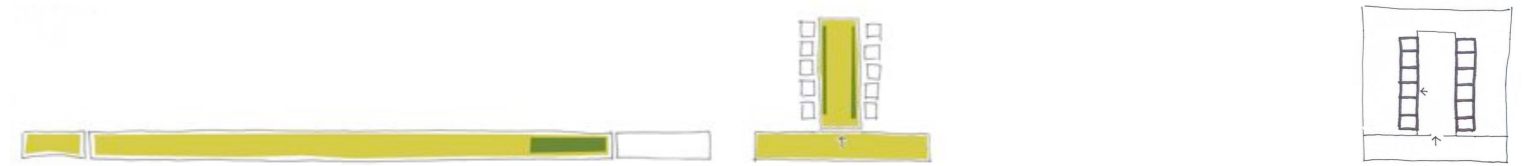
Introverted model and dual orientation at all scales: Aldo Van Eyck: Orphanage project, Amsterdam 1955-1960



Introverted model: C. N. Ledoux: Cénobie Chaux 1870



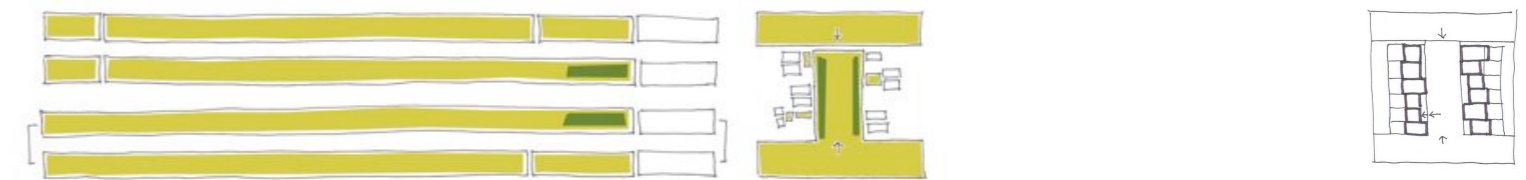
Introverted model: Hofje van Wouw, Den Haag, Netherlands, 1647



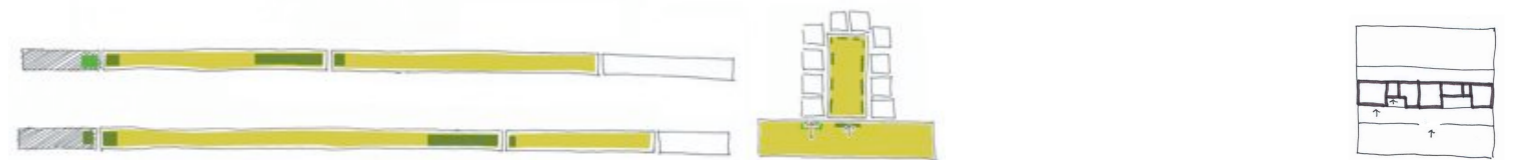
Introverted model: Beluiken Gent, Belgium 1845



Introverted model: James Gowan and James Stirlings' Trafalgar Road project in Greenwich, London, 1963-1969



Introverted model with multiple orientation: Willem-Jan Neutelings' Hollainkazerne, Gent, Belgium, 1990



Introverted model: A. Aravena: Iquique, Chile, Residential Project, 2003-2004



Introverted model with multiple orientation: Residential Block, Avinguda del Bogatell, Poblenou, Barcelona (Spain)

Within the series of introverted clusters, some projects however prove the appearance of a central position of the shared spaces not to be a constituting element for the cluster: even if a central courtyard is present, depending on the access configuration, the project can lose the characteristic of territorial cluster.



Introverted model with no integration value: Residential Block, Avinguda del Bogatell/Carrer de la Marina, Poblenou, Barcelona (Spain)

The next model can be called a **multiple model**: an almost infinite combination of territorial scenarios is combined in one single project: sequential gaps, overlap scenarios appear at different scales and in different forms, where central located shared spaces are alternating with more periphery-located collective territories. Multiple orientation is guaranteed on all levels and allows free interpretation of the configuration.

