Essay on urban design and involvement

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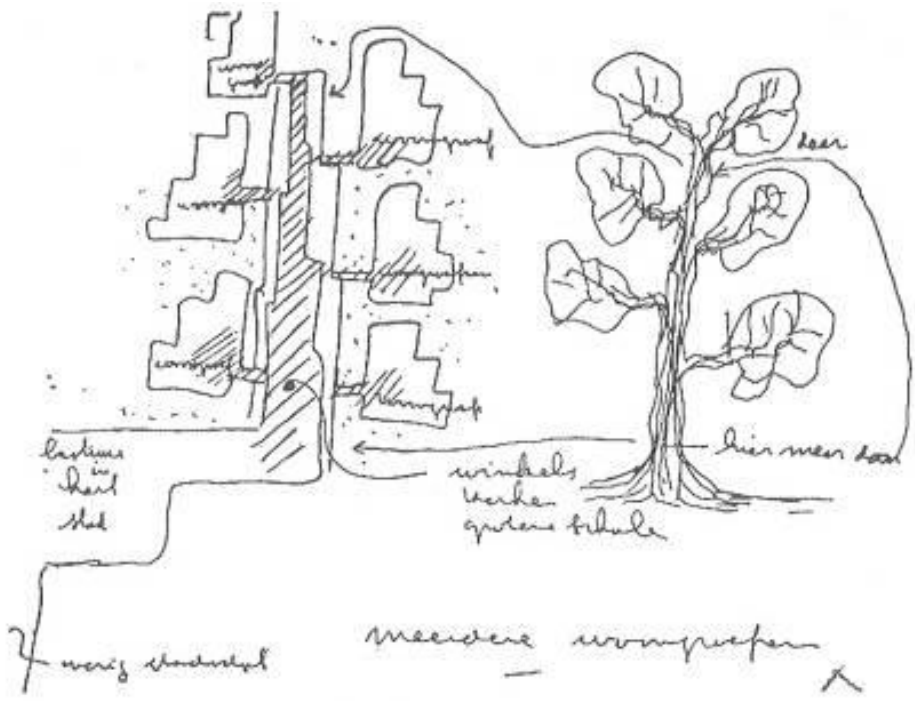
See also: https://www.linkedin.com/profile/view?id=AAIAAAOuMcYB_aBvca2PpUnGG3G1yFxDfL0-J-I&trk=nav_responsive_tab_profile

1 The city as a tree

Why not drop students, who start their study urban planning, in a new neighbourhood. Without telephone or GPS. Ask them to return on their own to the faculty. Guarantee that they will get lost. Their first educational experience.
In this series of 9 episodes, I will work towards a number of recommendations that may be of importance for the involvement of residents in their city.

The city as a tree
For our involvement in the city it is essential that we can experience the place where we are in a larger context. Our house in the context of the street. Our street in the context of the neighbourhood. Taking this concept as a starting point, we can understand the need for a series of scale levels, which together form a tree structure. This structure has a spatial and a social meaning. It can help you to know 'where' you are as well as 'who' you are. Below a sketch of Jaap Bakema, from the fifties, in which he demonstrated that his plan for 'Alexanderpolder' (Rotterdam) was based on a tree structure.



Sketch of Jaap Bakema that shows that the plan for the Alexanderpolder (Rotterdam) was based on a tree structure.

Also in the plan of De Boer and De Jong for 'Emmerhout (Emmen), from the sixties, we can easily distinguish a tree in the structure of the access roads. (next page)

Plan Emmerhout (Emmen) by De Boer and De Jong, from the sixties.

In red we see in the 'trunk' of the tree, split into two lanes, along with the facilities for the district. In the lower, southern part of the plan, we see how 'branches' give access to the neighbourhoods. These roads branch out in ‘twigs’, the residential areas, to which the individual houses are connected like ‘leaves’.

Central and peripheral access

Car traffic on the 'branches' will not be very intensive and dangerous, but may-be the urban planners De Boer and De Jong disagreed here. That would explain why the northern part of the district has a 'peripheral' access for cars. Now the tree-shaped 'central' access is car free and safe for pedestrians and cyclists on their way between the house and the local facilities. (connections not shown)
On the right we can recognize another ‘peripheral’ access, this time for the district as a whole, shown in blue again, while the 'central' access, the trunk, connects the district with the centre of Emmen, when we follow the ‘trunk’ to the left.

It could be better

This is how it could be done: a central access that follows the sequence of scale levels, and if necessary a peripheral access for security. If we follow this concept, and we look again at Emmerhout we realize that some things can be improved. Below a picture of one of the ‘branches’ that is missing its meaningful scale level. The grass, bushes and trees may serve as a context for the home zones, but only in a spatial way. What we miss here is a social life that can serve as a context for the social life on the lower level of the home zones. (See picture next page)

One of the 'branches'. Just grass, bushes and trees: an empty context for the social life of the lower level of the home zones.

And if we look at the ‘twigs’, the home zones, we can ask ourselves again if this level can serve as a context for the lower level, the individual houses, as most of the houses turn their back at the home zone.

A home zone, the’ twig’ that can provide a context for the houses. But here most of the houses turn their back at the home zone.

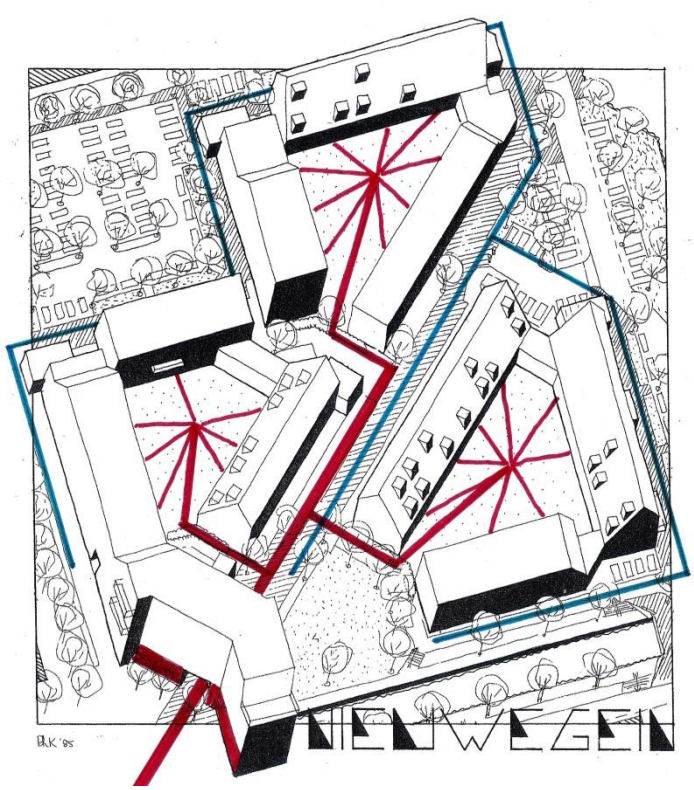
What next?

In the next episode we will see an example of a sequences of meaningful scale levels, and we will look again at the 'central' and the 'peripheral' access.

2 Central and peripheral access

In the previous episode, we have seen the district Emmerhout in Emmen, where a tree-shaped access structure was complemented with a peripheral access when the central access is burdened too much by automobile traffic.
We also have seen that the access itself is not yet a scale level that can serve as a context for the lower levels. We look for better examples.

Co-housing in Nieuwegein
In the late seventies, I was invited to design a co-housing project in Nieuwegein. A project for about 250 residents who wanted to live in groups. This resulted in the design below.



