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A socially mixed, neighbourly living together in a sustainable district close to nature - that is the aim of this urban design. The project is a response to the current change of the nowadays housing structures and shows possibilities of community without neglecting privacy. It is based on the idea of living in harmony with nature and draws attention to an ecologically sustainable way of living.

The project deals with the tension between individuality and density: The typical single-family house ideally enables the implementation of individual living needs and fulfills the wish of self-realization. The detached house with its own garden gives spaciousness and means a sensible investment.

The fundamental criticism of the family house is based on the urban sprawl to which the accumulation of those leads.



# GREEN CLUSTERS

A SUSTAINABLE DISTRICT  
CLOSE TO NATURE

# 1 URBAN CONCEPT



vodní nádrž České údolí close to Pilsen

On the outskirts of Plzeň, the „Nová Valcha“ development area is currently under construction. The area is surrounded by a large forest and is within walking distance of a large reservoir

The developers of the new development advertise that the residential complex brings a brand new and affordable living concept to the Pilsen region with a high standard that offers modern living in a quiet outskirts of the city for those who want active relaxation and close contact with nature.

One thing that stands out in the plans for the new buildings in the area is that there are fences everywhere. Visible boundaries are drawn everywhere and private areas are clearly marked.

Green Clusters marks the final completion of the new area and clearly sets itself apart from the typical suburban settlement structure. The urban design for the green district should promote an open living style and define private spaces without needing fences.



surroundings and the site



The designed structure clearly sets itself apart from the typical suburban settlement structure. There are no typical single-family houses, which are not sustainable as a form of settlement. The project gets the residents to move closer together, which at the same time generates more free spaces for everyone. It adapts to the given site and makes reference to the surrounding forest.

It works as a coherent complex but it also creates spaces that can be seen and used by the residents living in the surrounding area. The following shows how the independent structure was created with due regard for the environment. Various design aspects support the overall concept and are explained on the following pages before the living concept is shown.

- **A NEW DISTRICT**
- **ENERGY TOWERS**
- **GREEN SPACES**
- **CONNECTIONS**
- **COURTYARDS**
- **COMMUNITY BUILDING + GARDENING**

# A NEW DISTRICT



## DIMENSION OF ARCHITECTURAL USE

	area
	[m <sup>2</sup> ]
size of the whole area	52.667
ground floor area	10.745
area of all floors	25.850
area of all floors (housing)	23.905
rentable area of living space (without walls, stairwells, etc.)	ca. 16.800

## GROUND AREA

	area	rate
	[m <sup>2</sup> ]	%
public green space	13.674	26%
private green space	5.544	11%
streets + walkways (fixed surface)	15.508	29%
walkways + courtyards (gravel road)	7.196	14%
ground floor area	10.745	20%
	<b>52.667,00</b>	<b>100%</b>

# A NEW DISTRICT

Moving the blocks so that each has a wide view into the green



Opening the blocks for more exciting courtyards and let them work dynamically



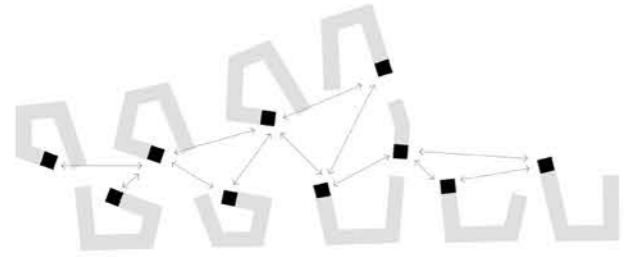
Defining a central point to which every block has visual contact



