Regensburger Nordstern

Schwarzplan 1:15.000

Concept

Regensburger Nordstern creates an urban and green connection between the existing settlements of Burgweinting and the Regensburg-Ost industrial area. The green heart of the new neighborhood is a star-shaped park with blue-green connections that flow organically into the surrounding with the new mixed-used neighborhood islands. The center of the quarter is the newly area around the existing S-Bahn station Burgweinting. The building structure is based on three plates 1. residential towers to accentuate important landmarks, 2. mixed-used neighborhood islands with shared courtyards and 3. commercial courtyards for flexible use. The quarter is connected to the surrounding network, which makes it a climate-neutral and car-reduced district. It is also innovative in terms of energy production and consumption.

Urban design

The basic urban design motif is formed by the existing settlement structure and the surrounding landscape and is in the middle South-Island forms a star-shaped park with blue-green connections to park or the main development - with 4-7 storey high residential buildings. Along the edges of the blue-green corridors with 3-storey townhouses. Every island has a connection to public spaces and a mix of residential and commercial. Commercial yards are integrated into the neighborhood islands, which also act as noise protection. The residential towers are located at strategic changes to coarser commercial structures. Most of them have common commercial yards and are located in the transition zone between the commercial structures and the north.

The new district, which includes islands, the new center at the S-Bahn station and the new educational campus, is bordered by the existing settlement areas and the central Park am Stein. The solitary buildings in the new center form a square with the existing residential tower in the south. The 8-storey residential tower in the new center also forms an important landmark in the origin-front of landscape.

Green and open space

The new park and the blue-green forms the central framework and connects the new district with the surrounding areas. It connects the existing settlements of Wutzelhofer/Graßlfeld and Wöhrthwg. The park is designed as a star-shape with 4 arms. It has an urban character, the blue-green corridors feeding away from it have more vegetation and are more 'rural'. The park is a multi-functional open area along the cartoyal line will be integrated into the green network as a green oasis between the existing and the new residential areas. This will create synergies with the school right next to it. The park is also a transition zone between the edge of the settlement existing and the urban. The park is also a climate-resilient area. It also has a climate-resilient rainwater-retention-basin and courtyards with the adjacent landscape.

A central element of the green and open space concept is the rainwater management concept. It aims, By integrating retention areas in the green and open spaces, the rainwater accumulated in the neighborhood islands is diverted into the open space. Larger collection points are located in the lowest areas of the park and serve as a rainwater retention basin to the west of the school. However, the retention basins should be designed as attractive bodies of water and as a design element of the open space. The rainwater management in the green network can therefore contribute to the cooling of the urban heat island effect and help to cool down the neighborhood islands in the 'hot' summer months. In addition, the public green spaces, areas for allotment gardens are planned on the western edge.

The areas in the streets and squares are provided with trees and 'green' parking spaces, which in order to keep surface sealing to a minimum. Overall, the high proportion of green spaces and the 'green' parking spaces should ensure a balance of fill in relation to the project area.

Mobility

The new district should offer a flexible basic structure for current mobility requirements and for future changes. The connection to the existing Charter Straße and the extension of Hatzfeldstraße will be the main routes for motorized traffic. The residential islands in the new district are mainly used for due traffic, but can be opened up to local residents. Motorized traffic can drive through the residential islands on the Charter Straße and Hatzfeldstraße. Garage or in the S-Bahn station Burgweinting. The residential islands are largely kept free by the 4-storey quarter garages, which are located on the edge of the residential islands and intercept the little traffic from the residential islands. They keeps the secondary development free of cars and thus ensure more open space for retention areas in the streets. The neighborhood garages are also used as decentralized energy and mobility infrastructure (e.g. e-bikes, carsharing) for the citizens.

With the regional bus station (RDB), which is located directly next to the S-Bahn station, the new center, Regensburg's Nordstern will become a mobility hub for the 'Regensburg Nordstern' district and the city of Regensburg in the future. The bus station, the S-Bahn station and the neighborhood garages form an important mobility hub in the entire north of Regensburg. The cycle path network should continue via the Karolgäuze extension and thus better connect the new educational campus to the existing settlement areas.

For pedestrians and cyclists, the new bridge over the railway line should be the main connection to the main quarter. This also represents an important addition of an east-west direction in the existing cycle connection in a north-south direction.