Cohousing project in Nieuwegein, a city in miniature with four scale levels: household, group, court and project

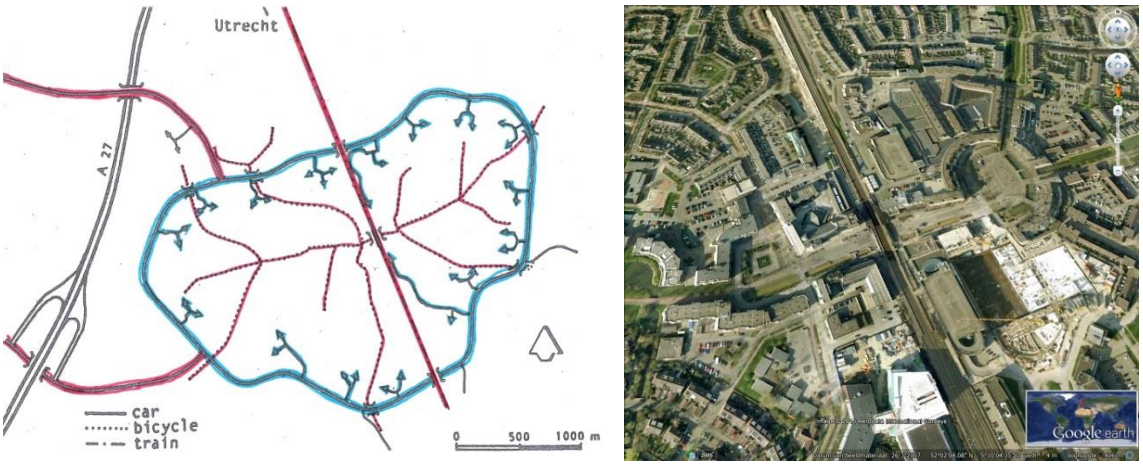
This project is a small city in its own right, with different scale levels. Households build up to groups, with a common kitchen and a living room. The groups are situated around the three 'courts' with a lawn and playing facilities for children. The courts are part of the project as a whole, with facilities like a meeting area, a nursery and a playing field, bottom left, indicated in red. From here it is a few steps to the neighbourhood facilities, bottom left, just out of the picture, including a supermarket, a community centre and a snack bar. Four, and if we include the local services, five consecutive scales, levels, so we can speak of a tree structure. This tree structure is supported by a ‘central access’ for pedestrians, indicated in red. Unlike Emmerhout (see Part 1) the different scale levels all have a spatial and a social meaning.

A 'court' in Nieuwegein, a fully fledged link in the sequence of scale levels, with a spatial and a social meaning

Finally, we see, as shown in Emmerhout, a ‘peripheral’ access, in blue, that makes all homes and groups accessible for motor vehicles.

Peripheral road and home zones

In the practice of urban planning we often see a combination of a peripheral and a central access. Like in Houten (near Utrecht) where we can see a peripheral road, and a tree shaped central access that connects the home zones with the centre, a train station and a central square.



A peripheral road for the car and a central access between the home zones and the centre

On the sketch we may recognize a central access, but on the areal we cannot find it. A problem, not only for residents that cannot situate their own place in a sequence of scale levels, but also for visitors and outsiders. To get from the station to a specific house, they have to find their way through a maze of home zones. Without recognizing clear visible parts in the context of the whole, that serve as context for smaller recognizable parts, etc. until they reach their destination.

How do we recognize the central access that connects the home zones to the centre?

On top of that the peripheral road seems to exist on its own. Apart from the central access (i fit really exists) and also apart from the surrounding landscape, while a context is essential for the significance of any access. Now Houten hovers over the landscape like a balloon on, in this case, two strings.

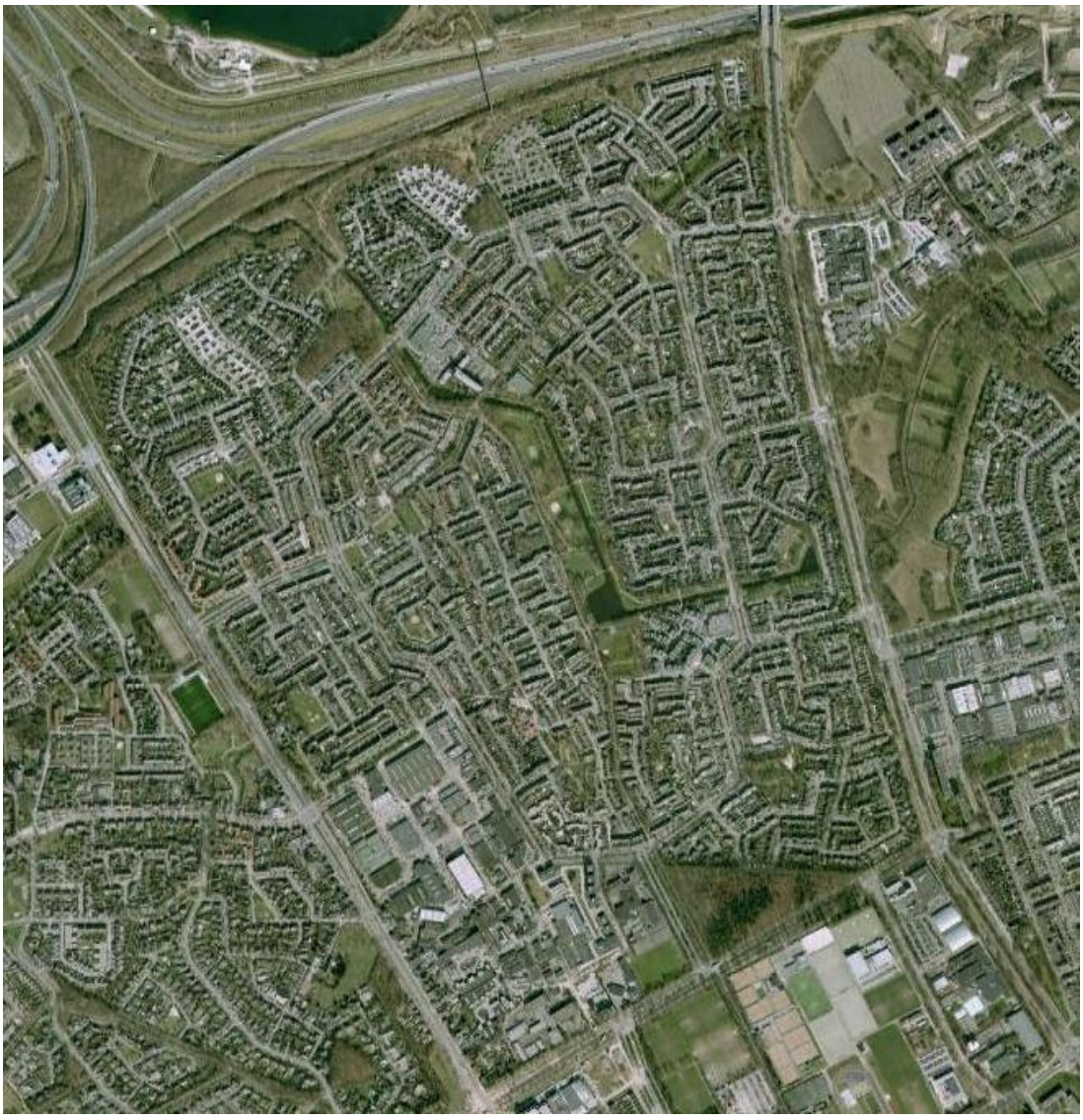
Context or GPS?

And Houten is not the only example. Urban planners have produced similar situations in numerous new built areas and frustrated the involvement in the built environment. It is the GPS that saves these planners, and us, and not to forget the emergency services... Can't we do better here? Don't we just want to know where we are?