siteplan 1:2000

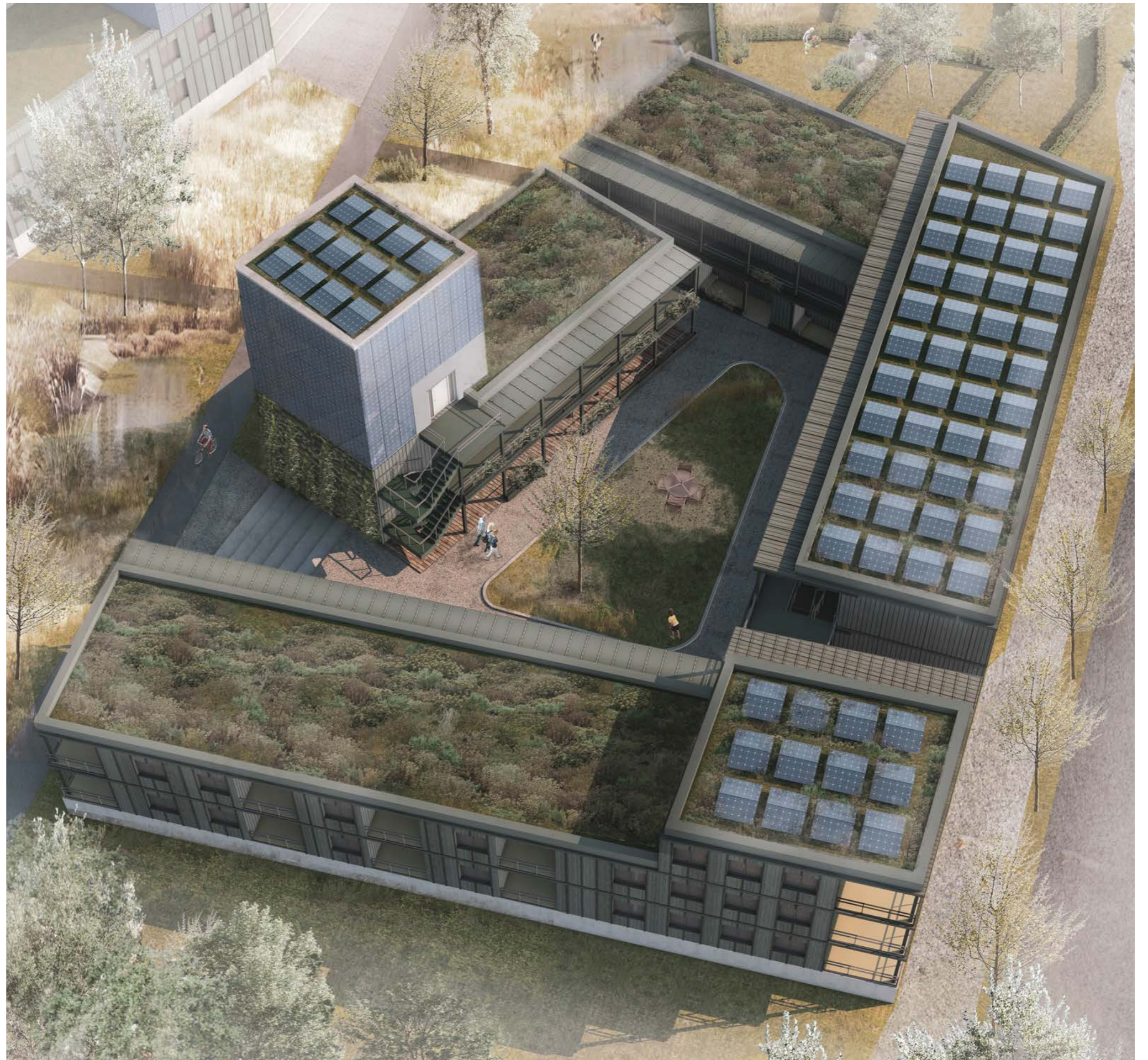


## ENERGY TOWERS



Defining fix high-points and set them into relationship

Part of the task was to integrate enough solar panels into the design to supply the area. They should not simply be placed on the roofs, but be integrated somehow. So to raise awareness of solar power usage eye-catching glass boxes land on the wooden buildings almost ironically and form a clear contrast. The added boxes are never shaded by any other buildings.



# GREEN SPACES



Transforming vacant lands to wet lands  
Reducing heat with water + vegetation

An important design aspect are the open grass and water areas that function as evaporation zones. While most settlement areas have many sealed surfaces, there are hardly any here. The water zones can quickly absorb water when it rains or it can run into retention basins. Water areas help to cool the area naturally. Plants and trees clean the air, create a good microclimate and give shade in the summer.