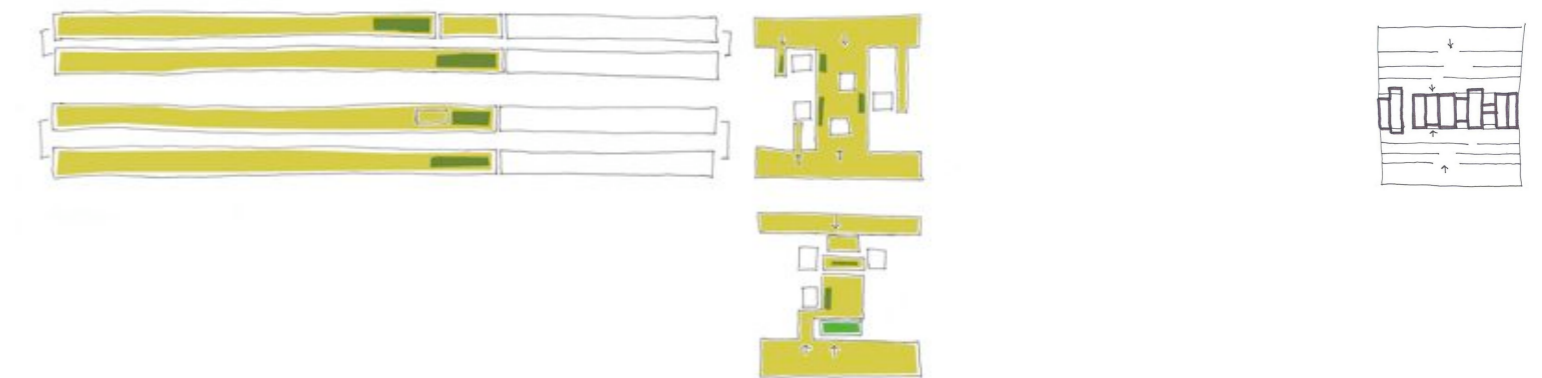


Multiple model: Hely, Bell and Horne's residential design for Saint John's Village, Glebe, Australia, 1962-1964



Multiple model: Michiel Brinkman's Spangen project, Rotterdam (Netherlands), 1919-1920

Most projects use collective spaces with a **high integration value** as a Leitmotiv for design. Here, the very combination of territorial boundaries, spacing mechanisms or sequential gaps, overlap scenarios and a wide range of ways of delimitating territories define depth configuration and stress the qualitative characteristics of depth configurations, just as at a domestic scale. Besides designing groups of spaces or the simple sharing of facilities, the collective structure allows infinite possibilities of moving through a building, of appropriating space, of meeting people. Combining different models of proximity, permeability and high integration values increases the **social cohesion** of the cluster, more than the simple provision of a courtyard as open space or predefined monoculture landscapes only defined by territorial locks. Streets can as well appear as territorial clusters, with the same cohesion facilities. As opposed to the centripetal structure of the cluster projects, we read linear territorial configurations with definition and demarcation of multiple boundaries. Some projects illustrate **open territorial transitions with flexible boundaries**: depth configurations are based on multiple options, less as predefined territorial transitions and operate at different scales simultaneously.



Open territorial transition with flexible boundaries: J. P. Storgard, J. Orum-Nielsen, H. Marcussen and A. Orum-Nielsen's residential neighbourhood of Galgebakken, Hebstederne (Denmark), 1969-1974