Uses

With this new center and the school campus, important new uses for the entire north of Regensburg are being created in the Burgweinting-Ost district. In addition to the infrastructure for mobility, a new location for the Regensburg City Library is also being planned in the new center. This will be built on the first floor of the Parkhäuser parking garage and the base of the 15-storey residential tower, which is a landmark in the cityscape. The new school campus with a 4-stream elementary school with adjoining sports areas, 2-stream high school and 2-stream vocational school forms the other building block in the social axis. The 3-storey school buildings are arranged in islands. Alternative, active first floor areas for 'non-disturbing' commercial and cultural spaces (cinema, pub, the main development) are located at the edge of the park. In the transition to the commercial areas, 3-storey residential buildings are arranged such as noise due to the greater depth of the buildings on the first floor of the residential islands. Alternative, active first floor areas for commercial uses are even more strongly integrated into the residential islands as noise protection. In the northern part of the new district, 3-storey residential buildings are mixed-use. The commercial areas offer space for various sizes of smaller commercial enterprises.

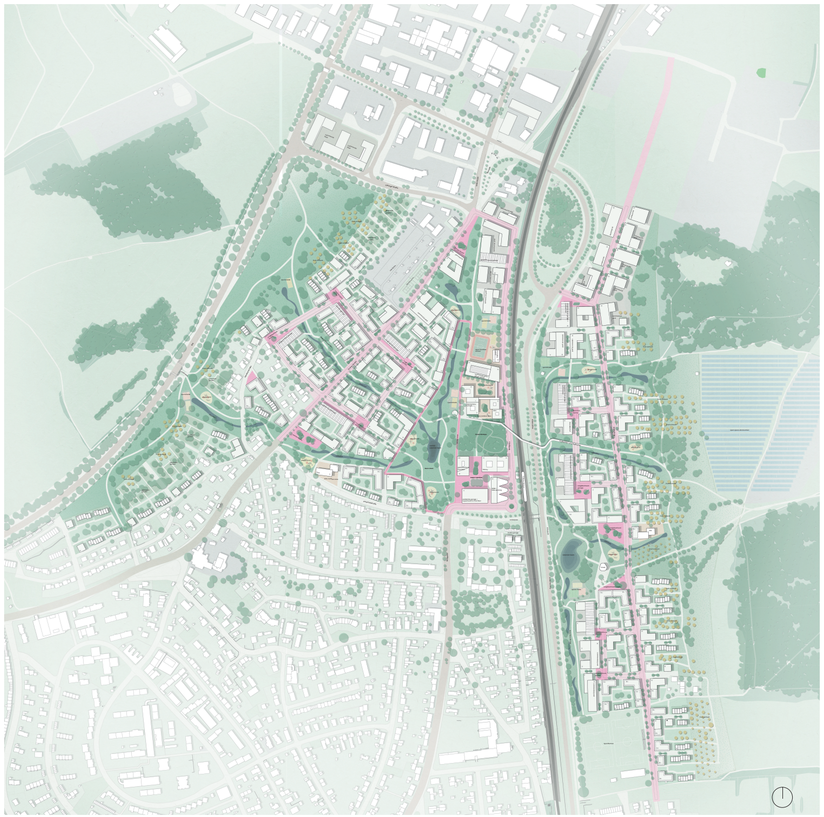
Step by step development

The new district is planned and divided into different development stages thanks to the concept of the district islands. The first building block to be developed is the new center with the residential tower, Charter Straße and the railroad line, whereby the 'Parkhäuser' parking garage and the new library, the school campus and the central park can be developed in parallel. The second phase in the Stage could follow. In the second phase, in the next two phases, the areas to the west of the Charter Straße and the 'Parkhäuser' parking garage The 15th could be developed. The commercial redevelopment can be implemented simultaneously to the other phases.

Total housing units: 2.236
NGF housing: 217.000 qm
Residents: approx. 5.000 (qm 96,3/M, spon in the project area + 87/M spon residential)

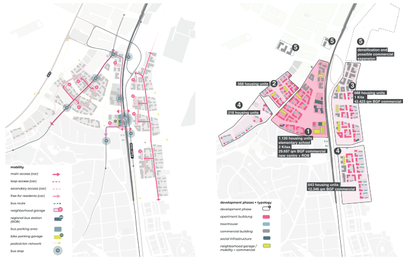
soil sealing in relation to the project area
(with seedings and plants)

structure plan without scale



site plan 1: 3.000

Regensburger Nordstern

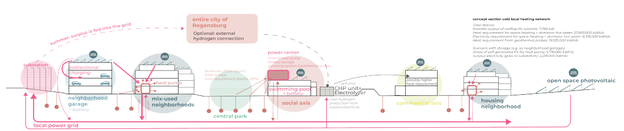


mobility

development phases + typology

open space + blue-green infrastructure

energy concept



energy concept

isometry 1:1.500

Energy concept

The energy concept is characterized by cold district heating network (Kalte Nahwärmenetz), which makes it a climate-neutral drivesaver project. The cold local heating network is a low temperature energy and heating requirements are covered by its distribution network and by isolated energy produced by the PV systems on the roofs of the buildings. Hardly any self-sufficient energy system are the commercial buildings, the residential buildings and garages. PV systems, geothermal probes, an energy center and a river turbine are planned in the district. CHP unit (Kelvin) with electrolyzer if the district wants to produce its own hydrogen.