3 Never ending home zones

In the previous episode we have seen that many new neighbourhoods often look like labyrinths of home zones. These neighbourhoods are not exactly examples of a sequence of scale levels that enables residents as well as visitors and outsiders to get involved in these neighbourhoods.

It is even worse
To solve this problem urban planners tried structure these neighbourhoods, without rejecting the concept of the home zone, by introducing the internal ring road. Like in the 'Eighth Barrier' in Eindhoven. See below.



The intern ring road, an attempt to structure the labyrinth of home zones. A failed attempt

But alas, no road is more disorienting than a ring road that looks the same at any point. And it gets even worse when this ring road transforms into an exit without warning.

The internal ring road as it looks at any point

Coming from below, with the perception of a 'ring road' in mind, we will probably turn right at the intersection. But this is an exit that leads to the urban grid.

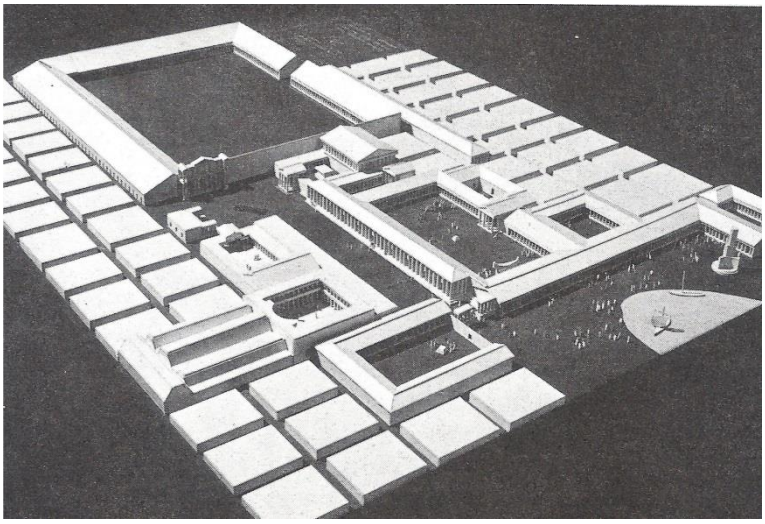
When we assume that urban planning is a serious profession, we may be surprised about the fact that designing a clear structure of new built housing areas has become such a problem. A problem that undermines the involvement. Another thing to be surprised about is the fact that urban planners never did investigate this problem.

But now something completely different, the grid

Planners simply abandoned the concept, home zone districts were called 'cauliflower neighbourhoods' and declared obsolete. Since the eighties, urban planners embraced the rectangular grid. The fact that home zones were an important development that had made streets habitable again, despite the presence of the car, that was forgotten.

Miletus

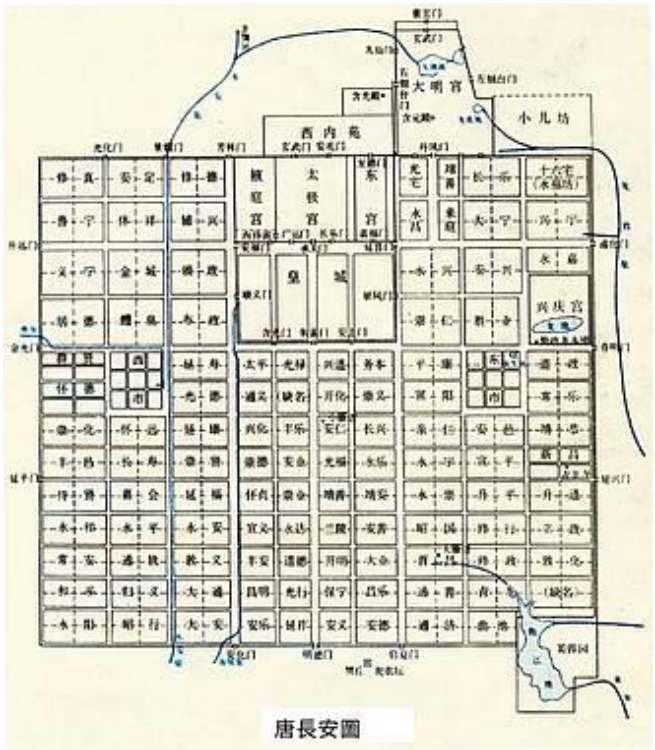
The rectangular grid has a long history, and that can give us some confidence in its usefulness. It was already used by the Greeks in Miletus, that was founded in the 4th century BC. By leaving out buildings, parts of the grid could be used as parks or squares, and by joining parts, space could be created for large buildings.



Miletus, in the 2nd century AD. (Maquette)

Xi'an

This city, known for the excavated terracotta army, was founded three millennia ago and in 200 AD. It was the largest city in the world with 1 million inhabitants, bigger than Rome at the time. Xi'an was designed as the capital of China and the urban grid was an example for large cities in the whole of Asia.

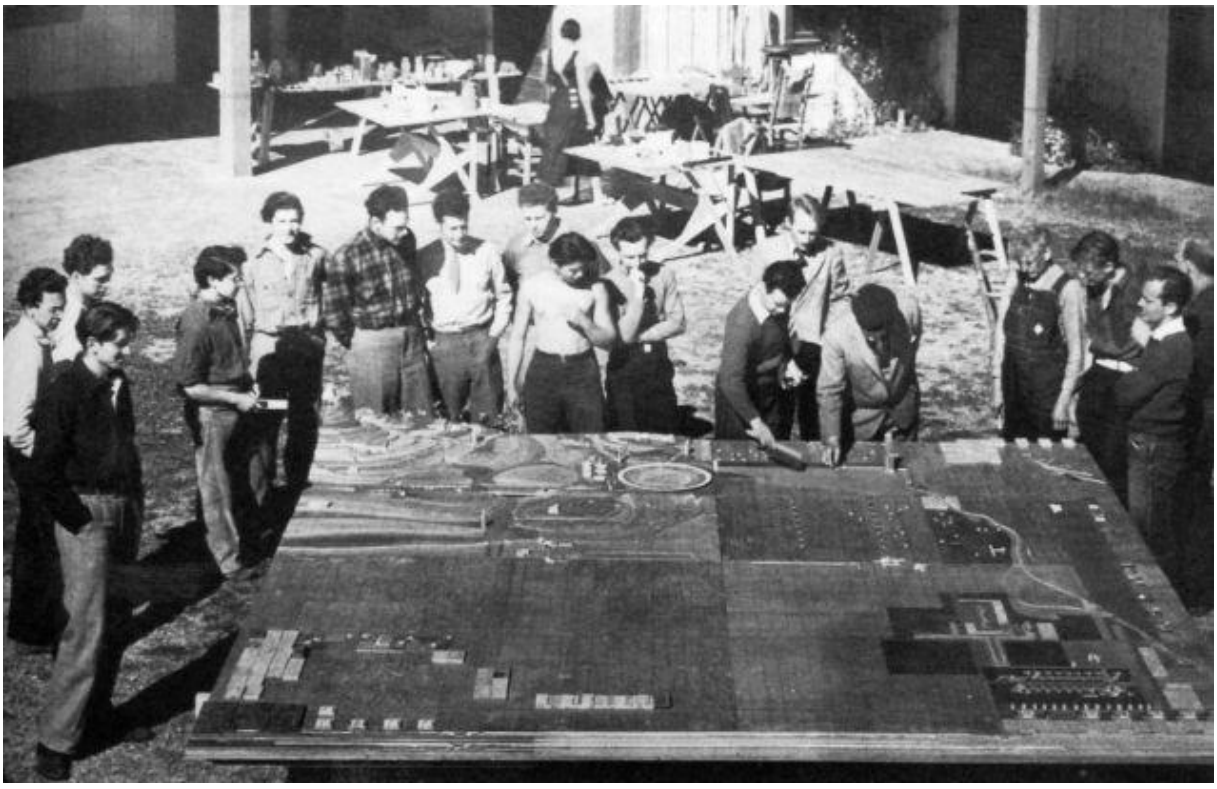


The plan of Xi'an during the Tang Dynasty (618-907)

Romans in Xanten
Roman cities are not known for a claer lay out, but for their army camps the Romans used a simple grid. This can still be seen in cities that are based on such a camp, like Colonia Ulpia Traiana, near Xanten, Germany. Here again, we can see the great organizing ability of the grid.