Soft nature and hard architecture come together. The wild grasses contrast with the sharp edged buildings.

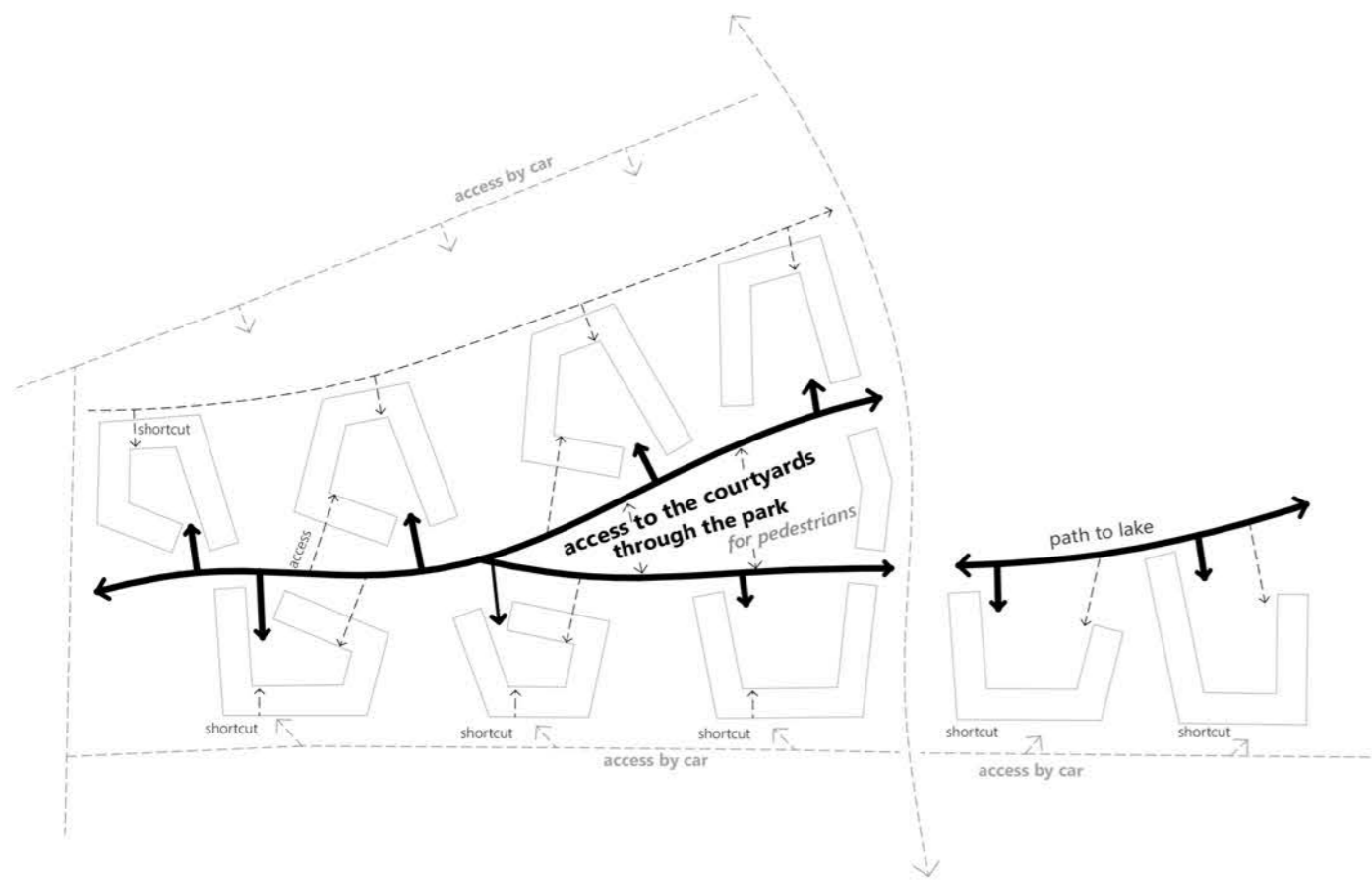


# CONNECTIONS

The pedestrian is clearly preferred. The main development takes place through the large park, which invites you to stroll and linger. The main entrance is clearly highlighted: by raising the inner courtyard, you first have to go up a staircase. At the same time, access narrows at first, then opens up to a wide courtyard. The facade facing the stairs is covered with plants.