The residential buildings are equipped with PV electricity from PV systems on all roofs and the open space PV system in the east of the area. Each is 1.700 kW. The PV system on the roofs of the 4-7 storey blocks and has a neighborhood garage, which also serves as a mobility hub (e.g. with charging stations for bidirectional charging, the solar power produced on the roofs of the residential buildings is used to decrease cost. This principle is currently being researched and represents an important future technology that will be established in the next 5 years.

The surplus electricity is fed directly into the local power grid. The heat pumps can be used to heat and store the solar power and heat from the geothermal probes. The heat pumps can be used for heat and cooling. The heat pumps are part of the energy infrastructure block by block and island by island, an efficient system is created. Geothermal probes will be installed in the area between the residential and the school campus and the Park Am Stein. Depending on how deep the probes can be drilled, an area of approx. 20 to 50 x 50 m deep is required for 100 kW. The area should be large enough sufficient for geothermal probes. These should be no-foreshore under the buildings to make manoeuvrability possible.

An energy center is located in the social axis. Its location directly next to the indoor swimming pool can be used as a central heat. The indoor swimming pool can be used as a central heat storage facility. In addition, the energy center has a cooling system for the indoor swimming pool, the memory school and the ICS as well as the pumping system for the geothermal probes. In this way, the heat and cold from the geothermal probes are processed in a central location close to the consumers. The probes can be used for educational purposes in schools.

The commercially used areas are also equipped with PV roofs and heat pumps. In the online area, there are 2 rivers, the Regen and the Kelvin, which also electricity can be used for an own hydrogen production. This has the advantage that Buxtehude's 'Kelvin' is a small river and the Regen is a federal canal. We are located here. An electrolyzer converts the surplus electricity (which is collected in the local power grid) into hydrogen. The hydrogen heat and power cold) can in turn be used to produce any higher heat requirements.

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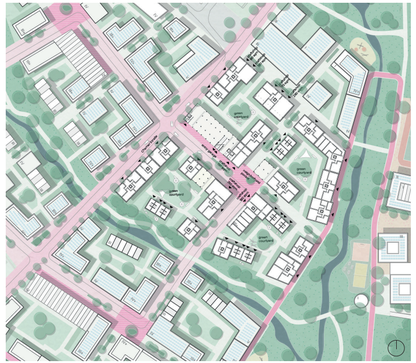
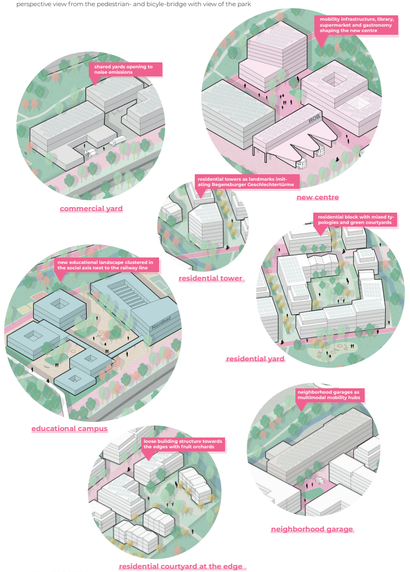
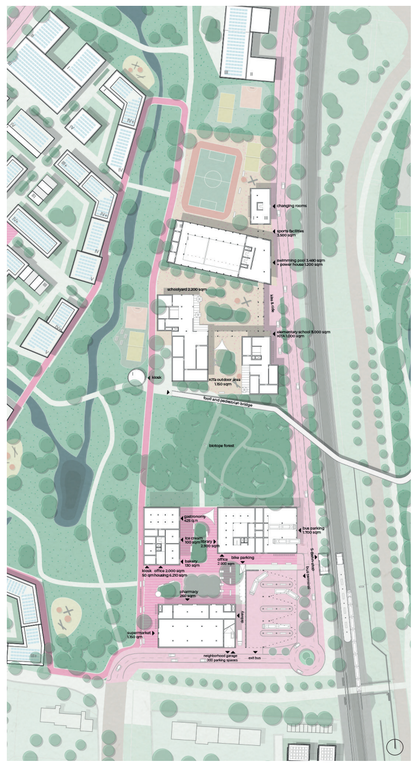
perspective view from the pedestrian- and bicyle-bridge with view of the park



zoom-in neighborhood island 1: 1.000



typologies: main principles



zoom-in new centre 1: 1.000

perspective new centre