The Roman city of Colonia Ulpia Traiana in the second century AD. (Germany)

Is it the grid we are looking for?
Can the grid structure a city, in a way that we can get involved in the situation, without loosing our orientation and our grip on the situation? In the next episode we will look at the design of a city, that is based on a grid, that stretches over the entire territory of the United States.

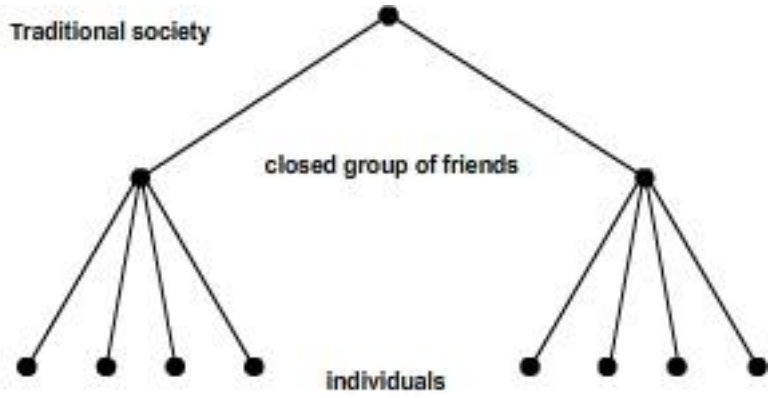


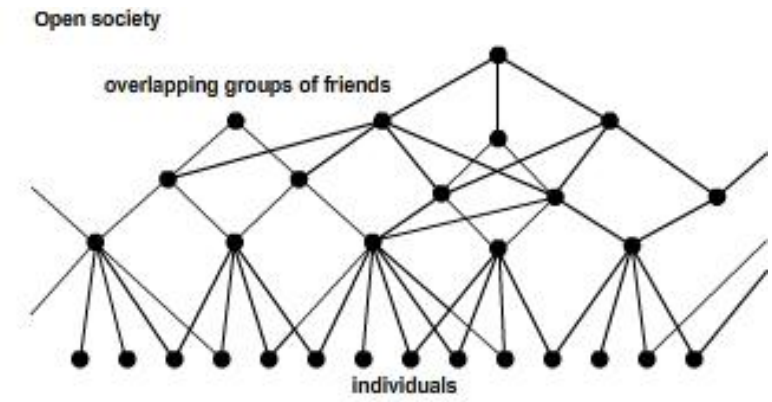
A small part of the proposed, endless grid.

5 The town: a tree and yet not a tree

The grid means freedom, it unlocks the outside world, while in a tree we know where we are and with whom. Both concepts have their own strengths. Couldn't we combine both?

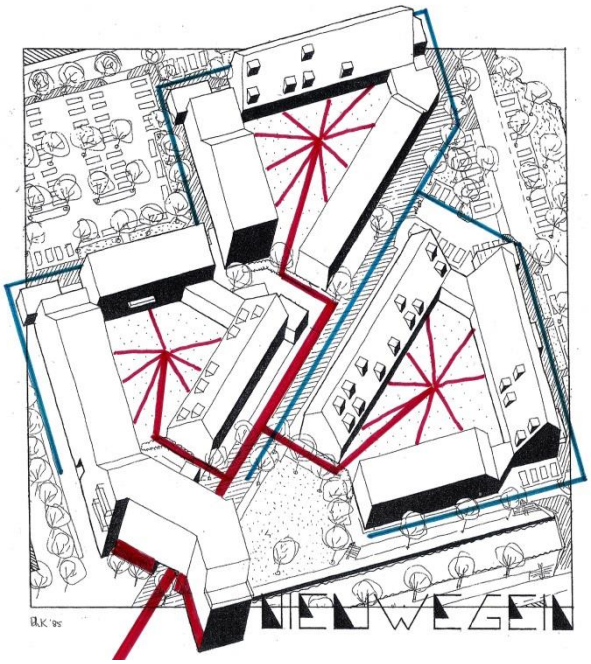
A city is not a tree
With this statement Christopher Alexander meant that the tree structure is too restrictive. In modern times we want to focus also on the outside world.





He did not suggest to leave the concept of the tree, he proposed to add lateral, horizontal linkages. As shown in the bottom image. He called this new structure a 'semi-grid'. As an example he used groups of friends that can overlap through lateral connections. Applied to an urban grid this means that residents have access, not only to their own residential area, but also to the outside world, to areas where other residents live.

Nieuwegein revisited
Previously I used the co-housing project in Nieuwegein to illustrate the distinction between central and peripheral access. The peripheral access, shown in blue, was added to keep the car out of the central access, shown in red. With the grid in mind, we can see that the peripheral access has yet another meaning: it connects the residents directly with the outside world.

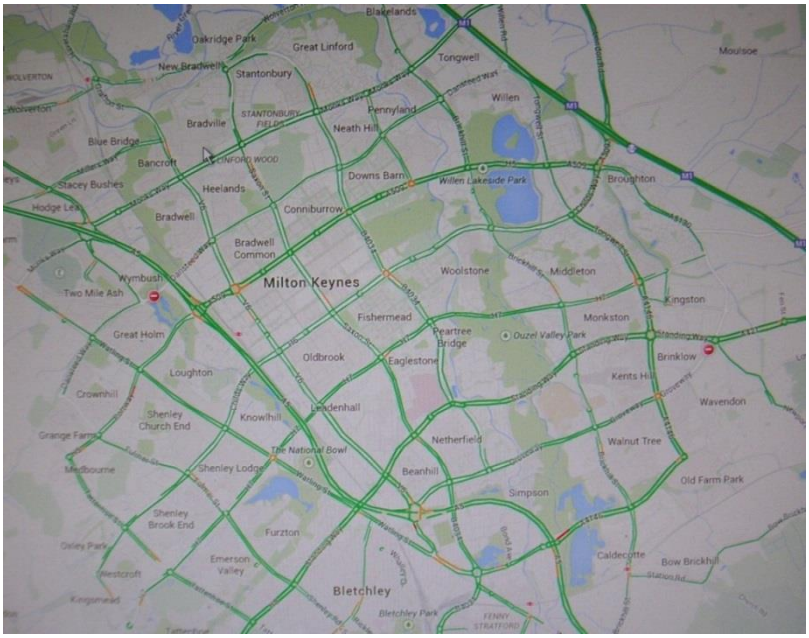


Central access (in red) and peripheral access (in blue)

In a sequence of scale levels, every level that we get involved in, will have a higher level as a context. To combine this sequence with a semi-grid we may combine the tree of the central access with a peripheral grid. We investigate an example.