In addition to the main development, there are two short cuts per cluster. The first connects the courtyard with the street, thus allowing easy access from the outside for car drivers and cyclists. The second short cut forms another entrance from the park. However, it is less noticeable and runs as a bridge through the water and grass landscape.

The entire inner area remains car-free. There are overground garages in the north. The southern clusters have underground parking.





## COURTYARDS

The structures each include a convex courtyard. The staircase leading to the courtyard creates a soft boundary between the public and semi-public space without completely isolating. The place is both public and intimate. Its depth and the form enables a protected, quiet atmosphere and is

significantly more attributed to the use of the surrounding residents than that of the publicity.

Another level of privacy is created by the veranda-like base zone that acts like a buffer zone. A further step to the veranda gives a slight rise from the square, so that there is a threshold when stepping out of the apartment onto the square.



Maiengasse, Basel (Switzerland) Eschintzel architects

Le Polygone, Rennes (France), Bourbouze & Graindorge architects

Centrale Werkplaatsen, Leuven (Belgium), Bogdan & Van Broeck architects







## COMMUNITY BUILDING + GARDENING

In the center of the area there is a community place. A building provides space for a café, a shop selling regional groceries and flexible spaces that can be rented for a short time. For example, exhibitions, workshops or parties can take place there. As a highlight, there is a spacious green-

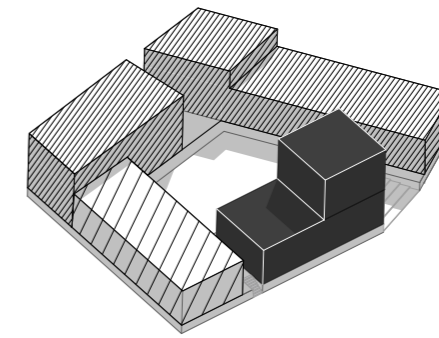
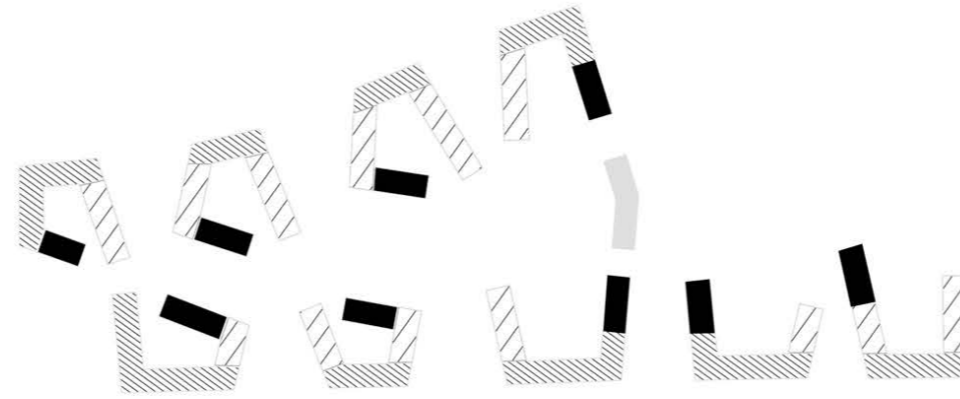
house on the roof, in which these foods can be grown, thus contributing to the sustainability of the district. In front of the building there is, next to an outside area for the café, a garden where you can also plant plants and food. This garden should be shared and maintained by the community. The bed areas can be rented by residents, so that there is a clear responsibility.