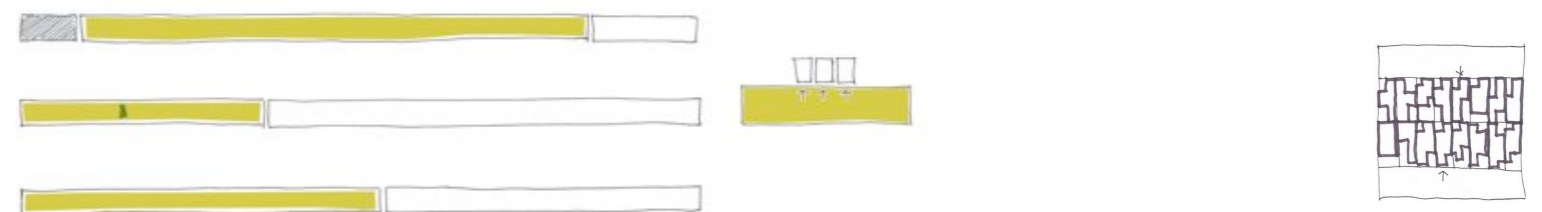
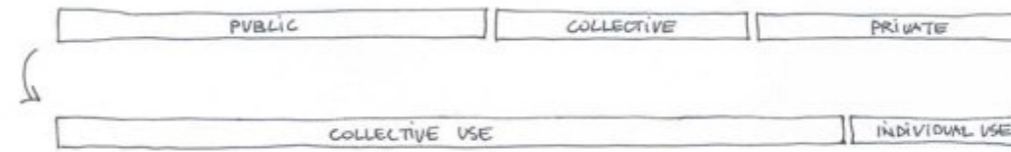
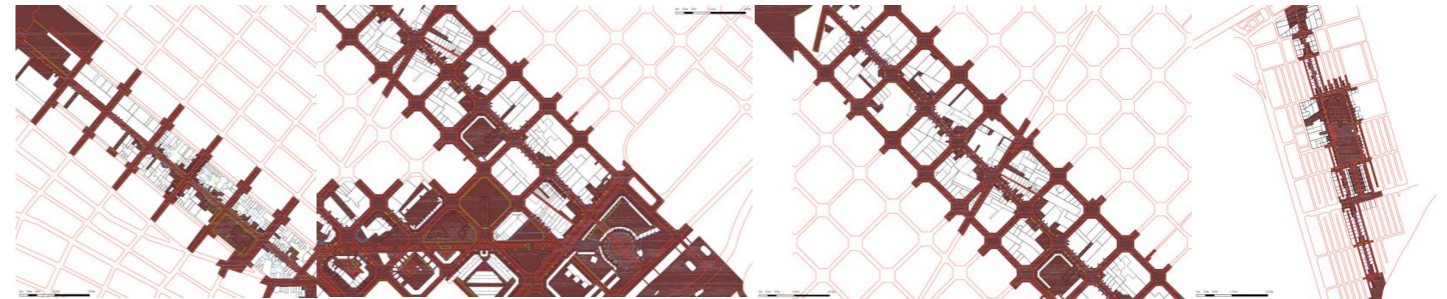


Figure x. A. Siza, Malagueira residential neighbourhood, Évora (Portugal) 1973-1977

A study of different streetscapes as territorial clusters lay out the possible **different structural qualities of collective space** 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.

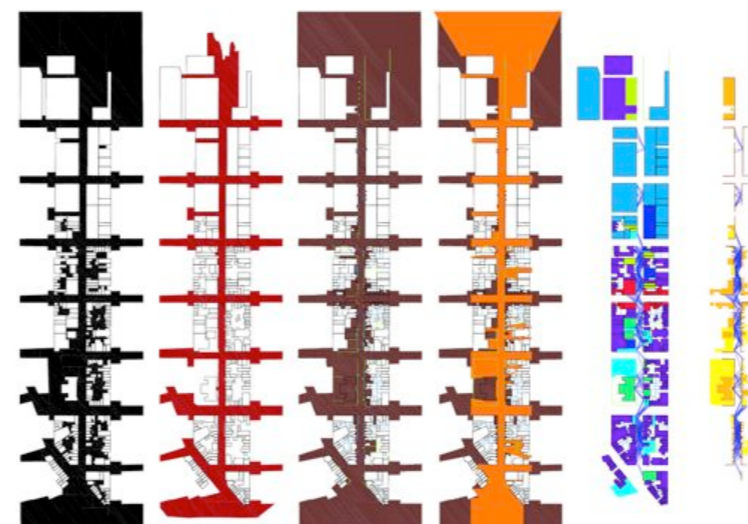


As a consequence, we can question the forced relationship between collective structures and the intermediate size: the collective structure of a project is necessary present, from the domestic till the urban scale, to guarantee urban coherence and to stimulate a healthy balance in individual/collective space production. Collective strategies should be defined at all scales, not only at the intermediate scale, and should accompany a rethinking of public/private distinctions. 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.