Milton Keynes

An English *new town* that was designed in the sixties by Derek Walker, who was inspired by the US grid concept. By this time also home zones were getting important. We find both concepts in the lay-out of Milton Keynes. There is a grid of about 1 x 1 km (not miles!) and the ca 100 sub plans within the grid are designed as home zones. For the city as a whole there is a shopping and business center. The grid is laid out on a raised embankment, so that pedestrians and cyclists can use tunnels to go safely to neighbouring home zones and to the city centre.



The grid of 1 x 1 km and the sub plans for the home zones

The grid can be seen as a peripheral access that keeps the car largely out of the home zones in the sub plans, and it connects these home zones with the outside world. Because of the neutral character of the grid we cannot see where the shopping and business centre is located. (Namely, under the name 'Milton Keynes' on the above map) In addition to this, the city centre and the city as a whole are obscured by the foliage of the trees, planted on the slopes of the grid.

Where are we here?

The peripheral grid seems to float in the air, with no visible connections with any context. And can we recognize a sequence of scale levels and a clear central access, to facilitate the involvement of residents, visitors and outsiders? Let us look at the map of the cycle paths on the illustration below.

Cycle paths

This map makes it clear: there is by far no clear central access that follows a sequence of scale levels. We can rather fear for an never ending labyrinth of home zones.

And indeed

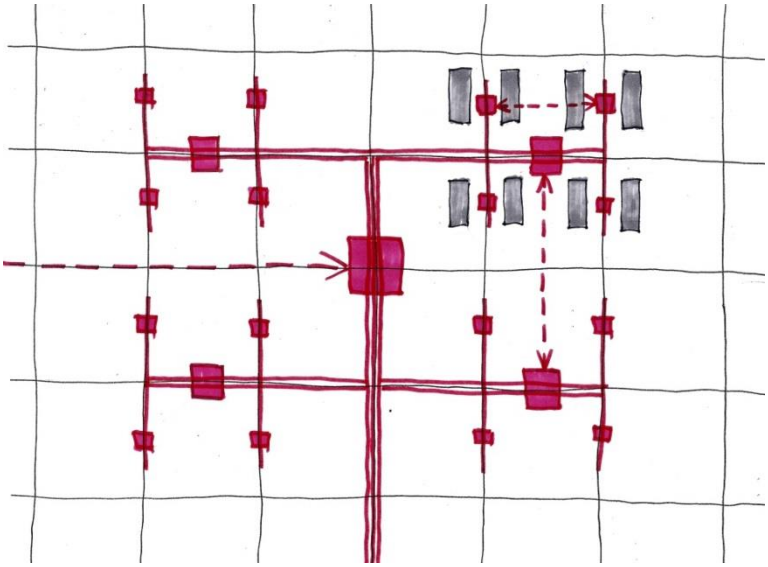
Even with an internal ring road like a rollercoaster for desorientation and loss of context

Still the semi-grid seems to be a perfect way to combine involvement in our own environment, with openness to the outside world. So the question remains: how can we design such a half-grid? With a peripheral access is that doesn't seem to be floating in the landscape, or literally is lifted into the air, but connected to a central access, that follows a sequence of different scales levels.

6 Eureka!... but wait

In this episode we explore further how a semi-grid might look like. How we can combine the central access with a peripheral grid.

Central access in the grid
The Milton Keynes grid could serve as a peripheral access if we (sorry) cut enough of the trees, for the visual contact with the city, the context. For a semi-grid we then must add a central access. In Houten that would be easy, but here it will be different because the tree structure of this access will cut through the grid in many places. Maybe we can profit from the elevated grid, but then: how can we make a clear connection between the peripheral and the central access? And how can we transform the square shaped isolated sub plans into a clear sequence of scale levels? If the grid is as adaptable as proponents claim, we may realize the connection of the grid and the tree in a different way, by integrating the tree in the grid. This may look like this:



The tree of the central access integrated in the grid

The (red) squares indicate the facilities that can give the different scale levels a spatial and a social meaning. The smallest squares represents the home zone, the medium sized squares could be a playground with a climbing frame, slide and bridge, and maybe a barbecue table. The central square might be a local park with a container for the lending of toys and a half pipe for skating.

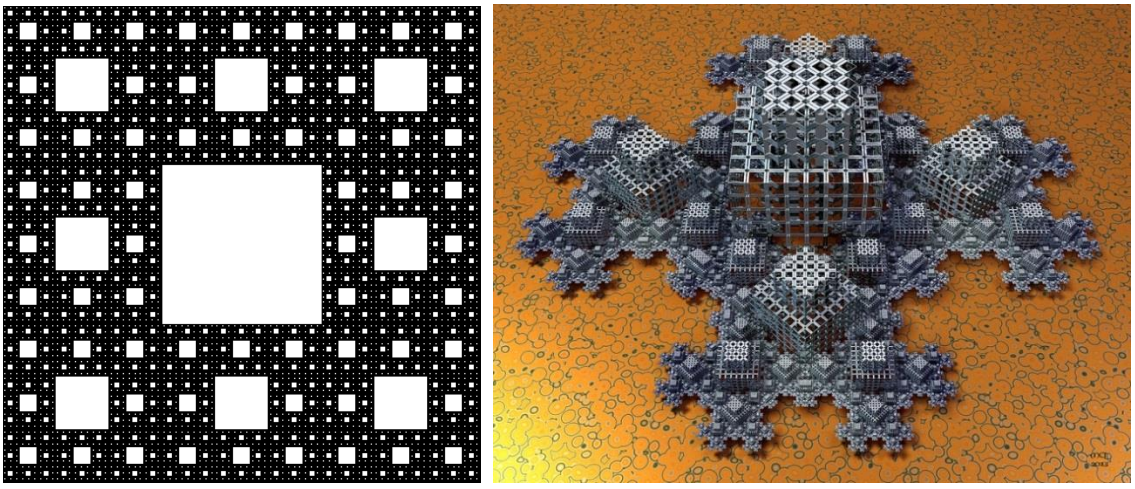
Interconnecting doors
Before we look at the possibilities of the peripheral access we may notice that the subscribed central access already provides opportunities for lateral connections with the outside world. These are indicated by the dotted lines that connect levels of the same scale, like ‘interconnecting doors'. For a practical example, see the illustrations below. (next page)

Example from the 'Tanthof' in Delf. Home zones' A', 'B' and 'C' are connected by a branch of the central access, a street ('Straat') and connected by 'interconnecting doors' marked with a 't'.


The home zone 'A' with in the background an 'interconnecting door'

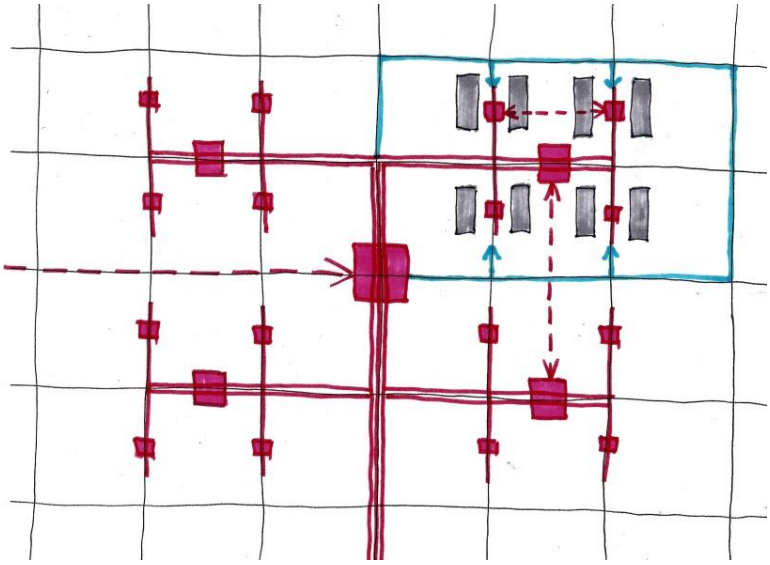
Fractals

If we think of tree structures as fractals, we may notice that the above structure is very similar to the 'Menger Sponge'. This Menger sponge is perhaps a poor example, but we can also find examples that are more inspiring, like the fractal 'city plan' by Manny Lorenzo. But this aside.