Quartierzentrum Ausser-sihl, Zurich, arc-architekten

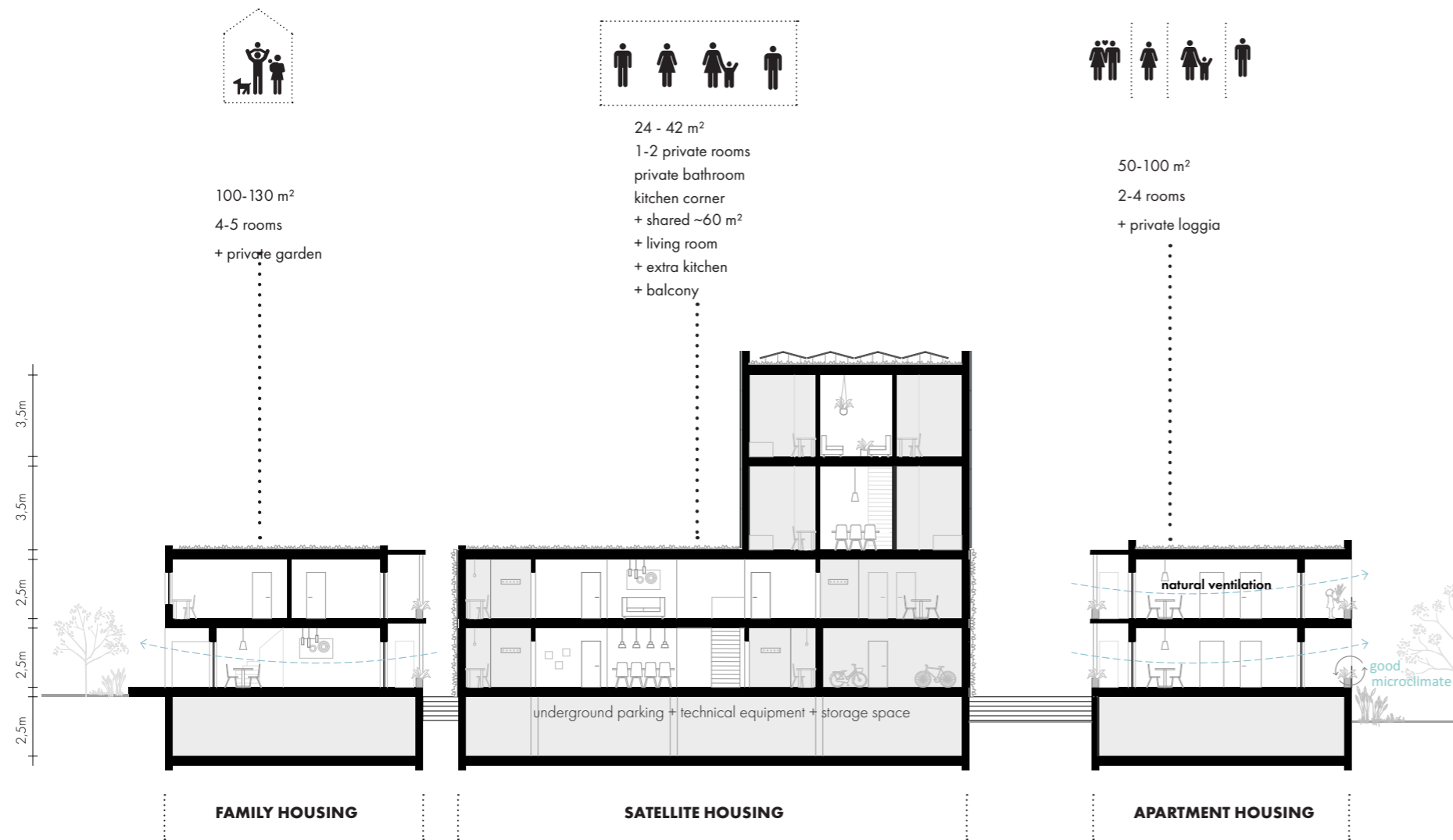


# 2 HOUSING CONCEPT



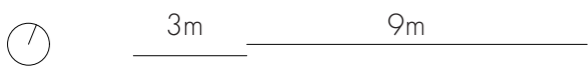
## STRUCTURE OF ONE CLUSTER

In each cluster, three different apartment types come together: the two-floor family house with a private garden, small apartments for two to four residents and so-called satellite apartments, which are a cross between a shared flat and a small apartment: each resident has his own room with bathroom and kitchenette. Additionally common areas, a spacious kitchen and a wide living area complement the private areas. The satellite apartments are always in the buildings facing the park. The common rooms can be seen from the park and show a lively housing.