The study of theoretical and built streetscapes allows the formula of the **horizontal interface** as the **sum total of collective spaces**, as 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.

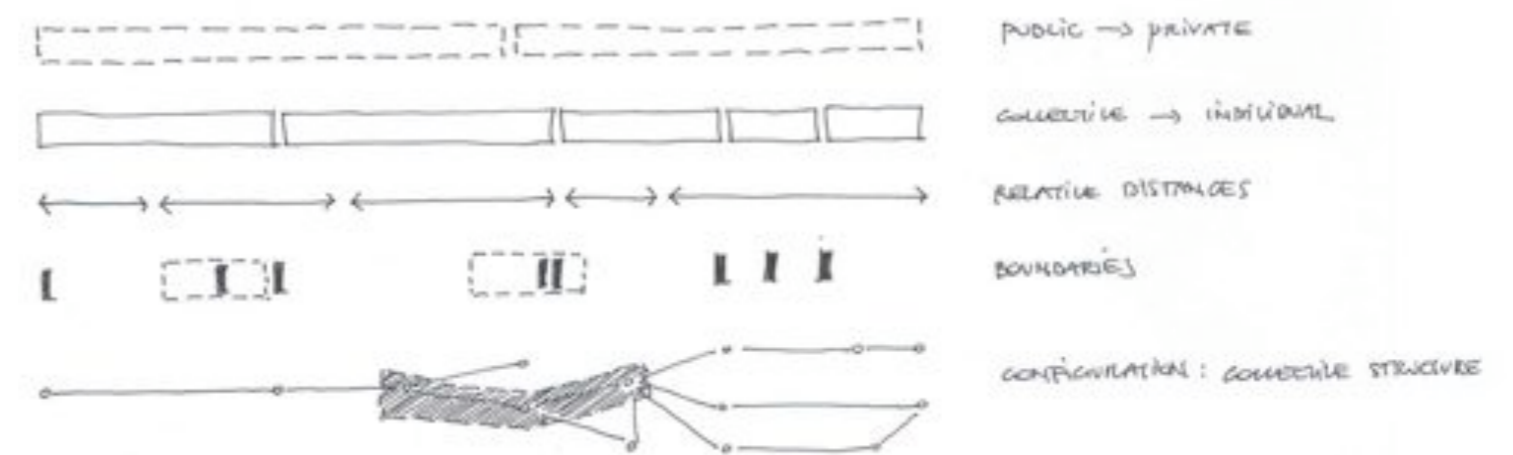
The study of depth configurations at domestic scale, as well as at urban scale, illustrates the **matrix-like coherence between proximity as a set of relative distances, permeability as a territorial access configuration, the nature of boundary definition, depth configurations and its visual control.**



vi. Depth configurations

The concept of depth configurations in urban projects can be used to describe, frame and explain historical and recent phenomena in the field of urban projects, next to the use of more traditional parameters. During the recent history of urban projects, there has been an increasing importance of depth as an implicit or explicit design parameter, independently of the used scale.

Besides hierarchical approaches to depth that emphasise permeability and proximity, non-hierarchical concepts of depth configurations allow framing a conceptual approach that combines this with integration values and relational understanding of urban projects, based on the idea of a horizontal interface of collective spaces. Depth configurations are not based on the traditional private/public distinction but depend on the amount, the nature and the structural qualities of collective space, together with several spacing mechanisms.



The concept of depth configurations does not define a simple morphological discourse about linear quantitative sequences of crossing boundaries: the designing or reading of depth is placed within a more complex configuration of proximity, permeability, integration values and delimiting boundaries on a physical, visual and territorial level. The way and intensity of sharing space is determining for depth value.

Kris Scheerlinck, doctoral candidate, Barcelona, 2009

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