Left: the Menger sponge, right: Fractal 'city plan' by Manny Lorenzo

Peripheral access in the grid

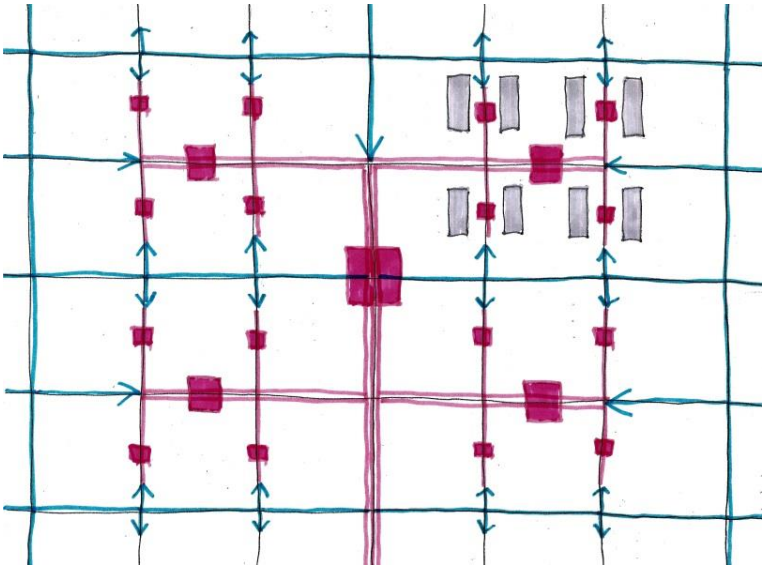
If we insert a peripheral access in the grid, we can start with a ‘detour’ that diverts cars from the smaller branches, the single and double lines, the access to the houses and home zones. See the blue circuit in the illustration below.



Detour around one quadrant

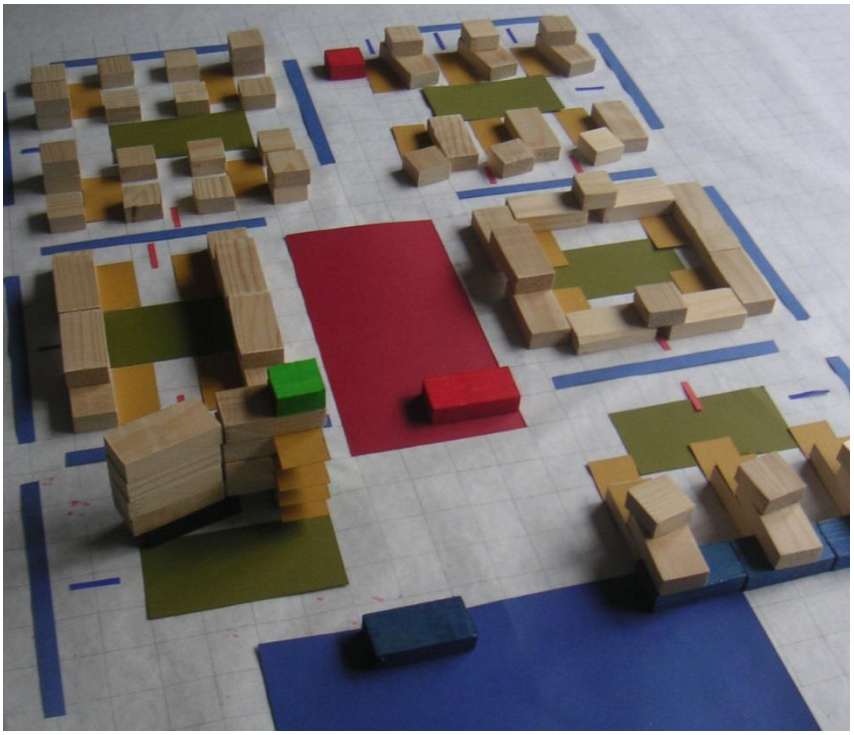
As a lateral connection this little detour only connects the back doors of neighbouring houses or home zones. When we also provide the other quadrants of the tree with such a peripheral access we can also unlock the central access where is has triple lines, see illustration below. Now we have a peripheral network that connects all levels of the central access with the outside world, as far the grid reaches!

Now we have found a semi-grid, with a central access that can, hand in hand with the sequence of scale levels, help residents to get involved in their own environment, and a peripheral access that connects these residents with the outside world.



All levels are now provided with a peripheral access that now extends over the entire grid

Eureka… but wait!
Eureka, this is the discovery of a semi-grid! Good to know when we are planning new sections of the city. The illustration below: urban study with tree structure (going from yellow, via green and red to blue). The blue strips represent the peripheral access, the little red strips indicate the 'interconnecting doors'.



Tree-structure with peripheral access reaching from the outside (the blue strips) and interconnecting doors (small red strips)

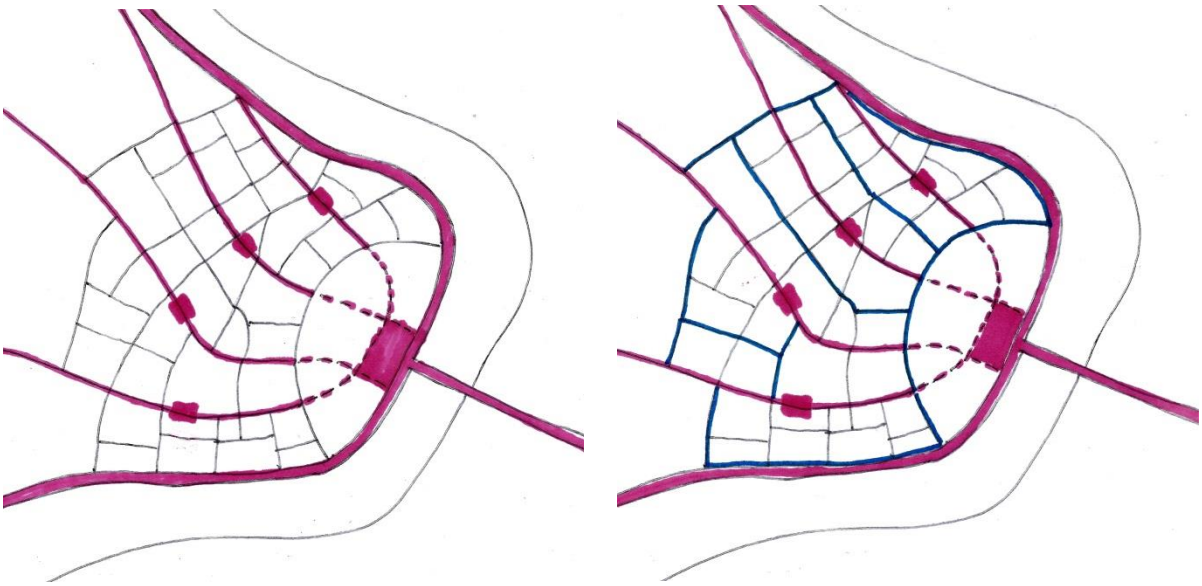
But wait… what if we have to deal with existing situations. Can an urban network that has grown over a period of centuries be re-interpreted as a semi-grid with a central and a peripheral access? We look at that in the next episode.