SECTION A-A

- SATELLITE HOUSING
- APARTMENT HOUSING
- FAMILY HOUSING



## ENTRANCES

Arriving at your home is supposed to be an important design aspect that is often neglected. The arrival doesn't just start at your own front door, but

much earlier. The way to the apartment through the park, via the stairs through the courtyard, is a staged coming home.

Your own entrance, which can be seen from the outside, helps to identify

with your apartment and to feel at home. It is generously designed, like a separate room, so that there is space for personal things that you want to show outside. It invites you to rest and it offers useful storage space.

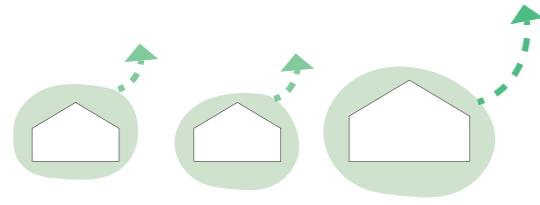


## GALLERIES

Furthermore the galleries are a part of coming home. By setting back the entrances, the corridor is clearly zoned into walking areas and private entrance areas. They can become a place of communication for neighbors. At the same time, especially in the south, they are a structural sun protection.



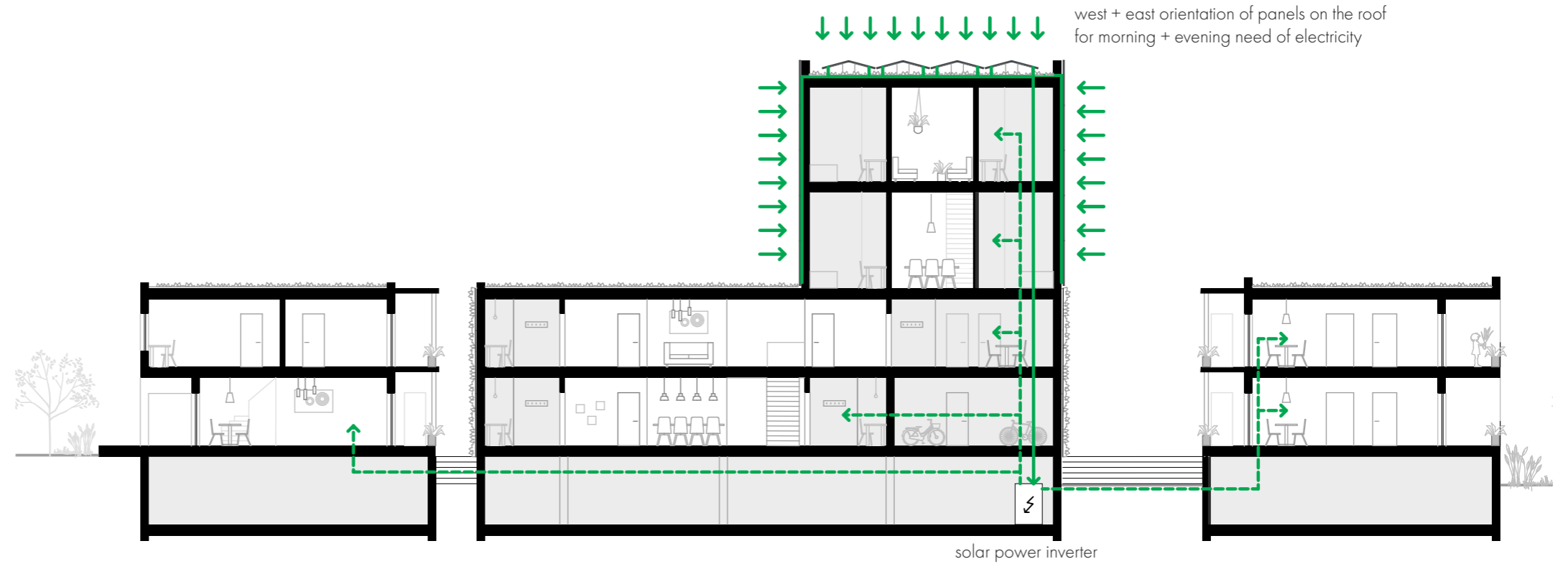
### 3 ENERGY CONCEPT



**SINGLE GRID**  
loss of not used electricity



**SHARED GRID**  
shared use of electricity - less losses



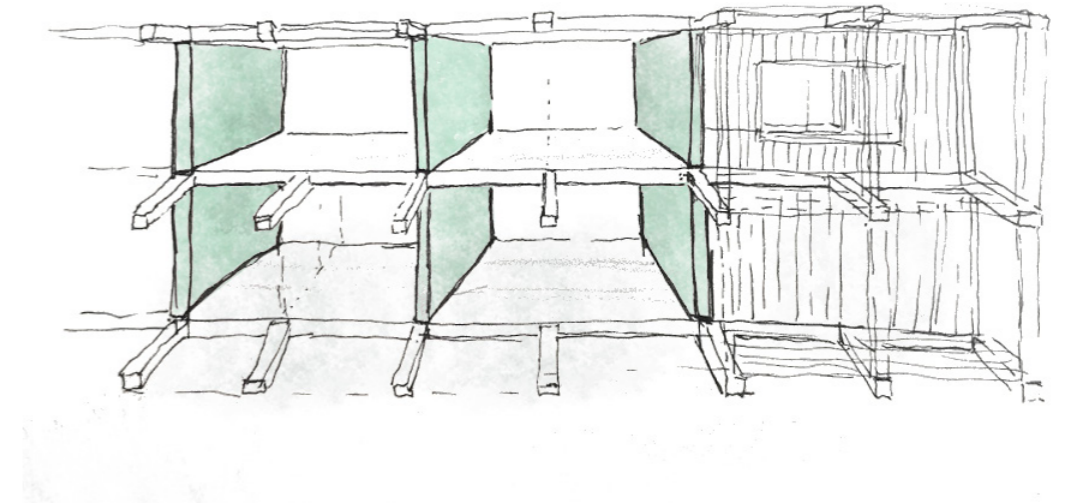
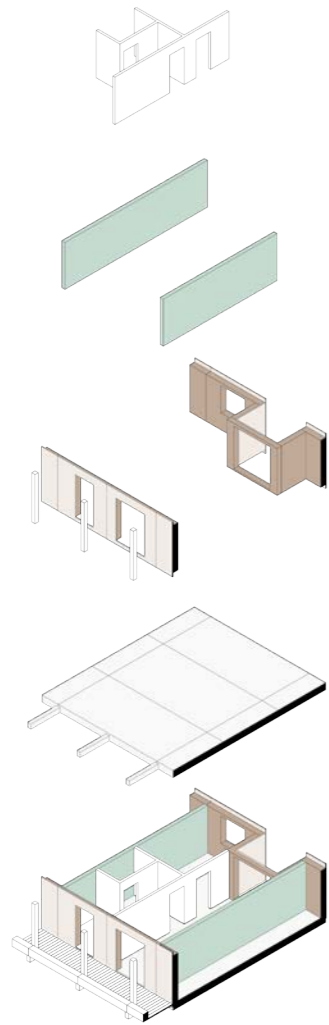
The electricity power is shared in each Cluster. Since it can be assumed that not everybody needs a lot of electricity at the same time, fewer modules are required overall and there is less unused electricity. Each Cluster only needs one inverter and it is more easy to invest in a common battery to store electricity.

# 4 CONSTRUCTION CONCEPT

A clear, simple structure can be seen in the floor plan, which is an advantage for the construction. The inner walls support the load - arranged in parallel at a distance of 6 meters as so-called cross walls. These can be manufactured as prefabricated Cross-Laminated Timber (CLT) walls.

The walls are stabilized via the composite ceiling, which is as well formed out of CLT that remain visible. The outer walls are therefore not load-bearing and are designed as a wooden frame construction with colored varnished formwork.

Thanks to the clear building structure, it is possible to element and prefabricate. Prefabrication can shorten construction times and avoid waste on the construction site. High quality can be ensured in the factory. Since the entire area can be built with the same basic elements, overall costs can be saved. Ecological sustainability is powered by economic sustainability.



# FACADES AND MATERIALS