7 Semi-grid in urban network

The grid can absorb a central and a peripheral access, and form a semi-grid. How about other networks, for example the road network of an existing city?

Central and peripheral access

Let us look at a fictional town that is situated on a road along a river, a road that we can interpret as the 'trunk' of the central access. Shown in red in the illustration below. From the main square (the rectangular square opposite the bridge), four (radial) main streets, also in red, give access to the four quarters. These 'branches' are provided with facilities for the quarters, schematically indicated with red squares, that can give these quarters a spatial and social meaning. In the illustration on the right, a part of the road network is interpreted as peripheral access to the quarters, shown in blue. The old centre is provided with a (tangential) peripheral access, also shown in blue. Now we can recognize the outlines of a semi-grid in an arbitrary road network.



Left: the central access, right: the added peripheral access.

Now the 'trunk' of the tree-shaped central access, the road along the river, is connected to the ends of two 'branches', the two main streets in the north. This is a consequence of the fact that we

interpret a given situation as a ‘trunk’ and ‘branches’ of a central access. Another consequence is that the northern and southern quarter may need an extra service road for a peripheral access, parallel to the ‘trunk’. Also here it is clear that the reinterpretation of an existing road network does not automatically lead to clear solutions.

Main provisions for the quarter

Neighbourhoods

In the illustrations below a number of building blocks are inserted that form small neighbourhoods within the peripheral access of the northern and southern quarter. On the right illustration, the central access is added, together with facilities for these neighbourhoods: home zones with playgrounds for children, benches for parents and elderly people and green areas. In the southern quarter most of the blocks face these facilities only on one side. The other sides of the blocks are facing a peripheral access, which means there is a certain inequality in the orientation of the individual houses. Also a consequence of the fact that it is an existing situation that is re-interpreted here.

Residential blocks accessed on one side (south) or from the inner courts (north)

On the right illustration is shown how the central access to the housing blocks in the north, extends into the common inner courtyards of the blocks. Now the individual houses are oriented in a more equal way to the access and the facilities that go with it. Another advantage of this solution is that

the access and the facilities that go with it are spatially more recognizable than when they are situated in a space between the blocks. Now inner courtyards are not always common, but by merging (parts of) the individual backyards they can be formed.
In this situation, the peripheral access cannot provide lateral connections between the courtyards, but here 'interconnecting doors' can be used. (See the red dotted lines between the courtyards of the northern blocks.)

Access by a common inner courtyard

We might also think of ‘interconnecting doors’ between the main streets, but here they seem redundant because here the peripheral accesses can be used as lateral connections.

Old situation, new design solution
The ends of ‘branches’ that connect with the ‘trunk’, the need for extra service roads, unequal orientation of houses on the central access and the facilities that go with it: we see here that an existing network of roads, with buildings and facilities that have emerged in the course of time, is not always easy to interpret as a semi-grid that gives access to sequence of scale levels. But the very history can turn the re-interpretation into a challenging design task in which old situations can provoke new design solutions.

8 There is always more to it

A tree shaped central access and peripheral access can form a semi-grid. In combination with a sequence of scale levels this can lead to an urban design that invites residents to be involved in their own situation and at the same time to be open to the outside world.

Spatial and social meaning
By mentioning the sequence of scale levels I stated that involvement has a spatial and a social meaning. Usually both dimensions remain underexposed. No surprise when we realize that most of us don't live in a clear sequence of scale levels. Then we have demanding jobs, there is little to do outside and cars dominate the streets. On top of that our society is telling us that we are 'on our own'.

Neighbourhood party

Leaving our mark
To avoid living in a void we not only need a sequence of scale levels, it is also important that we can leave our mark on here, in such a way that this sequence reflects our specific needs and wishes. That is the beginning of the feeling of being at home; of being involved in the built environment and each other. This will also result in an identity that makes the different levels recognizable.

Small scale meeting spaces with a view
For our involvement to others it is essential that we make contact. How do we approach people we don't know, especially at the higher scale levels. Who do you speak to and about what? Let's look at a bus stop. A small space with no more than 5 to 10 persons waiting. The question 'Whom shall I speak to' can be answered here quite easily. And about what, that too is obvious here: the timetable or the weather. So what we need for this kind of 'casual contacts' on the higher scale levels, are public spaces with the scale of a private room and something that can lead to a conversation, like a special view.

Parade
We can distinguish three versions of ‘casual contact’ with people we don’t know. The first one we find when we are parading. The terraces along the route are the small scale meeting spaces and the view on passers-by can serve as the start of a conversation. This kind of contact has a rather formal character, in some countries people especially dress for it.

Parading in the palace garden, with a small scale meeting space with a view

Corridors
Then there are contacts in the 'corridors'. Contacts are informal here. And critical. People comment from the side-line here, on what is going on in society, and also consider alternatives. This is the ‘bottom-up area’ the counterpart of the ‘top-down’ world of the parade. More contemporary forms of corridors we see the margin areas in urban fringe areas, in the world of alternative businesses and start-ups.

A stoa, the famous corridor of the antique world

Outsiders
The confrontation between top-down and bottom-up could lead to friction ... but thanks to the peripheral accesses and the ‘interconnecting doors’ outsiders can appear, and their uninhibited comments can provide new points of view. Lubricating oil!

Lubricating oil?

Threshold Areas

Americans are familiar with the so-called 'porch life'. Sitting on the 'porch' or the 'veranda', residents can have a chat with villagers who pass by. The porch is a threshold area which can foster contact between the social level of the home and the village. A threshold area can also exist at higher levels: at the entrance of a street or a neighbourhood. From a porch or threshold area one can have a view on the higher scale level, whilst from the higher level one can oversee the different thresholds that represent the lower levels.

'Porche life' in a Belgian cowboy village

Work

Life in a street, a neighbourhood or a city also demands cleaning, maintenance, repair and renewal. These activities are often organized at a municipal level. The means that enable these activities, the workshops, warehouses and machinery, are usually hidden. Bringing back the work and the means to the scale levels where they are needed may encourage further involvement at these levels, on a spatial and a social level. The work at the various levels of the sequence can also be expanded. Nowadays it might be interesting to look at decentralized energy generation and wastewater treatment, or urban agriculture (transition towns).

9 16 Essentials for urban designers

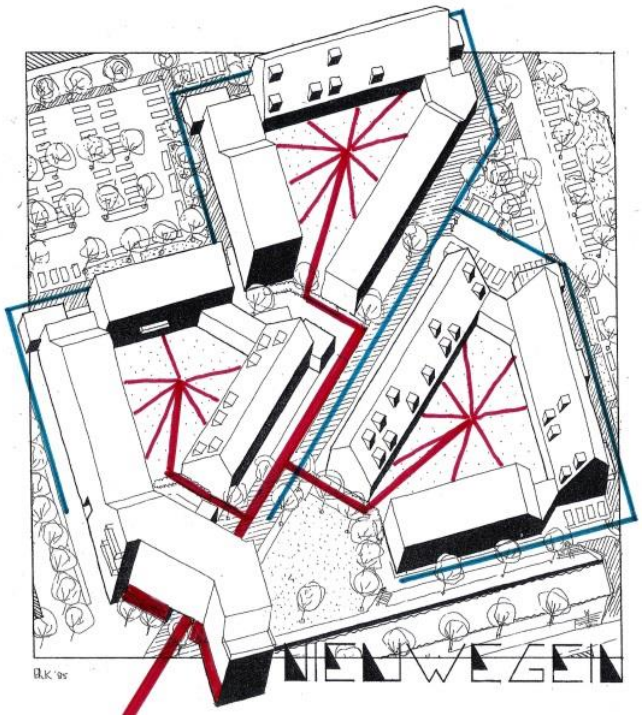
This last episode contains a number of recommendations arising from the previous episodes.

1) Tree structure for residents
For the involvement in the built environment it is important that residents can recognize their house in a context that is again recognizable in a larger context, that is again recognizable in yet a larger context ... in other words a tree-structure in which each level is recognizable in the context of a higher level.

2) Tree structure for visitors and outsiders
This tree-structure is also important for the involvement of visitors and outsiders because they can recognize lower levels in any level of the sequence, which provides grip on their way to a specific place.

3) Leaving a mark and the context
For the involvement it is also important that residents can leave their mark on the different levels of the tree. This promotes the feeling of being ‘at home', and it makes the scale-levels are more recognizable in their context.

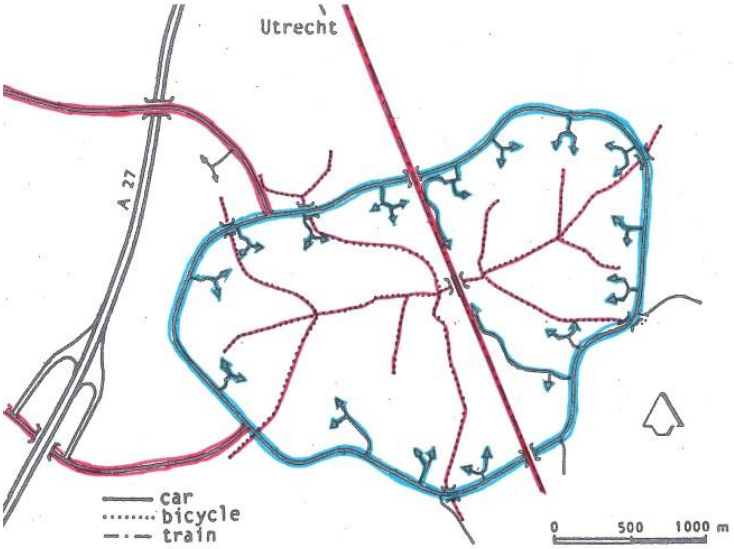
4) Central access
The sequence of scale levels can go together with a ‘central access' that connects the levels and clarifies the sequence. Make sure that the structure of the central access goes hand in hand with scale levels that have an identity of their own.



Central access (red) and peripheral access (blue)

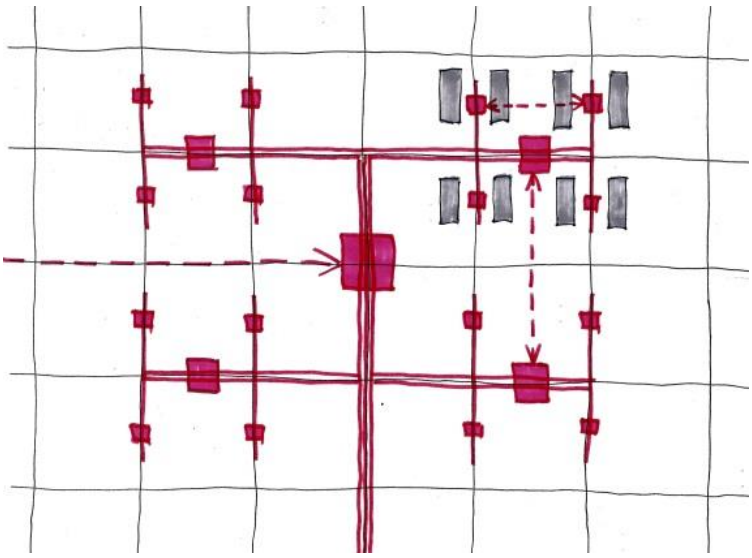
5) Peripheral access
To promote the openness to the outside world, the tree-structure of the ‘central access’ can be complimented with a ‘peripheral access’. Such access could also ensure that motorized traffic is lead to the lowest levels from the 'outside'.

6) Context for the peripheral access
To avoid being lost on the peripheral access because it is ‘floating in the air', it is advisable to connect the peripheral access with a context, that is to say with the central access.



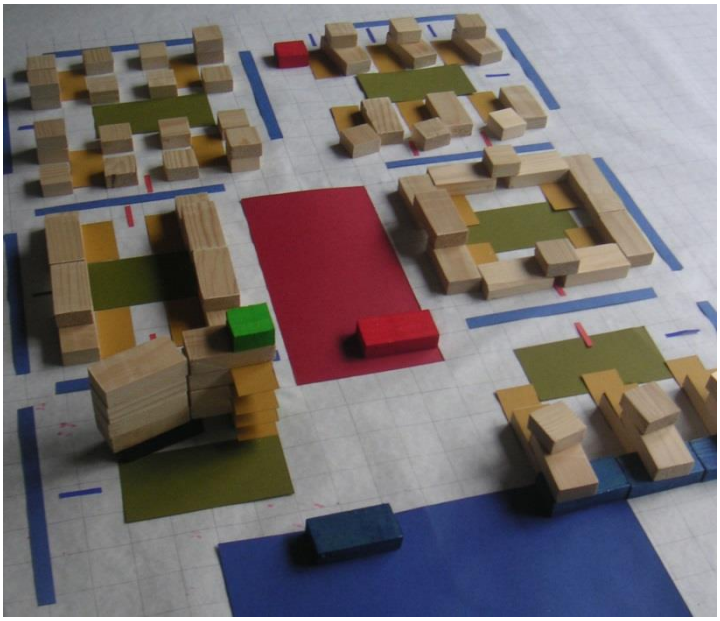
No more of this… please

7) Interconnecting doors
For contacts with the outside world that is nearby we may also use 'interconnecting doors': direct connections between levels of the same scale.



Central tree access (red) with interconnecting doors (red dotted lines)

8) Grid
A grid structure can be used for both: a central, tree-like structure, with interconnecting doors, and peripheral access.



Urban design study with tree-like structure, interconnecting doors and peripheral access

9) Existing road network
Reinterpretation of an existing road network and existing housing estates may cause problems. Take these problems as a challenging design task that can lead to new solutions.

10) Spatial and social involvement
Involvement has a spatial and a social dimension. This means that all scale levels are also important as a social context.

11) Small urban spaces with a view
In order to facilitate contacts at the higher scale levels we can apply small urban spaces, with a view on something that can lead to a conversation.

Small urban spaces with a view

12) Parade
There are three kinds of these 'casual contacts'. The formal version we find in the representative parts of the built environment. For this we can provide special areas for parading.

13) Corridors
The informal version we find in the margin areas of the built environment, where alternative businesses and start-ups have settled. This is the ‘bottom up’ area, the counterpart of the ‘top down’ world where we find the parading.

14) Outsiders
Between the spheres of 'bottom-up' and 'top-down' we can expect frictions. Here contacts with outsiders may be bring light. Their uninhibited comments may serve as a lubricating oil here.

Lubricating oil?

15) Threshold areas
A scale level may be provided with a threshold area where it touches a higher scale level; a ‘porch’ which offers a view on this higher level. Then one can also have a view from the higher scale level on all the these threshold areas that belong to the lower scale levels. This may support the coherence of the tree structure that is formed by the series of scale levels.

16) Work
On any scale level there is work that comes along with it, like maintenance work. We can decentralize and show the facilities that are needed for this work, like workshops and sheds. And we can add new decentralized facilities (for renewable energy or urban agriculture). This may be an invitation for involvement in the physical and social side of the built environment.

Urban agriculture

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